



WHO Collaborating Center for Tropical Diseases Members

Seated (left to right)

Norbert J. Roberts, Jr., M.D., Dennis M. Walling, M.D., Alan D. T. Barrett, Ph.D.,
Norbert K. Herzog, Ph.D., Victor E. Reyes, Ph.D., Gordon L. Klein, M.D.,
Thomas N. James, M.D., Hui-Min Feng, M.D.

Standing (left to right)

Xue-Jie Yu, M.D., Ph.D., Scott C. Weaver, Ph.D., Robert E. Shope, M.D., S. David Hudnall, M.D.,
Chiaho Shih, Ph.D., Clifford W. Houston, Ph.D., David H. Walker, M.D.,
Charles L. Fulhorst, D.V.M., Dr.P.H., Robert B. Tesh, M.D., Michael R. McGinnis, Ph.D.
Vsevolod L. Popov, Ph.D., David W. Niesel, Ph.D., Laura J. Chandler, Ph.D.,
Barbara L. Doughty, Ph.D., Chester R. Cooper, Jr., Ph.D., Gregory C. Lanzaro, Ph.D.

Not pictured:

Patrick A. Adegboyega, M.D., Elias J. Anaissie, M.D., Judith F. Aronson, M.D.,
Miles W. Cloyd, Ph.D., Edilma B. Guevara, Dr.P.H., B.S.N., Stanley Lemon, M.D., William A.
O'Brien, III, M.D., David N. McMurray, Ph.D., Johnny W. Peterson, Ph.D.,
Richard B. Pollard, M.D., Lynn Soong, M.D., Ph.D., Stephen J. Spann, M.D.,
Joseph Vinetz, M.D., A. Brian West, M.D., Gail L. Woods, M.D.

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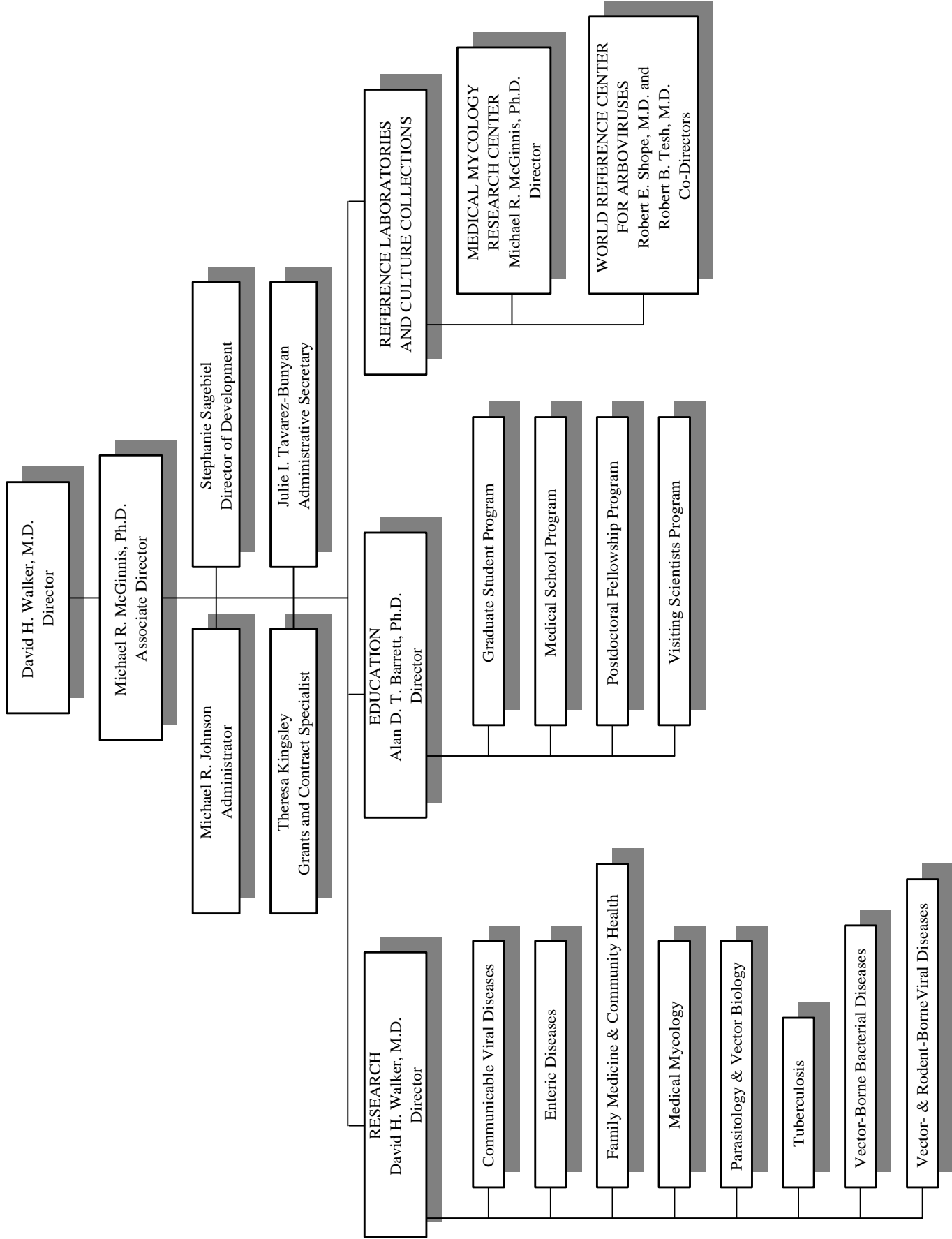
FORWARD

