

# NIH GUIDE

# for GRANTS and CONTRACTS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Vol. 7, No. 16, November 1, 1978

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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.

Supplements, printed on yellow paper, are published by the respective awarding units concerning new projects, solicitations of sources, and requests for proposals.

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REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA  
TITLE: IDENTIFICATION AND EVALUATION OF  
COUNSELING TECHNIQUES FOR CANCER PATIENTS

Application receipt dates: January 15,  
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REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA  
TITLE: "PATTERNS OF CARE" IN ONCOLOGY

Application receipt dates: January 15,  
March 1, and July 1.

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REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA  
TITLE: THE ROLE OF NUTRITION IN THE REHABILITATION  
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Application receipt dates: January 15,  
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REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA  
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Application receipt dates: January 15,  
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NATIONAL HEART, LUNG, AND BLOOD INSTITUTE  
REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA  
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Application receipt date: January 15.

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ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN KIDNEY

DISEASE AND UROLOGY PROGRAM,

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND

DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Kidney Disease and Urology Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases has a special interest in stimulating investigator-initiated research grant applications (ROIs) in both fundamental and clinical investigation into the mechanisms and diseases responsible for end-stage renal disease, its complications and all aspects of treatment, including dialysis and transplantation; specific immune mechanisms of kidney disease (such as glomerulonephritis, interstitial nephritis, pyelonephritis, etc.), polycystic renal disease, benign prostatic hyperplasia, obstructive disorders of the urinary tract, urolithiasis, neurogenic bladder, analgesic "associated" nephropathy, and other drug and environmental toxins that cause adverse effects on the kidney as well as ongoing interest in studies of solute and water excretion as regulated by metabolic transport and fluid electrolyte mechanisms.

For specific recommendations of future research directions, potential applicants are encouraged to refer to Research Needs in Nephrology and Urology, Volume 1, Report of the Coordinating Committee (DHEW Publication (NIH) 78-1481). Note should be taken of the Summaries of Reports of Speciality Committees: Glomerulonephritis and Other Immunologic Diseases; Renal Failure and Sundry Conditions Affecting the Kidney; Circulatory and Hematologic Disorders; Urinary Tract Infections, Obstructive and Neuromuscular Disorders, and Urolithiasis; Pediatric Nephrology and Urology; and, Normal Structure and Function.

Method and Criteria of Review

Assignment of Application - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding, unless programmatic considerations indicate more appropriate assignment to an alternative awarding unit. These decisions will be governed by normal programmatic considerations as specified in the 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 on non-Federal scientific consultants (study section). Following study section review, the application will be evaluated for program relevance by the NAMDD Advisory Council. The review criteria customarily 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 new applications:

\*December 1                      March 1                      or                      July 1

Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO (NAME OF PROGRAM 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  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact:

M. J. Scherbenske, Ph.D.  
Kidney Disease and Urology Program  
Director, Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Room 621, Westwood Building  
Bethesda, Maryland 20014

Telephone: (301) 496-7458

In order to alert the Immunologic Diseases Program to the submission of proposals with primary thrust directed to immunopathology, immune mechanisms or hypersensitivity, copies of the face page and summary page of such applications should be forwarded under separate cover to:

Robert A. Goldstein, M.D.  
Chief, Allergy & Clinical Immunology Branch  
National Institute of Allergy & Infectious Diseases  
Room 750, Westwood Building  
Bethesda, Maryland 20014

\*The usual receipt date is November and this exception is only for December 1978.

HEMATOLOGY PROGRAM,  
NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM,  
AND DIGESTIVE DISEASES

**ANNOUNCEMENT**

INTRODUCTION AND PROGRAM SPECIFICATIONS

The Hematology Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases invites applications for support of basic and applied research, and clinical studies in areas within its mission. Special interest is announced for investigator-initiated research grant applications in the following areas: Anemia of chronic renal failure and other chronic diseases, including etiology, pathogenesis and therapeutic modalities encompassing drugs and environmental toxins, and bone marrow transplantation, and factors such as erythropoietin involved in activation and regulation of stem cell differentiation; iron metabolism, acquisition, transport and storage as it relates to blood cell formation, iron overload and deficiency, whether nutritional, metabolic or therapeutic in origin, and iron chelator design, metabolism, and effect on iron pools.

