NIH GUIDE for GRANTS and CONTRACTS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Vol. 10, No. 6, April 17, 1981

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If your present address differs from that shown on the address label, please send your new address to: Grants and Contract Guide Distribution Center, National Institutes of Health, Room B3BN10, Building 31, Bethesda, Maryland 20205, and attach your address label to your letter. Prompt notice of your change of address will prevent your name from being removed from our mailing list.

The GUIDE is published at irregular intervals to announce scientific initiatives and to provide policy and administrative information to individuals and organizations who need to be kept informed of opportunities, requirements, and changes in grants and contracts activities administered by the National Institutes of Health.

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National Institutes of Health
Division of Safety
Building 13, Room 2E43
Bethesda, Maryland 20205

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TERMINATION OF SUPPLY OF AGED SPRAGUE-DAWLEY RATS

NATIONAL INSTITUTE ON AGING

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The rats are obtainable from cohorts 9 to 26 months of age, although the availability of animals in the older groups varies. The cost per rat is equal to $3.49 plus the product of $3.58 and the number of months maintained beyond 6 months of age. For example one 24 months-old Sprague-Dawley rat would cost: $3.49 + (3.58 x 18) = $67.93.

This notice refers to the Sprague-Dawley rat only. The NIA continues to maintain under commercial contracts colonies of aged inbred Fischer 344 rats and inbred strains of mice for aging research. For information on ordering the Sprague-Dawley rats write or phone:

Mrs. Jane Soban
Extramural Grants Clerk
Office of Biological Resources
and Resource Development
Biomedical Research and Clinical
Medical Program
National Institute on Aging
9000 Rockville Pike
Building 31, Room 5C-21
Bethesda, Maryland 20205
Telephone: (301) 496-9350

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The aged mice will be provided to NIA-supported invesitigators currently engaged in aging research, for pilot studies in anticipation of later submission of a research grant application on aging, and for pre-doctoral studies leading to a dissertation on aging. Investigators interested in acquiring animals from the aging mouse colonies must submit a request indicating numbers of animals required, date and intervals at which animals are needed, and any special requirements which must be met. If the investigator is not currently supported by the NIA, he should submit also a brief outline of the proposed studies, recent publications indicative of studies related to the proposed project, and a curriculum vitae. The acquisition of animals for pre-doctoral studies requires the submission of an outline of the study protocol on which the dissertation will be based, and approval of the request for animals by the dissertation director. Upon submission, the proposal will be evaluated for merit and the applicant will be notified of the decision.

Since the NIA Aging Animal Contracts are partially self-sustaining, reimbursement for the mice at $0.60 per month of age must be made by investigators currently supported by the NIA. Animals required for pilot or pre-doctoral studies will be provided without per diem charge if it is determined that the data or thesis developed from the study are relevant to the NIA's program on aging research. A final summary paper, or copy of the dissertation, must be provided to the NIA on completion of the studies.

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ANNOUNCEMENT

TREATMENT OF VIRAL INFECTIONS OF ORAL SOFT TISSUES

NATIONAL INSTITUTE OF DENTAL RESEARCH

I. BACKGROUND

The Soft Tissue Stomatology and Nutrition Program Branch of the National Institute of Dental Research (NIDR) is encouraging submission of individual research grant applications for studies which will improve the treatment of oral facial herpesvirus infections.

The most common form of herpesvirus infection of the oral facial complex results in herpes labialis, otherwise known as cold sore or fever blisters. These are ususally recurrent lesions, seldom fatal but which cause considerable pain and discomfort to a large segment of our population. Occasionally the same herpes simplex virus (HSV-1) cause skeratitis, encephalitis, gingivostomatitis, or can be spread to the genitals. Recent developments in the use of antiviral compounds have been encouraging; however, studies designed to improve treatment methods are sought.

II. RESEARCH GOALS

The NIDR encourages the studies of all phases of treatment. These include but are not limited to studies on a) drug penetration, b) drug analog development and c) new drug development. These subject areas are not listed in the order of priorities and are not meant to exclude other approaches to treatment of the infection.

1. Drug penetration

   The antiviral substances developed and tested on herpes labialis are most commonly applied topically. Drug vehicle research and development are encouraged to aid penetration of the skin and increase the concentration of the antiviral substance in the tissues where the virus is replicating.

2. Drug analog development

   Studies on analogs of currently active drugs are encouraged to promote more effective treatment of herpes labialis lesions.

3. New drug development

   Investigations which may lead to the development of new, promising drugs or new approaches to the therapy of herpes labialis lesions are encouraged. The NIDR does not however, intend to support large scale drug development and screening programs.

III. MECHANISM OF SUPPORT

The mechanism of support for this program will be through traditional research project grants (P01, R01 and R23). The legislative authority is Section 301 of the Public Health Service Act. (PL. 78-410 as amended, 42 USC 241). The Catalog of Federal Domestic Assistance number is 13.878, Soft Tissue Stomatology and Nutrition Research. Policies that govern research grant programs of the National Institutes of Health will prevail. The award of grants pursuant to this request for grant applications is contingent upon receipt of proposals with high scientific merit and the availability of appropriate funds.