The purpose of the Center for Tropical Diseases is to prevent or eliminate pain, suffering and economic losses caused the etiologic agents of tropical diseases. The Center strives to fulfill its purpose by a) conducting individual and collaborative scholarly research leading to an understanding of tropical diseases and their causes, b) training future generations of scientists and physicians in contemporary research methods and patient care practices, and c) by providing reference laboratory diagnostic services and isolates for basic and applied research.



David H Walker

ORGANIZATIONAL CHART



ACCOMPLISHMENTS AND COLLABORATIVE ACTIVITIES

Communicable Viral Diseases

Miles W. Cloyd, Ph.D.
S. David Hudnall, M.D.
Stanley M. Lemon, M.D.
William S. O'Brien, III, M.D.
Richard B. Pollard, M.D.
Norbert J. Roberts, Jr., M.D.
Chiaho Shih, Ph.D.
Dennis M. Walling, M.D.

Research interests are in the area of host defense mechanisms, particularly immunoregulation and the roles that human mononuclear leukocytes (monocytes-macrophages and lymphocytes) play in antiviral defense. Studies examine the regulatory roles of direct cell-cell interactions and cell-derived mediators, and compare the functions and responses of different subpopulations of cells in response to common viral challenges, such as respiratory syncytial virus (RSV), influenza virus, or human immunodeficiency virus (HIV) infection. Of particular interest is the role of, and events during, active infection of the mononuclear leukocytes by the virus in the course of a developing antiviral response, with attention to regulation of synthesis of viral and host gene products in the infected cells that are ultimately responsible for host defense. The correlation of evolving antiviral immunologic responses with the cellular and molecular events that occur immediately after exposure of leukocytes to the different viruses should help to delineate important events in the pathogenesis of viral infections and provide insight for the design of viral vaccines.

Although the agents of hepatitis represent different virus families, they share a general strategy for their replication as well as several specific features of the viral life cycle. Our ultimate aim is to exploit the internal ribosome entry site as a target for antiviral intervention, or to manipulate it in a way that may attenuate the pathogenic potential of the virus for vaccine purposes. On a broader scale, we are engaged in efforts to expand the repertoire of laboratory systems available for the

study of hepatitis C virus. This includes the development of alternative model systems for hepatitis C and the construction and evaluation of infectious cDNA copies of the hepatitis C genome. We interact widely with a number of basic and clinical scientists who share the desire to develop better ways to control this common and potentially life-threatening infection.

Education

All Faculty

The Center for Tropical Diseases currently has 34 post-doctoral research and clinical fellows, and 25 pre-doctoral fellows studying and working with 23 of the faculty.

The Center has two T32 training grants from the National Institutes of Allergy and Infectious Diseases. A pre-doctoral program, "Emerging and tropical infectious diseases," was awarded for a period of five years in September 1997 with Alan D. T. Barrett, Ph.D. as principal investigator. A post-doctoral program, "Emerging and reemerging infectious diseases," was awarded for a period of five years from September 1998 with Norbert J. Robert, Jr., M.D. as principal investigator.