Other areas of major and continuing program interest include heme biosynthesis, porphyrins, and the porphyrias; hemoglobin structure, biosynthesis and genetics; and white blood cell metabolism and functional activity.

METHOD AND CRITERIA OF REVIEW

Assignment of Application - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding, unless programmatic considerations indicate more appropriate assignment to an alternative awarding unit. These decisions will be governed by normal programmatic considerations as specified in the 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 NAMDD Council. The review criteria customarily 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 new applications:

\*December 1  
March 1  
July 1

Method of Applying - Applications should be submitted on form PHS 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 OF RESEARCH GRANTS IN THE FIELD OF HEMATOLOGY, NIAMDD" 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  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact:

David G. Badman, Ph.D.  
Hematology Program Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Room 621, Westwood Building  
5333 Westbard Avenue  
Bethesda, Maryland 20014

Telephone: (301) 496-7458

\*The usual receipt date is November and this exception is only for December 1978.

DIABETES RESEARCH AND TRAINING CENTERS GRANT AWARD,

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND

**ANNOUNCEMENT**

DIGESTIVE DISEASES

The National Institute of Arthritis, Metabolism, and Digestive Diseases plans to make awards of Diabetes Research and Training Center grants based upon anticipated appropriation and funding in Fiscal Year 1979. These Centers are established under authority Part D of Title IV of the Public Health Service Act as amended by the National Diabetes Mellitus Research and Education Act of 1974 (PL 93-354) (43 USC 289c-2).

A Diabetes Research and Training Center is defined as a resource formed within a single university center, or through a consortium of cooperating institutions including a university-affiliated center, dedicated to conducting research and programs for training in diabetes mellitus and related endocrine and metabolic disorders. Specifically, each Diabetes Research and Training Center is charged by the National Diabetes Mellitus Research and Education Act with conducting "A) research in the diagnosis and treatment of such disease, disorders, and complications, and C) information programs for physicians and allied health personnel who provide primary care for patients with such disease, disorders, or complications." It is the inclusion of training and education efforts with the research program efforts that distinguishes the Diabetes Research and Training Centers from the "Diabetes-Endocrinology Research Centers" which are specifically oriented toward research goals. The "Diabetes-Endocrinology Research Centers" program will continue to be supported with receipt dates for applications on the regular schedule for grant applications.

The implementation of this program is integral to the Institute's plans for fiscal year 1979. However, the number of Diabetes Research and Training Center grants to be awarded will be contingent upon the appropriation and be selected on the basis of national competition, including consideration by a peer review panel and by the National Arthritis, Metabolism, and Digestive Diseases Advisory Council. The Diabetes Research and Training Centers will be funded by the grant mechanism, but under conditions that will require close coordination with the National Institute of Arthritis, Metabolism, and Digestive Diseases.

Receipt dates for Diabetes Research and Training Center grant applications and letters of intent are:

Letter of Intent

November 1  
March 1  
July 1

Application

February 1  
June 1  
October 1

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Potential applicants should submit a letter of intent prior to making application for the Diabetes Research and Training Center program. The original and one copy of the letter of intent should be sent to:

Associate Director for Extramural  
Program Activities  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Room 657, Westwood Building  
Bethesda, Maryland 20014

Completed applications, an original and six copies, should be mailed to the Division of Research Grants. Address labels are included in the PHS 398 application kit.

The Associate Director for Extramural Program Activities should be sent under separate cover two copies of Section I and parts of Section II (budget and biographical sketch of Principal Investigator) of form PHS 398, when the completed application is submitted.