IV. REVIEW PROCEDURES AND CRITERIA

Applications will be received by the Division of Research Grants (DRG), National Institutes of Health. DRG will refer the proposals to the appropriate study section for scientific review and will make the institute assignment for review by an Advisory Council. It is possible that studies proposed in response to this announcement could overlap with the interests of more than one institute at NIH. In such cases the DRG will make the final assignment decision.

Applications in response to this announcement will be reviewed in accordance with the usual National Institutes of Health peer review procedures. Factors considered in the scientific merit evaluation of each application will include an assessment of the importance of the proposed research problem, the novelty and originality of the approach, the training experience and research competence of the investigator(s), the adequacy of the experimental design, the suitability of the facilities, and the appropriateness of the requested budget relative to work proposed. Following study section review, the application will be evaluated for program relevance by the appropriate Institute Advisory Council. Funding decisions will be based upon relative scientifc merit and the Institute's ability to fund.

Applications will be accepted in accordance with the usual dates for new applications on an indefinite basis. The deadlines for receipt of new applications for the next three review cycles are:

July 1, 1981
November 1, 1981
March 1, 1981

V. METHOD OF APPLYING

Applications should be submitted on form PHS 398, which is available in the business or grants office at most academic or research institutions. If not, an application form may be obtained from:

Office of Grants Inquiries
Division of Research Grants
National Institutes of Health
Westwood Building, Room 448
Bethesda, Maryland 20205

The phase **"PREPARED IN RESPONSE TO NIDR HERPES ANNOUNCEMENT"** should be typed across the top of the first page of the application. The original and six copies of the application should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

Further information may be obtained by contacting:

Dr. Paul D. Frazier, Chief or
Dr. David A. Wolff
Health Scientist Administrator
Soft Tissue Stomatology and
Nutrition Program Branch
National Institute of Dental Research
National Institutes of Health
Westwood Building, Room 510
Bethesda, Maryland 20205
Telephone: (301) 496-7808

ANNOUNCEMENT

WOUND HEALING IN CRANIOFACIAL INJURIES

NATIONAL INSTITUTE OF DENTAL RESEARCH

The National Institute of Dental Research (NIDR) invites applications in basic and clinical research which is relevant to acquired craniofacial defects. Emphasis is placed on securing proposals dealing with responses of oral and craniofacial tissues to trauma. Such studies could include immediate and long-term responses of soft and hard tissue to injury; signals directing cellular migrations; factors carrying out the removal of damaged cells and tissues; the mechanisms of repair and regeneration; and the factors terminating the repair process. Studies on the repair of bones and teeth are of particular interest as are studies on conditions such as diabetes and aging which interfere with repair. Methods to accelerate or improve repair are of interest. It is expected that such studies could encompass a variety of disciplines in the health sciences including anatomy, pathology, chemistry, immunology and cell biology.

The deadlines for the receipt of research grant applications by the Division of Research Grants are March 1, July 1, and November 1. Review and award of such applications will be through the usual NIH procedures governing research project grants.

Inquiries regarding this program may be addressed to:

Dr. Jerry D. Niswander
Craniofacial Anomalies Program Branch-EP
National Institutes of Health
Westwood Building, Room 520
Bethesda, Maryland 20205
Telephone: (301) 496-7807

This program is described in the Catalog of Federal Domestic Assistance number, 13.842, Craniofacial Anomalities. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74. This program is not subject to A-95 Clearinghouse or Health Systems Agency Review.

ANNOUNCEMENT

BASIC AND CLINICAL STUDIES OF NORMAL

DEVELOPMENT AND DEVELOPMENTAL DEFECTS

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

I. PROGRAM SPECIFICATIONS

A. Program Objectives

Seven percent of all babies are born in the United States each year with mental or physical defects. One fifth of all infants who die by the age of four do so because of congenital defects. In addition, a major proportion of spontaneously miscarried pregnancies are associated with developmental defects.

Congenital defects are defined as structural,functional, and biochemical anomalies that are initiated in the human organism prior to birth or shortly thereafter and cause immediate or delayed abnormality. Causes of developmental defects may either be genetic, i.e., gene mutations or chromosomal aberrations, or may include diverse agents in the internal or external environment of the developing embryo, fetus, or child. Most often developmental defects appear to result from abnormal interactions of genetic and environmental factors. The etiology of 65 to 75 percent of all congenital defects is, however, still unknown.

The Institute therefore encourages research into the causes of birth defects. Studies of etiologic factors, normal and abnormal basic developmental mechanisms, and clinical entities are emphasized. A combined clinical and developmental biologic approach should lead to a better understanding of the processes of development of birth defects.