The pre-doctoral grant supports three pre-doctoral trainees to perform research toward the Ph.D. degree and three medical students undertake short-term research training overseas. For 1997-1998, the three pre-doctoral trainees supported were Aaron Brault who investigated "Ability to Eastern and Venezuelan equine encephalitis virus to adapt to new mosquito vectors" (Mentor: Scott C. Weaver, Ph.D.), Neil Haycocks who undertook the "Identification and characterization of temperature regulated genes in the pathogenic fungus *Penicillium marneffeii*" (mentors: Chester R. Cooper, Jr., Ph.D. and Michael R. McGinnis, Ph.D.) and William E. Whitehead who studied the "Identification and characterization of cis-element mutations in the human hepatitis B virus isolated from patients with hepatocellular carcinoma"

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(mentor: Chiaho Shih, Ph.D.). For 1998-1999, Aaron Brault continues being supported by the training grant, and two new trainees were selected; Mark E. Shurtleff will study “*In vivo* gene expression and regulation in methicillin resistant *Staphylococcus aureus*” (Mentor: David Niesel, Ph.D.) and Amy C. Shurtleff will investigate “Contributions of the complement system to the pathogenesis of Pichinde virus infection of guinea pigs” (Mentor: Judy F. Aronson, M.D.).

Four medical students have participated in the training program. Due to the reorganization of the medical school curriculum, first year students may now undertake short term overseas research training at the end of their first year during April-June, while fourth year students can go overseas as a research elective. We are working towards giving opportunities to medical students at all stages of their training to apply for funds to work overseas. Two first year medical students went abroad during April-June 1998. Shilpen Patel went to Peru and worked on the epidemiology of Oropouche fever while Adaeze Okeke went to Costa Rica and worked on leishmaniasis. Two fourth year students, Cynthia Ho and Laura Miramontes, went to Thailand in the Fall of 1998 and worked on dengue. Ms. Ho worked on characterization of transplacental transfer of maternal-fetal dengue-specific IgG subclasses at that time of birth while Ms. Miramontes investigated development and kinetics of dengue antibody in infants during the first year of life.

In 1998 the Center for Tropical Diseases began sponsorship of three student awards recognizing excellence in research on emerging or tropical infectious diseases. Two awards were given through the Graduate School of Biomedical Sciences to recognize graduate students and one was given through the School of Medicine to recognize a medical student. The first recipients of the graduate student award were Adrian Billings (mentor: David H. Walker, M.D.) and Pei-Chung Tai (mentor: Victor Reyes, Ph.D.) received the medical student award. The Center for Tropical Diseases was also successful in at-

tracting money to sponsor a scholarship for a graduate student in the area of emerging or tropical infectious diseases. The recipient of the Allen J. Smith Scholarship in Emerging and Tropical Infectious Diseases was Claudia Marcela Diaz who is investigating “Identification of CD8 T-lymphocyte epitopes of the major surface proteins of *Rickettsia conorii*, rOmpA and rOmpB” (mentor: David H. Walker, M.D.).

Enteric Diseases

Edilma B. Guevara, Dr. P.H., B.S.N.
Norbert K. Herzog, Ph.D.
Clifford W. Houston, Ph.D.
David W. Niesel, Ph.D.
Johnny W. Peterson, Ph.D.
Vsevolod L. Popov, Ph.D.
Victor E. Reyes, Ph.D.
A. Brian West, M.D.

Faculty in the Enteric Diseases group were involved in research and training of graduate students and postdoctoral fellows with whom they investigated the pathogenesis of several bacterial infections of the gastrointestinal tract. The focus of their research was on selected gram-negative bacilli that colonize the epithelium of the stomach and both the small and large intestines. Dr. Reyes' laboratory has determined that in *Helicobacter pylori* infection of the stomach, class II major histocompatibility complex molecules on the epithelial cells serve as receptors for the bacteria. Bacterial adherence triggers signal transduction, which can culminate in apoptosis. Receptor interaction is thought to be important in initiating the inflammatory process leading to the formation of gastric ulcers and cancer. In collaboration with Dr. Barrett, Dr. Niesel's laboratory evaluated the potential of attenuated mycobacteria (BCG) as a delivery vehicle for expressing a variety of antigens. They have developed and patented a plasmid vector for BCG vaccine that does not require an antibiotic marker, making it more suitable for use in humans. The gene for an 18-kDa antigen from *Mycobacterium*