All criteria for review and evaluation are given in the September 1977 Guidelines. These applications will be reviewed by a special review committee convened by the review unit of NIAMDD specifically for this purpose. Standard application kits (PHS 398) should be used. A Table of Contents immediately following the face page, referencing page numbers of key sections with the application, should be included.

Copies of the Diabetes Research and Training Center Grant Guidelines and further program information may be obtained from:

Diabetes Special Programs Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Room 622, Westwood Building  
Bethesda, Maryland 20014

Telephone: (301) 496-7418



CORE CENTER GRANT AWARD,

DIABETES PROGRAM,

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND  
DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Diabetes Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases plans to make awards of Core Center grants based upon anticipated appropriation and funding for Fiscal Year 1979. These awards provide a mechanism for integrating, coordinating, and fostering the interdisciplinary cooperation of a group of established investigators conducting programs of active, high quality research which relate to a common theme. This granting mechanism is to build upon the existing talents and resources of those established, reviewed, and supported investigators who have agreed to integrate and coordinate their efforts. The Core Center program is intended to provide the means, capabilities, and direction for a program whose net accomplishments will be greater than the productivity of the individual projects alone.

The Core Center grant provides support for core resources and facilities to be utilized by the individually-supported project grantees. Personnel, equipment, supplies, services, and facilities may be supported for integration of an institute's program, activities with other centers and for program enrichment, feasibility and pilot studies. This grant does not provide direct funding for ongoing research projects; these are funded through other sources and support mechanisms (i.e., individual research grants). At least the majority of the support for the ongoing research projects should be from the National Institute of Arthritis, Metabolism and Digestive Diseases and the remainder should be highly relevant to the overall goal of the Core Center grant.

Specific guidelines (revised May 1977) for preparation of applications are available and should be consulted prior to extensive consideration of seeking support. These should be reviewed carefully for applicability of the Core Center concept to the institutional and project relationships currently in existence.

Receipt dates for Diabetes Research and Training Center grant applications and letters of intent are:

Letter of Intent

November 1  
March 1  
July 1

Application

February 1  
June 1  
October 1

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Potential applicants should submit a letter of intent prior to making application for the Diabetes Research and Training Center program. The original and one copy of the letter of intent should be sent to:

Associate Director for Extramural  
Program Activities  
National Institute of Arthritis,  
Metabolism and Digestive Diseases  
Room 657, Westwood Building  
Bethesda, Maryland 20014

Completed applications, an original and six copies, should be mailed to the Division of Research Grants. Address labels are included in the PHS 398 application kit.

The Associate Director for Extramural Program Activities should be sent under separate cover two copies of Section I and parts of Section II (budget and biographical sketch of Principal Investigator) of form PHS 398, when the completed application is submitted.

All criteria for review and evaluation are given in the May 1977 Guidelines. These applications will be reviewed by a special review committee convened by the review unit of NIAMDD specifically for this purpose. Standard application kits (PHS 398) should be used. A Table of Contents immediately following the face page, referencing page numbers of key sections with the application, should be included.

Copies of the Core Center Grant Guidelines and further program information may be obtained from:

Diabetes Special Programs Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Room 622, Westwood Building  
Bethesda, Maryland 20014;

Telephone: (301) 496-7418

ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN THE DIGESTIVE TRACT,

DIGESTIVE DISEASES PROGRAM,

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND

**ANNOUNCEMENT**

DIGESTIVE DISEASES

The Digestive Diseases Program of the National Institute of Arthritis, Metabolism and Digestive Diseases has a special interest in stimulating investigator-initiated research grant applications, (R01's) in both fundamental and clinical investigations. It has divided its requests into two parts; that related to the digestive tract, and that related to the liver, biliary tract, and exocrine pancreas. This announcement is concerned with the digestive tract only and includes diseases and disorders of the esophagus, stomach, and intestines, such as esophagitis, peptic ulcer, secretory diarrhea, ileitis, ulcerative colitis, and malabsorption.