B. Research Scope

This announcement emphasizes research on normal and abnormal human development during the periods prior to conception through early maturity. Investigations may be at the basic and/or clinical level, utilizing knowledge and techniques employed in disciplines such as

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This program is described in the Catalog of Federal Domestic Assistance number 13.865, Research for Mothers and Children. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74. This program is not subject to A-95 Clearinghouse or Health Systems Agency Review.

developmental genetics, developmental biology, teratology, and developmental immunology. They may include human and other mammalian models but may also use those nonmammalian models relevant to the understanding of normal human development and the production of birth defects.

Some areas of research interest are listed below. They are not presented in order of priority, but serve as examples only. Other research areas related to normal and abnormal human development, derived by the applicant, would be equally welcome.

Developmental Genetics

Essential to a better understanding of human development is an increased knowledge of the role of genetic factors in normal human maturation and susceptibility to disease. NICHD thus encourages studies in human and clinical genetics, including family investigations of mutant genes affecting metabolic and morphologic development, twin studies to distinguish genetic from environmental determinants of development, and population genetic studies to establish distributions and frequencies of abnormal genes. Of interest also are screening, diagnostic, and treatment studies of human genetic diseases which would investigate autosomal and sex chromosomal abnormalities underlying developmental problems as well as DNA sequence polymorphisms as markers of hereditary disease. Studies of basic genetic regulatory mechanisms are encouraged insofar as they provide understanding of human developmental processes. They may include identification of genes specifying normal and abnormal developmental processes; determination of gene structure, function, and mechanisms of gene action; determination of genetic regulatory elements; study of developmental expression of "structural" genes in specific tissues at certain developmental states; and assignment of genetic loci on chromosomes to specific normal and abnormal gene products.

Developmental Biology

Our understanding of human development would be further advanced by studies on the integration of epigenetic factors into the maturation of a complete organism or human being. Such investigations would include the contribution of maternal cytoplasmic substances to the early development of the fertilized egg, as well as the role of physiological and chemical gradients in oocyte asymmetry and subsequent organization of the developing embryo. Studies relevant to human development are also encouraged of intra- and extracellular as well as cell surface components in morphogenetic tissue interactions, and of the biogenesis of subcellular particle (e.g. mitochondria) and the biosynthesis of biologically important macromolecules (e.g. proteoglycans, collagen, fibronectin) and organ-specific products (e.g. myelin, actin, myosin) during biochemical and morphological maturation, as well as investigations of trophic and endocrine influences on organogenesis. Of special interest are studies of the development of the limb.

Teratology

An increased understanding of deviant human development leading to congenital defects requires investigations of the causes and mechanisms producing disruptions in the normal human developmental program prior to conception through early childhood. NICHD therefore encourages studies of inborn structural, functional, and biochemical defects that are initiated in the human being prior to birth or shortly thereafter and cause immediate or delayed abnormality. Of interest are anomalies which have a hereditary basis and those which are caused by a nonhereditary insult such as infections, maternal metabolic imbalances, immunologic reactions, drugs, environmental chemicals, nutrition, ionizing radiation, ultrasound, or thermal variations, as well as abnormalities which are of multifactorial origin. Investigations are encouraged at the basic gene and chromosome level, as well as at the cell, tissue, and organ levels, to determine specific divergent developmental disorders. Of further interest are clinical studies for the identification of new defects and the derivation of new treatment modalities, epidemiological studies to separate genetic from environmental causes of birth defects, family and population genetic studies to define the mode of inheritance of congenital disorders and establish frequencies of abnormal genes, and studies which would derive animal models for abnormal developmental mechanisms in man. Emphasis is given to studies of limb malformations involving both hereditary and environmental causes.

Developmental Immunology

This category includes investigations on the ontogeny of the immune system during human embryonic, fetal, and infant development, and on the phylogeny of immunity to gain insight into the normal evolution of the reticuloendothelial system. Encouraged are studies of immune system development during periods of malnutrition, immunological properties of breast milk, the mechanisms that may pertain to the mother's experiences with infection, the transfer of protection to the infant through breastfeeding, the events following ingestion of milk in the infant's digestive tract, and possible hazardous effects of breast feeding. Also of interest are studies of the immunologic vulnerability of prematures and newborns resulting in increased morbidity and mortality due to infections and diseases with emphasis on factors influencing or altering the immune response due to age dependent events. Reproductive immunological investigations of the fetus as an allograft during pregnancy are encouraged, as are studies of the placenta as an immunological barrier and in regulation of the maternal immune response.

II. METHOD AND CRITERIA OF REVIEW

A. Assignment of Applications

Applications will be received by the Division of Research Grants, NIH; referred to an appropriate study section for review; and assigned to an institute for possible funding. Assignments to institute will be made by the DRG according to the NIH Handbook of Referral.

B. Review Procedures

Applications received in response to this program announcement will be reviewed on a nationwide competitive basis in accord with the usual NIH peer review procedures. Proposals will first be evaluated for scientific and technical merit by an initial review group of mostly non-Federal scientific consultants. Following study section review, applications will further be reviewed for program relevance by the Institute's National Advisory Council. The customary NIH review criteria for regular research grant applications will prevail.

III. METHOD OF APPLYING

A. Format for Applications

Applications are to be submitted on form PHS 398 which is available in the business or grants and contracts office at most academic and research institutions or from the Division of Research Grants, NIH. The phrase **"PREPARED IN RESPONSE TO THE BASIC AND CLINICAL STUDIES OF NORMAL DEVELOPMENT AND DEVELOPMENTAL DEFECTS ANNOUNCEMENT"** should be typed across the margin at the top of the first page of applications. Original applications and six copies should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

B. Deadline

Applications will be accepted by the usual receipt dates for new proposals: July 1, November 1, and March 1.

IV. INQUIRIES

Inquiries may be directed to:

Head, Genetics and Teratology Section
Clinical Nutrition and Early Development Branch
Center for Research for Mothers and Children
National Institute of Child Health
and Human Development
National Institutes of Health
Landow Building, Room 7C09
Bethesda, Maryland 20205
Telephone: (301) 496-5575

ANNOUNCEMENT

RESEARCH INTERESTS OF THE KIDNEY DISEASE AND UROLOGY PROGRAM

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM AND DIGESTIVE DISEASES

The Program has a special interest in stimulating investigator-initiated research grant applications (R01s) and training by National Research Service Awards, in both fundamental and clinical investigations of the mechanism and disease processes of the kidney and urinary tract.

Research supported by the RENAL PHYSIOLOGY/PATHOPHYSIOLOGY PROGRAM includes:

- SPECIFIC IMMUNE MECHANISMS OF KIDNEY DISEASE, including glomerulonephritis, interstitial nephritis, lupus nephritis, etc.
- EFFECTS OF DRUGS, NEPHROTOXINS, AND ENVIRONMENTAL TOXINS ON THE KIDNEY, including analgesic "associated" nephropathy.
- DISEASES AND MECHANISMS LEADING TO CHRONIC RENAL DISEASE, including diabetic nephropathy, polycystic renal disease, etc.
- STRUCTURE AND FUNCTION OF THE KIDNEY, including metabolism, transport and fluid-electrolyte dynamics.

Research supported by the UROLOGY including UROLITHIASIS PROGRAM includes:

- LOWER URINARY TRACT PHYSIOLOGY AND PATHOPHYSIOLOGY, including neuromuscular mechanisms i.e, bladder dysfunction, dyssynergia, incontinence; vesicoureteral and renal reflux.
- URINARY TRACT INFECTION, including bacterial adhesion, local immune response mechanisms, pyelonephritis and interstitial cystitis.
- BENIGN PROSTATIC HYPERPLASIA-PROSTATITIS, including normal and abnormal growth, biochemistry, steroid receptors, therapeutic modalities and animal models.
- UROLITHIASIS and related disorders of divalent ion metabolism (calcium, magnesium and phosphorus) including diagnosis and treatment, physical chemistry, endocrinology, biochemistry, nutrition, transport mechanisms, calculi dissolution and epidemiology.
- OBSTRUCTIVE UROPATHY
- ENURESIS
- IMPOTENCE

- SUNDRY CONDITIONS of the: bladder, ureters, urethra, prostate, seminal vesicles and penis, testis and epididymis i.e., erythroplasia of Queyrat, priapism, Peyronie's disease and congential disorders and malformations of the urinary tract.

Research supported by the CHRONIC RENAL DISEASE PROGRAM includes:

- MAINTENANCE THERAPIES FOR END STAGE KIDNEY DISEASE, including hemodialysis, hemofiltration, peritoneal dialysis, continuous ambulatory peritoneal dialysis and complications of such therapies; adjuvant therapies, the role of diet in therapy and development and evaluation of treatment methodologies.

- RENAL TRANSPLANTATION, including immunology specific to renal transplantation, immunosuppressive therapies, medical/surgical complications of transplants and organ preservation.

- PATHOPHYSIOLOGY OF CHRONIC RENAL FAILURE, including systemic abnormalities such as bone disease, anemia, neurological, metabolic, endocrine, cardiovascular, and gastrointestinal dysfunction and biochemistry of uremia.

For other specific recommendations for future directions, potential applicants are encouraged to refer to "Research Needs in Nephrology and Urology," Volumes 2, 3, 4, and 5, Report of the Coordinating Committee (DHEW Publication, NIH 78-1482), available from the program office.

This program is described in the Catalog of Federal Domestic Assistance number 13.849, Kidney Diseases, Urology and Hematology Research. Research grant awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended (42 USC 241) and administered under PHS grant policies and 42 CFR Part 52 and 45 CFR Part 74. National Research Service Awards will be made under the authority of Title IV, Section 472;(Public Law 78-410 as amended 42 USC 289l-1) and administered under PHS grant policies and 42 CFR Part 66. This program is not subject to A-95 Clearinghouse or Health Systems Agency review.