There is a continuous interest in the study of the fundamental aspects of the physiological and biochemical processes associated with digestive diseases in addition to investigations concerned with the epidemiology, etiology, diagnosis, prevention, and therapy of specific diseases. Nevertheless, enhancement of research activity in certain selected technical areas may provide significantly new information and progress towards understanding the nature and cause of one or more of the diseases of the digestive tract, or provide the impetus for further research activity.

For this announcement, basic and clinical scientists are encouraged to submit research grant applications in the following areas:

1. Role of infectious and non-infectious agents in the pathogenesis of inflammatory bowel disease and its complications.
2. Role of genetic factors in the pathogenesis of diseases or disorders of the digestive tract.
3. Determination and/or delineation of those factors that are responsible for resistance to injury of the mucosa of the digestive tract, e.g. esophagus, stomach, and intestines.
4. Determination and/or delineation of factors responsible for cell repair and regeneration after injury to the digestive tract, e.g. esophagus, stomach, intestines.
5. Studies on the etiology and pathogenesis of functional gastrointestinal disorders, e.g. x-ray negative dyspepsia, functional indigestion, irritable bowel syndrome, irritable colon, and spastic colon.
  - a. Neurological, behavioral, and psychological factors related to functional disorders of the digestive tract.
  - b. Relationship of gastrointestinal hormones and other peptides to functional gastrointestinal disease.

- A. Assignment of Application - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.
- B. Review Procedures - Applications in response to this solicitation 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.
- C. Deadline - Applications will be accepted in accordance with the usual receipt dates for new applications:
- March 1  
July 1  
November 1
- D. Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO DIGESTIVE DISEASES PROGRAM 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  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact program director for research area: Dr. George Kitzes, Digestive Diseases Program, National Institute of Arthritis, Metabolism, and Digestive Diseases, Bethesda, Maryland 20014. Telephone: (301) 496-7822.

ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN LIVER,  
BILIARY TRACT, AND EXOCRINE PANCREAS,  
DIGESTIVE DISEASES PROGRAM,  
NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND  
DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Digestive Diseases Program of the National Institute of Arthritis, Metabolism and Digestive Diseases has a special interest in stimulating investigator-initiated research grant applications (ROIs) in both fundamental and clinical investigations. It has divided its requests into two parts: that related to the digestive tract and that related to the liver, biliary tract, and exocrine pancreas. This announcement deals with the latter areas.

There is a continuous interest in the study of the causes, prevention, diagnosis and treatment of specific diseases of the liver and biliary tract including chronic hepatitis, fibrosis, cirrhosis, cholestasis, vascular lesions of the liver, metabolic disorders of the liver, diseases of the gallbladder and extrahepatic bile ducts, biliary atresia, bilirubinemia and gallstones. Basic studies on hepatic regeneration, organ transplantation and biliary secretion are also relevant. Research into diseases of the exocrine pancreas including pancreatic insufficiency, acute and chronic pancreatitis and Zollinger-Ellison syndrome are relevant as are basic studies on pancreatic function.

Many of the problems in these areas are appropriate for the efforts of the basic scientist or the combined efforts of the basic and clinical scientist. Relevant projects from such individuals are encouraged. A few illustrative examples of research areas of opportunity and need are listed below:

- Pancreatic physiology, pathophysiology and pathogenesis of acute and chronic pancreatic disease
- Bilirubin in bile and the formation of pigment gallstones
- Factors controlling the levels of cholesterol in bile including dietary, intestinal and hepatic mechanisms
- Liver cell injury and death; liver cell repair and regeneration
- Mechanism responsible for persistence of liver disease.