Assignment of Application

Applications will be received by the NIH's Division of Research Grants (DRG), referred to an appropriate study section for scientific review, and assigned to the appropriate institute for possible funding, in accordance with the normal DRG Referral Guidelines.

Review Procedures

Applications in response to this announcement will be reviewed on a nationwide basis in competition with each other, and in accord with the usual National Institutes of Health peer review procedures. They will first be reviewed for scientific and technical merit by a review group composed mostly of non-Federal scientific consultants (study section). Following study section review, the

application will be evaluated for program relevance by the appropriate Institute Advisory Council. The review criteria employed by the National Institutes of Health for regular research grant applications will prevail.

Deadline

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July 1 November 1 March 1

Method of Applying

Applications should be submitted on form 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase, **"PREPARED IN RESPONSE TO PROGRAM ANNOUNCEMENT IN KIDNEY DISEASE AND UROLOGY,"** should be typed across the top of the first page of the application.

The orginal and six copies of the application should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

For further information, investigators are encouraged to contact:

M.J. Scherbenske, Ph.D.
Renal Physiology/Pathophysiology
Program Director, Extramural Programs
National Institute of Arthritis,
Metabolism and Digestive Diseases
Westwood Building, Room 621
Bethesda, Maryland 20205
Telephone: (301) 496-7458

Gladys H. Hirschman, M.D.
Urology Program Director
National Institutes of Arthritis
Metabolism and Digestive Diseases
Westwood Building, Room 621
Bethesda, Maryland 20205
Telephone: (301) 496-7574

R. J. Wineman, Ph.D.
Chronic Renal Disease Program Director
National Institute of Arthritis,
Metabolism and Digestive Diseases
Bethesda, Maryland 20205
Telephone: (301) 496-7571

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ANNOUNCEMENT

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I. BACKGROUND

The Soft Tissue Stomatology and Nutrition Program Branch of the National Institute of Dental Research (NIDR) is encouraging submission of individual research grant applications for studies which will improve the treatment of oral facial herpesvirus infections.

The most common form of herpesvirus infection of the oral facial complex results in herpes labialis, otherwise known as cold sore or fever blisters. These are ususally recurrent lesions, seldom fatal but which cause considerable pain and discomfort to a large segment of our population. Occasionally the same herpes simplex virus (HSV-1) cause skeratitis, encephalitis, gingivostomatitis, or can be spread to the genitals. Recent developments in the use of antiviral compounds have been encouraging; however, studies designed to improve treatment methods are sought.

II. RESEARCH GOALS

The NIDR encourages the studies of all phases of treatment. These include but are not limited to studies on a) drug penetration, b) drug analog development and c) new drug development. These subject areas are not listed in the order of priorities and are not meant to exclude other approaches to treatment of the infection.

1. Drug penetration

   The antiviral substances developed and tested on herpes labialis are most commonly applied topically. Drug vehicle research and development are encouraged to aid penetration of the skin and increase the concentration of the antiviral substance in the tissues where the virus is replicating.

2. Drug analog development

   Studies on analogs of currently active drugs are encouraged to promote more effective treatment of herpes labialis lesions.

3. New drug development

   Investigations which may lead to the development of new, promising drugs or new approaches to the therapy of herpes labialis lesions are encouraged. The NIDR does not however, intend to support large scale drug development and screening programs.

III. MECHANISM OF SUPPORT

The mechanism of support for this program will be through traditional research project grants (P01, R01 and R23). The legislative authority is Section 301 of the Public Health Service Act. (PL. 78-410 as amended, 42 USC 241). The Catalog of Federal Domestic Assistance number is 13.878, Soft Tissue Stomatology and Nutrition Research. Policies that govern research grant programs of the National Institutes of Health will prevail. The award of grants pursuant to this request for grant applications is contingent upon receipt of proposals with high scientific merit and the availability of appropriate funds.

IV. REVIEW PROCEDURES AND CRITERIA

Applications will be received by the Division of Research Grants (DRG), National Institutes of Health. DRG will refer the proposals to the appropriate study section for scientific review and will make the institute assignment for review by an Advisory Council. It is possible that studies proposed in response to this announcement could overlap with the interests of more than one institute at NIH. In such cases the DRG will make the final assignment decision.

Applications in response to this announcement will be reviewed in accordance with the usual National Institutes of Health peer review procedures. Factors considered in the scientific merit evaluation of each application will include an assessment of the importance of the proposed research problem, the novelty and originality of the approach, the training experience and research competence of the investigator(s), the adequacy of the experimental design, the suitability of the facilities, and the appropriateness of the requested budget relative to work proposed. Following study section review, the application will be evaluated for program relevance by the appropriate Institute Advisory Council. Funding decisions will be based upon relative scientifc merit and the Institute's ability to fund.