- A. Assignment of Application -- Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.
- B. Review Procedures -- Applications in response to this solicitation 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.
- C. Deadline - Applications will be accepted in accordance with the usual receipt dates for new applications:
- March 1  
July 1  
November 1
- D. Method of Applying -- Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO DIGESTIVE DISEASES PROGRAM 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  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact

Sarah C. Kalser, Ph.D.  
Liver Diseases Program Director  
Extramural Programs  
National Institute of Arthritis, Metabolism  
and Digestive Diseases  
National Institutes of Health  
Bethesda, Maryland 20014  
Phone: (301) 496-7821

METABOLIC DISEASES PROGRAM ANNOUNCEMENT,  
METABOLIC DISEASES PROGRAM,  
NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND  
DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Metabolic Diseases Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases supports research to develop basic knowledge required for the understanding of many diseases including cystic fibrosis, disorders of carbohydrate and lipid metabolism, and various inborn errors of metabolism. Particular programmatic emphasis is directed toward:

- (1) studies related to the understanding of the metabolic basis of cystic fibrosis as well as activities related to the nutritional and metabolic manifestations of the disease;
- (2) studies on the function, chemical structure, and mechanism of regulation of synthesis of glycoproteins;
- (3) studies directed toward increasing the understanding of the mechanisms by which calcium and other cations influence and control key regulatory processes including enzyme actions, secretory processes, and cellular hormonal effects;
- (4) studies to define the role of cyclic nucleotides and protein kinases in regulating various aspects of cellular physiology and fundamental processes of growth, proliferation, and regulation; and
- (5) investigations on the structure and function of enzymes included in the regulation of carbohydrate metabolism.

Method and Criteria of Review

- A. Assignment of Application - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.
- B. 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.

- C. Deadline - Applications will be accepted in accordance with the usual receipt dates for new applications:

March 1  
July 1  
November 1

- D. Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO METABOLIC DISEASES PROGRAM 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  
Room 240, Westwood Building  
Bethesda, Maryland 20014.

For further information, investigators are encouraged to contact:

Robert J. Beall, Ph.D.  
Metabolic Diseases Program Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Westwood Building, Room 622  
Bethesda, Maryland 20014

Telephone: (301) 496-7645



ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN SKIN DISEASES,

SKIN DISEASES PROGRAM,

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND

**ANNOUNCEMENT**

DIGESTIVE DISEASES

The Skin Diseases Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases is encouraging the submission of applications for research grants in several areas of emphasis in dermatology:

1. Metabolic studies of epidermis, dermis, and subcutaneous fat including effects of hormones and interaction with enzymes, substrates, minerals, and trace elements
2. Comparative structure and function of skin in man and other primates
3. Immunologically-mediated cutaneous disorders, including atopic dermatitis, eczema, contact dermatitis, and vasculitis
4. Photobiology, photoallergy, and phototoxic reactions
5. Vitiligo
6. Kinetics of keratinizing tissues
7. Psoriasis
8. Bullous diseases of skin including pemphigus, pemphigoid, and dermatitis herpetiformis
9. Acne

The Arthritis Program also encourages the submission of applications for research training through National Research Service Awards, both individual fellowships and institutional awards; Clinical Investigator Awards; and Research Career Development Awards.

Method and Criteria Of Review

Assignment of Applications - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.

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

March 1  
July 1  
November 1

Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO RESEARCH GRANTS IN THE FIELD OF SKIN DISEASES" 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:

Applications Receipt Office  
Division of Research Grants  
National Institutes of Health  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact the program director:

Laurence Miller, M.D.  
Dermatology Program Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Westwood Building, Room 407  
5333 Westbard Avenue  
Bethesda, Maryland 20016

Telephone: (301)496-7326

ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN ENDOCRINOLOGY,  
ENDOCRINOLOGY PROGRAM,  
NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND  
DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Endocrinology program supports both basic and clinical research into the mechanisms and causes of endocrine function and dysfunction. A major effort is in the area of hormone production and mechanism of hormone action at cellular and subcellular levels, involving receptors, second messengers, and genetic control. In addition, studies of the endocrine hypothalamus and other neuroendocrine mechanisms are supported, as well as studies of pituitary, pineal, thyroid, thymus, parathyroid and adrenal hormones. Prostaglandin, encephalin, and neurotensin studies are supported as well.