Applications will be accepted in accordance with the usual dates for new applications on an indefinite basis. The deadlines for receipt of new applications for the next three review cycles are:

July 1, 1981
November 1, 1981
March 1, 1981

V. METHOD OF APPLYING

Applications should be submitted on form PHS 398, which is available in the business or grants office at most academic or research institutions. If not, an application form may be obtained from:

Office of Grants Inquiries
Division of Research Grants
National Institutes of Health
Westwood Building, Room 448
Bethesda, Maryland 20205

The phase **"PREPARED IN RESPONSE TO NIDR HERPES ANNOUNCEMENT"** should be typed across the top of the first page of the application. The original and six copies of the application should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

Further information may be obtained by contacting:

Dr. Paul D. Frazier, Chief or
Dr. David A. Wolff
Health Scientist Administrator
Soft Tissue Stomatology and
Nutrition Program Branch
National Institute of Dental Research
National Institutes of Health
Westwood Building, Room 510
Bethesda, Maryland 20205
Telephone: (301) 496-7808

ANNOUNCEMENT

WOUND HEALING IN CRANIOFACIAL INJURIES

NATIONAL INSTITUTE OF DENTAL RESEARCH

The National Institute of Dental Research (NIDR) invites applications in basic and clinical research which is relevant to acquired craniofacial defects. Emphasis is placed on securing proposals dealing with responses of oral and craniofacial tissues to trauma. Such studies could include immediate and long-term responses of soft and hard tissue to injury; signals directing cellular migrations; factors carrying out the removal of damaged cells and tissues; the mechanisms of repair and regeneration; and the factors terminating the repair process. Studies on the repair of bones and teeth are of particular interest as are studies on conditions such as diabetes and aging which interfere with repair. Methods to accelerate or improve repair are of interest. It is expected that such studies could encompass a variety of disciplines in the health sciences including anatomy, pathology, chemistry, immunology and cell biology.

The deadlines for the receipt of research grant applications by the Division of Research Grants are March 1, July 1, and November 1. Review and award of such applications will be through the usual NIH procedures governing research project grants.

Inquiries regarding this program may be addressed to:

Dr. Jerry D. Niswander
Craniofacial Anomalies Program Branch-EP
National Institutes of Health
Westwood Building, Room 520
Bethesda, Maryland 20205
Telephone: (301) 496-7807

This program is described in the Catalog of Federal Domestic Assistance number, 13.842, Craniofacial Anomalities. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74. This program is not subject to A-95 Clearinghouse or Health Systems Agency Review.

ANNOUNCEMENT

BASIC AND CLINICAL STUDIES OF NORMAL DEVELOPMENT AND DEVELOPMENTAL DEFECTS

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

I. PROGRAM SPECIFICATIONS

A. Program Objectives

Seven percent of all babies are born in the United States each year with mental or physical defects. One fifth of all infants who die by the age of four do so because of congenital defects. In addition, a major proportion of spontaneously miscarried pregnancies are associated with developmental defects.

Congenital defects are defined as structural,functional, and biochemical anomalies that are initiated in the human organism prior to birth or shortly thereafter and cause immediate or delayed abnormality. Causes of developmental defects may either be genetic, i.e., gene mutations or chromosomal aberrations, or may include diverse agents in the internal or external environment of the developing embryo, fetus, or child. Most often developmental defects appear to result from abnormal interactions of genetic and environmental factors. The etiology of 65 to 75 percent of all congenital defects is, however, still unknown.

The Institute therefore encourages research into the causes of birth defects. Studies of etiologic factors, normal and abnormal basic developmental mechanisms, and clinical entities are emphasized. A combined clinical and developmental biologic approach should lead to a better understanding of the processes of development of birth defects.

B. Research Scope

This announcement emphasizes research on normal and abnormal human development during the periods prior to conception through early maturity. Investigations may be at the basic and/or clinical level, utilizing knowledge and techniques employed in disciplines such as

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This program is described in the Catalog of Federal Domestic Assistance number 13.865, Research for Mothers and Children. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74. This program is not subject to A-95 Clearinghouse or Health Systems Agency Review.

developmental genetics, developmental biology, teratology, and developmental immunology. They may include human and other mammalian models but may also use those nonmammalian models relevant to the understanding of normal human development and the production of birth defects.

Some areas of research interest are listed below. They are not presented in order of priority, but serve as examples only. Other research areas related to normal and abnormal human development, derived by the applicant, would be equally welcome.

Developmental Genetics

Essential to a better understanding of human development is an increased knowledge of the role of genetic factors in normal human maturation and susceptibility to disease. NICHD thus encourages studies in human and clinical genetics, including family investigations of mutant genes affecting metabolic and morphologic development, twin studies to distinguish genetic from environmental determinants of development, and population genetic studies to establish distributions and frequencies of abnormal genes. Of interest also are screening, diagnostic, and treatment studies of human genetic diseases which would investigate autosomal and sex chromosomal abnormalities underlying developmental problems as well as DNA sequence polymorphisms as markers of hereditary disease. Studies of basic genetic regulatory mechanisms are encouraged insofar as they provide understanding of human developmental processes. They may include identification of genes specifying normal and abnormal developmental processes; determination of gene structure, function, and mechanisms of gene action; determination of genetic regulatory elements; study of developmental expression of "structural" genes in specific tissues at certain developmental states; and assignment of genetic loci on chromosomes to specific normal and abnormal gene products.