Method and Criteria of Review

A. Assignment of Application - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.

B. 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.

C. Deadline - Applications will be accepted in accordance with the usual receipt dates for new applications:

March 1  
July 1  
November 1

D. Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO ENDOCRINOLOGY PROGRAM ANNOUNCEMENT" should be typed across the top of the first page of the application.

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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  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact:

Dr. Robert A. Tolman  
Endocrinology Program Director  
Extramural Programs  
NIAMDD  
Bethesda, Maryland 20014

ANNOUNCEMENT OF PROGRAM RESEARCH INTERESTS IN ARTHRITIS,  
ARTHRITIS PROGRAM,  
NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND  
DIGESTIVE DISEASES

**ANNOUNCEMENT**

The Arthritis Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases is encouraging the submission of applications for research grants in several areas of emphasis in the rheumatic diseases:

1. Immunological factors in rheumatic diseases
2. Inflammation in rheumatic diseases
3. Infectious agents in rheumatic diseases
4. Genetic factors in rheumatic diseases
5. Structure and function of cartilage and connective tissue
6. Arthritis in children
7. Systemic lupus erythematosus
8. Rheumatoid arthritis
9. Osteoarthritis
10. Spondylitis and related syndromes
11. Other diffuse connective tissue diseases
12. Gout and pseudogout
13. Epidemiology of rheumatic diseases

The Arthritis Program also encourages the submission of applications for research training through National Research Service Awards, both individual fellowships and institutional awards; Clinical Investigator Awards; and Research Career Development Awards.

Method and Criteria Of Review

Assignment of Applications - Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to the NIAMDD for possible funding. These decisions will be governed by normal programmatic considerations as specified in the 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 NAMDD Advisory Council. The review criteria customarily employed by the National Institutes of Health for regular research grant applications will prevail.

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

March 1  
July 1  
November 1

Method of Applying - Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO RESEARCH GRANTS IN THE FIELD OF ARTHRITIS" 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:

Applications Receipt Office  
Division of Research Grants  
National Institutes of Health  
Room 240, Westwood Building  
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact the program director:

Lawrence Petrucelli, Ph.D.  
Arthritis Program Director  
Extramural Programs  
National Institute of Arthritis,  
Metabolism, and Digestive Diseases  
Westwood Building, Room 405  
5333 Westbard Avenue  
Bethesda, Maryland 20016

Telephone: (301)496-7326

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

**ANNOUNCEMENT**

TITLE: *STUDIES ON THE CONTROL AND DIFFERENTIATION  
OF MUCUS-PRODUCING CELLS*

RFA-NHLBI-DLD-79-G-A

The Division of Lung Diseases of the National Heart, Lung, and Blood Institute invites grant applications for research to study mucus-producing cells of the lung. The scope of this program includes studies directed towards the control and differentiation of the pulmonary mucus-producing cells.

This type of solicitation (the RFA) is utilized when the Division wishes to stimulate investigator interest in a particular research area that is important to the National Program. Unlike the RFP (Request for Contract Proposals), the RFA identifies the scope of the Division's interest but does not require that the proposal conform to specified research requirements. Moreover, the RFA is supported through the customary NIH grant-in-aid and is governed by the policies for regular research grants. However, the RFA solicitation represents a single competition, with a specified deadline for receipt of applications. All applications in response to the RFA will be reviewed by the same initial review group.

The present announcement is for a single competition with a specified deadline of January 15, 1979 for receipt of applications. Applications should be prepared and submitted in accordance with the aims and requirements described in the following sections.

- I. Background Information
- II. Research Scope
- III. Mechanism of Support
- IV. Review Procedures and Criteria
- V. Method of Applying
- VI. Inquiries

We hope this RFA and participation in this program will be of interest to you.