Developmental Biology

Our understanding of human development would be further advanced by studies on the integration of epigenetic factors into the maturation of a complete organism or human being. Such investigations would include the contribution of maternal cytoplasmic substances to the early development of the fertilized egg, as well as the role of physiological and chemical gradients in oocyte asymmetry and subsequent organization of the developing embryo. Studies relevant to human development are also encouraged of intra- and extracellular as well as cell surface components in morphogenetic tissue interactions, and of the biogenesis of subcellular particle (e.g. mitochondria) and the biosynthesis of biologically important macromolecules (e.g. proteoglycans, collagen, fibronectin) and organ-specific products (e.g. myelin, actin, myosin) during biochemical and morphological maturation, as well as investigations of trophic and endocrine influences on organogenesis. Of special interest are studies of the development of the limb.

Teratology

An increased understanding of deviant human development leading to congenital defects requires investigations of the causes and mechanisms producing disruptions in the normal human developmental program prior to conception through early childhood. NICHD therefore encourages studies of inborn structural, functional, and biochemical defects that are initiated in the human being prior to birth or shortly thereafter and cause immediate or delayed abnormality. Of interest are anomalies which have a hereditary basis and those which are caused by a nonhereditary insult such as infections, maternal metabolic imbalances, immunologic reactions, drugs, environmental chemicals, nutrition, ionizing radiation, ultrasound, or thermal variations, as well as abnormalities which are of multifactorial origin. Investigations are encouraged at the basic gene and chromosome level, as well as at the cell, tissue, and organ levels, to determine specific divergent developmental disorders. Of further interest are clinical studies for the identification of new defects and the derivation of new treatment modalities, epidemiological studies to separate genetic from environmental causes of birth defects, family and population genetic studies to define the mode of inheritance of congenital disorders and establish frequencies of abnormal genes, and studies which would derive animal models for abnormal developmental mechanisms in man. Emphasis is given to studies of limb malformations involving both hereditary and environmental causes.

Developmental Immunology

This category includes investigations on the ontogeny of the immune system during human embryonic, fetal, and infant development, and on the phylogeny of immunity to gain insight into the normal evolution of the reticuloendothelial system. Encouraged are studies of immune system development during periods of malnutrition, immunological properties of breast milk, the mechanisms that may pertain to the mother's experiences with infection, the transfer of protection to the infant through breastfeeding, the events following ingestion of milk in the infant's digestive tract, and possible hazardous effects of breast feeding. Also of interest are studies of the immunologic vulnerability of prematures and newborns resulting in increased morbidity and mortality due to infections and diseases with emphasis on factors influencing or altering the immune response due to age dependent events. Reproductive immunological investigations of the fetus as an allograft during pregnancy are encouraged, as are studies of the placenta as an immunological barrier and in regulation of the maternal immune response.

II. METHOD AND CRITERIA OF REVIEW

A. Assignment of Applications

Applications will be received by the Division of Research Grants, NIH; referred to an appropriate study section for review; and assigned to an institute for possible funding. Assignments to institute will be made by the DRG according to the NIH Handbook of Referral.

B. Review Procedures

Applications received in response to this program announcement will be reviewed on a nationwide competitive basis in accord with the usual NIH peer review procedures. Proposals will first be evaluated for scientific and technical merit by an initial review group of mostly non-Federal scientific consultants. Following study section review, applications will further be reviewed for program relevance by the Institute's National Advisory Council. The customary NIH review criteria for regular research grant applications will prevail.

III. METHOD OF APPLYING

A. Format for Applications

Applications are to be submitted on form PHS 398 which is available in the business or grants and contracts office at most academic and research institutions or from the Division of Research Grants, NIH. The phrase **"PREPARED IN RESPONSE TO THE BASIC AND CLINICAL STUDIES OF NORMAL DEVELOPMENT AND DEVELOPMENTAL DEFECTS ANNOUNCEMENT"** should be typed across the margin at the top of the first page of applications. Original applications and six copies should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

B. Deadline

Applications will be accepted by the usual receipt dates for new proposals: July 1, November 1, and March 1.

IV. INQUIRIES

Inquiries may be directed to:

Head, Genetics and Teratology Section
Clinical Nutrition and Early Development Branch
Center for Research for Mothers and Children
National Institute of Child Health
and Human Development
National Institutes of Health
Landow Building, Room 7C09
Bethesda, Maryland 20205
Telephone: (301) 496-5575

ANNOUNCEMENT

RESEARCH INTERESTS OF THE KIDNEY DISEASE AND UROLOGY PROGRAM

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM AND DIGESTIVE DISEASES

The Program has a special interest in stimulating investigator-initiated research grant applications (R01s) and training by National Research Service Awards, in both fundamental and clinical investigations of the mechanism and disease processes of the kidney and urinary tract.

Research supported by the RENAL PHYSIOLOGY/PATHOPHYSIOLOGY PROGRAM includes:

- SPECIFIC IMMUNE MECHANISMS OF KIDNEY DISEASE, including glomerulonephritis, interstitial nephritis, lupus nephritis, etc.
- EFFECTS OF DRUGS, NEPHROTOXINS, AND ENVIRONMENTAL TOXINS ON THE KIDNEY, including analgesic "associated" nephropathy.
- DISEASES AND MECHANISMS LEADING TO CHRONIC RENAL DISEASE, including diabetic nephropathy, polycystic renal disease, etc.
- STRUCTURE AND FUNCTION OF THE KIDNEY, including metabolism, transport and fluid-electrolyte dynamics.

Research supported by the UROLOGY including UROLITHIASIS PROGRAM includes:

- LOWER URINARY TRACT PHYSIOLOGY AND PATHOPHYSIOLOGY, including neuromuscular mechanisms i.e, bladder dysfunction, dyssynergia, incontinence; vesicoureteral and renal reflux.
- URINARY TRACT INFECTION, including bacterial adhesion, local immune response mechanisms, pyelonephritis and interstitial cystitis.
- BENIGN PROSTATIC HYPERPLASIA-PROSTATITIS, including normal and abnormal growth, biochemistry, steroid receptors, therapeutic modalities and animal models.
- UROLITHIASIS and related disorders of divalent ion metabolism (calcium, magnesium and phosphorus) including diagnosis and treatment, physical chemistry, endocrinology, biochemistry, nutrition, transport mechanisms, calculi dissolution and epidemiology.
- OBSTRUCTIVE UROPATHY
- ENURESIS
- IMPOTENCE

- SUNDRY CONDITIONS of the: bladder, ureters, urethra, prostate, seminal vesicles and penis, testis and epididymis i.e., erythroplasia of Queyrat, priapism, Peyronie's disease and congential disorders and malformations of the urinary tract.

Research supported by the CHRONIC RENAL DISEASE PROGRAM includes:

- MAINTENANCE THERAPIES FOR END STAGE KIDNEY DISEASE, including hemodialysis, hemofiltration, peritoneal dialysis, continuous ambulatory peritoneal dialysis and complications of such therapies; adjuvant therapies, the role of diet in therapy and development and evaluation of treatment methodologies.

- RENAL TRANSPLANTATION, including immunology specific to renal transplantation, immunosuppressive therapies, medical/surgical complications of transplants and organ preservation.

- PATHOPHYSIOLOGY OF CHRONIC RENAL FAILURE, including systemic abnormalities such as bone disease, anemia, neurological, metabolic, endocrine, cardiovascular, and gastrointestinal dysfunction and biochemistry of uremia.

For other specific recommendations for future directions, potential applicants are encouraged to refer to "Research Needs in Nephrology and Urology," Volumes 2, 3, 4, and 5, Report of the Coordinating Committee (DHEW Publication, NIH 78-1482), available from the program office.

This program is described in the Catalog of Federal Domestic Assistance number 13.849, Kidney Diseases, Urology and Hematology Research. Research grant awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended (42 USC 241) and administered under PHS grant policies and 42 CFR Part 52 and 45 CFR Part 74. National Research Service Awards will be made under the authority of Title IV, Section 472;(Public Law 78-410 as amended 42 USC 289l-1) and administered under PHS grant policies and 42 CFR Part 66. This program is not subject to A-95 Clearinghouse or Health Systems Agency review.

Assignment of Application

Applications will be received by the NIH's Division of Research Grants (DRG), referred to an appropriate study section for scientific review, and assigned to the appropriate institute for possible funding, in accordance with the normal DRG Referral Guidelines.

Review Procedures

Applications in response to this announcement will be reviewed on a nationwide basis in competition with each other, and in accord with the usual National Institutes of Health peer review procedures. They will first be reviewed for scientific and technical merit by a review group composed mostly of non-Federal scientific consultants (study section). Following study section review, the

application will be evaluated for program relevance by the appropriate Institute Advisory Council. The review criteria employed by the National Institutes of Health for regular research grant applications will prevail.

Deadline

Applications will be accepted in accordance with the usual receipt dates for applications:

July 1 November 1 March 1

Method of Applying

Applications should be submitted on form 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase, **"PREPARED IN RESPONSE TO PROGRAM ANNOUNCEMENT IN KIDNEY DISEASE AND UROLOGY,"** should be typed across the top of the first page of the application.

The orginal and six copies of the application should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Westwood Building, Room 240
Bethesda, Maryland 20205

For further information, investigators are encouraged to contact:

M.J. Scherbenske, Ph.D.
Renal Physiology/Pathophysiology
Program Director, Extramural Programs
National Institute of Arthritis,
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