I. BACKGROUND INFORMATION

- A. The Division of Lung Diseases - The Division of Lung Diseases, National Heart, Lung, and Blood Institute, sponsors fundamental and clinical research grants and contracts for the study of normal and abnormal function of the lung. This request for applications is intended to encourage submission of individual research grant proposals designed for the study of the origin, differentiation, and renewal of mucous cells in the conducting airways of the lung and determine the factors controlling the growth and differentiation of the mucus-secreting elements following injury and during disease states.
- B. Background and Objectives - The tracheobronchial tree is lined by pseudostratified columnar epithelium, mostly comprised of ciliated,

goblet and basas cells. Goblet cells and sub-mucosal glands constitute its mucus secreting elements. The sub-mucosal glands in turn are composed of serous and mucous type cells. In contrast to the mucous cell, the serous cell contains more endoplasmic reticulum and does not undergo hypertrophy in the hypersecretory state. These secretory structures produce viscous solutions (mucus) of high molecular weight glycoproteins which provide the respiratory system with a protective coat against bacteria or inhaled particles. The cilia of the ciliated epithelial cells constantly push the mucus towards the oral cavity by their beating action, which eventually results in its expectoration as sputum, or being swallowed.

Most airways diseases are characterized by a marked increase in the synthesis of mucus by the bronchial epithelial cells. There is evidence that in some cases the mucus is abnormal in its chemical or physical characteristics, or both. Studies on explant cultures indicate that the increased synthesis of mucus occurs usually in conjunction with rapid mucous cell proliferation. Evidence has accumulated that there are stem cells capable of producing mucus under appropriate stimulus. However, several questions need to be answered in this regard. What cell type is the stem cell? What is the mechanism by which stem cells are stimulated to produce mucus? What environmental conditions are necessary for the maintenance of the state of differentiation of the mucous cell? Does the synthesis of mucus involve the interaction of more than one cell type? Is it possible to modulate mucus production? By what types of agents?

The objectives of this program are to obtain answers to these fundamental questions concerning the biology of the mucus-producing cells.

## II. RESEARCH SCOPE

The proposals should be addressed to the elucidation of the origin, differentiation, and renewal of the mucus-secreting cell in the tracheobronchial epithelium; the response of the mucus-secreting elements to various physiological, pharmacologic and pathologic stimuli which would induce subsequent reparative responses, including replacement of injured respiratory epithelium; the factors which control growth and differentiation of the basal layer of the respiratory epithelium in normalcy and the nature of the epithelial respair resulting from injury induced by chemical, infectious, immunologic, or other agents.

The above topics are listed only to provide a perspective of the scope of research that would meet the objectives of this program. Investigators are encouraged to devise innovative approaches to the understanding of the cell biology of the mucus-producing elements of the respiratory system in health and disease and the potential response of these elements to pharmacologic intervention. The following are some potential approaches that might be considered.



- A. Sources of Material and Anatomic Studies - The anatomic and functional properties of the mucus secreting cells need to be examined employing in vitro techniques for cell isolation and culture. Whole mount techniques, cell density determinations, histochemical evaluation, radioautographic and light and electron-microscopic approaches are among the techniques of promise in these endeavors. Specific details of these and other methodologies to be employed should be provided in the proposals, along with a description of the sources of the tissues or organelles (surface epithelium, submucosal glands, etc.) and the organ or tissue culture technology to be used. In vivo studies may also be proposed. Public Health Service regulations govern all human or animal studies proposed under this announcement.
  
- B. Biochemical Studies - Biochemical approaches are potentially useful for determining the factors which regulate the growth and differentiation of basal cells into goblet cells. The secretory activity of the submucosal glands has been studied in some detail in organ culture, but that of the secretory cells of airway epithelium has not been examined systematically. The characteristics of glycoprotein secretion in goblet cells, such as its basal rate, effect of hormones and drugs, relative rates in normals and in individuals with mucus hypersecretion need to be studied. Techniques employing radioactive precursors, pulse-chase techniques etc. should be useful for such studies.
  
- C. Reparative Processes - The reparative responses of the mucus producing elements of the respiratory epithelium need to be understood. Animal models in which respiratory damage induced by chemical, infectious or immunologic insults can be studied need to be developed in order to evaluate the reparative responses of the epithelium. These studies could provide a rationale for therapy by suggesting potential points of intervention. Proposals may include plans for such studies.

The research areas cited above are examples presented for illustrative purposes only; other approaches to meet the objectives of this program are encouraged. Each research application should clearly define the rationale, background, specific scientific goals and detailed methods of procedure for the projects.

### III. MECHANISM OF SUPPORT

The support mechanism for this program will be the traditional NIH grant-in-aid; successful applicants will plan and execute their own research program. Upon initiation of the program, the Division of Lung Diseases will sponsor periodic workshops to encourage exchange of information between investigators who participate in this program.

Although this program is included and provided for in the financial plans for Fiscal 1979, award of grants pursuant to this request for grant applications is contingent upon ultimate receipt of appropriate funds for this purpose. A variety of approaches would represent valid

responses to this announcement. Accordingly, it is anticipated that there will be a range of costs among individual grants awarded. Applicants are requested to furnish their own estimates of the time required to achieve the objectives of the proposed research project; however, the total project period of this proposal must not exceed five years. At the end of the project period, renewal proposals may be submitted for competitive review. A project period start date of July 1, 1979 is anticipated.

The current policies which govern the research grant programs of the NIH will prevail.

#### IV. REVIEW PROCEDURES AND CRITERIA

Upon receipt, applications will be reviewed for their responsiveness to the specific objectives described in this announcement. If an application is judged unresponsive, the applicant will be contacted and given an opportunity to withdraw the application or to submit it for consideration in the traditional grant program of NIH. Initial technical merit review will be arranged by the Division of Research Grants (DRG). Secondary review will be undertaken by the National Heart, Lung, and Blood Advisory Council.

If a proposal submitted in response to this RFA, is identical to one already submitted to NIH for review, the applicant will be asked to withdraw the pending application before the new one is accepted. Simultaneous submission of identical applications will not be allowed.

The factors considered in the scientific merit evaluation of each application will be identical to those used in traditional NIH research grant application evaluation, including an assessment of the importance of the proposed research problem; the novelty and originality of the approach; the training experience, and research competence or promise of the investigator(s); the adequacy of the experimental design; the suitability of the facilities; and the appropriateness of the requested budget relative to the work proposed.

#### V. METHOD OF APPLYING

- A. Letter of Intent - Prospective applicants are asked to submit a one-page letter of intent which includes a very brief synopsis of proposed areas of research and identification of any other participating institutions. This letter should be sent no later than December 1, 1978, to:

Dr. J. Sri Ram  
Division of Lung Diseases  
National Heart, Lung, and Blood Institute  
National Institutes of Health  
Room 6A-11, Westwood Building  
5333 Westbard Avenue  
Bethesda, Maryland 20014

The Institute requests such letters only to provide an indication of the number and scope of applications to be received. A letter of intent is not binding; it will not enter into the review of any proposal subsequently submitted nor is it a necessary requirement for application.

- B. Format for Applications - Applications should be submitted on form PHS 398, the application form for the traditional research grant. The conventional presentation in format and detail for regular research grant applications should be utilized. Specific attention is directed towards the inclusion of a statement indicating the willingness of the applicant to work cooperatively with other participants in the program and with the National Heart, Lung, and Blood Institute.
- C. Application Procedure - The competed application and six (6) copies should be sent or delivered to:

Division of Research Grants  
National Institutes of Health  
Room 240, Westwood Building  
5333 Westbard Avenue  
Bethesda, Maryland 20014

To ensure their review, applications must be received by 5:00 p.m., EST on January 15, 1979.

A brief covering letter should accompany the original application indicating that it is submitted in response to this program announcement: NHLBI, STUDIES ON THE CONTROL AND DIFFERENTIATION OF MUCUS-PRODUCING CELLS.

## VI. INQUIRIES

Inquiries may be directed to:

Dr. J. Sri Ram  
Division of Lung Diseases  
National Heart, Lung, and Blood Institute  
National Institutes of Health  
Room 6A-11, Westwood Building  
Bethesda, Maryland 20014

Telephone: (301) 496-7332