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leprae is expressed well only after engulfment of the bacteria by mononuclear cells. The results have been encouraging in that a novel vaccination approach can likely be developed. In addition, Dr. Niesel's laboratory investigated the biochemical and genetic basis for epithelial cell invasion by *Shigella flexneri* and *Salmonella typhimurium*, with particular emphasis on antigens expressed uniquely during infection. Dr. Herzog, often collaborating with Dr. Niesel, was engaged in research into the processes of cellular signal transduction and their role in disease pathogenesis. His laboratory began developing decoy oligonucleotides that will block expression of the activating NF κ B/Rel transcription factors and reduce the expression of proinflammatory cytokines in response to Pichinde virus infection in an effort to reduce viral pathogenesis. These studies should improve our understanding of how alterations in signal transduction systems lead to or contribute to diseases such as cancer and infectious diseases. Dr. Houston, in collaboration with Dr. Chopra, studied the hemolytic toxin produced by *Aeromonas hydrophila*, an etiologic agent of diarrheal disease. They recently completed an exhaustive characterization study of the hemolytic toxin, using molecular genetic, immunological, biochemical, and biological approaches. Future collaborative research with the Center for Structural Biology will relate chemical structure to biological activity. Research in Dr. Peterson's laboratory, in collaboration with Dr. Chopra, focused on the pathogenesis of cholera and salmonellosis. The mechanism of formation arachidonic acid metabolites (e.g., PGE₂), induced by cholera toxin and lipopolysaccharide, was investigated to determine the specific role of eicosanoids in secretory and inflammatory diarrheal diseases. PGE₂ stimulates transcription of several cytokine genes, which enhance intestinal inflammation. Additional studies were devoted to the development of bacterial vaccines for cholera. Key to the support of all of these research activities was the histopathology consultation provided by Drs. West and Gourley. Both of these surgical patholo-

gists have been immensely helpful in providing valuable fixed tissue specimens and interpretations of patient specimens.

Medical Mycology

Elias J. Anaissie, M.D.*

Chester R. Cooper, Jr., Ph.D.

Michael R. McGinnis, Ph.D.

Basic research conducted by Dr. Cooper and his graduate student, Neil Haycock, dealt with the dimorphic fungus *Penicillium marneffeii*. Experimental work involved how the fungus is able to convert from its saprophytic mould phase to its parasitic intracellular yeast form. An *in vivo* mouse model was developed to study gene expression. Molecular techniques were developed to also characterize gene expression. Gene expression studies for *Cryptococcus neoformans* were conducted by Dr. Michael Smith.

The taxonomy and molecular phylogeny for the etiologic agent of lobomycosis in humans and dolphins were investigated by graduate student Elsa Haubold under the mentorship of Dr. Cooper. It was concluded that the etiologic agent of this disease was a fungus and that a new genus was needed for the fungus.

Applied research involved *in vitro* antifungal susceptibility testing of several new antifungal agents against a broad range of fungi. Antifungal drug susceptibility was correlated with the phylogeny of the fungi tested. This was the first time such a correlation had been made. A large neonate study involving several institutions in the United States was conducted to evaluate the identification accuracy of the yeast *Candida albicans* and its susceptibility to fluconazole by Dr. McGinnis in collaboration with Dr. Judy Rowen. Nearly 20% of the isolates were initially misidentified, resulting in misleading interpretations of susceptibility testing data.

The staff were involved in collaborative studies with scientists from Australia, Austria, Brazil, Japan, Netherlands and Thailand. The diagnostic laboratory provided isolate identification and anti-

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fungal susceptibility testing assistance to numerous physicians and scientists in the United States and elsewhere in the world.

Parasitology and Vector Biology

Rodrigo Correa-Oliveira, Ph.D.*

Barbara L. Doughty, Ph.D.

Thomas N. James, M.D.

Gregory C. Lanzaro, Ph.D.

Lynn Soong, Ph.D.

Joseph Vinetz, M.D.

The program in parasitology and vector-biology expanded with the addition of two new faculty members. This program studied four of the five WHO-designated "Great Neglected Diseases," i.e., malaria, schistosomiasis, leishmaniasis and trypanosomiasis. Dr. Lynn Soong joined the Center in March of 1998 and developed a program that studied *in vivo* the mechanisms of pathogenesis and protective immunity in cutaneous leishmaniasis, as well as field studies on the biology of urban leishmaniasis in Brazil in collaboration with Dr. Lanzaro. Dr. Vinetz joined the Center in July of 1998 and actively pursued studies on molecular approaches to blocking malaria transmission. His approach studied the aspect of *Plasmodium*-mosquito midgut interactions regarding how ookinetes use chitinases to penetrate the chitin-containing peritrophic matrix. Basic knowledge of these interactions at the molecular level will provide opportunities to interfere with the malaria parasite development and transmission to the human host. Dr. Doughty is the program director of an international collaborative research program on schistosomiasis and Chagas' disease in Brazil. The studies conducted under her guidance were directed towards understanding the immunopathological mechanisms of disease in human hepato-splenic schistosomiasis and Chagas' disease. Immunoepidemiological observations on human

infections in endemic areas of transmission provide a basis for understanding the contribution of host genetics, parasite genetics, immunologic responses to chronic infection and pathologic mechanisms leading to disease.

Dr. Lanzaro conducted studies in Mali, Africa on the population genetics of *Anopheles gambiae*, the vector of malaria. These studies were designed to determine the genetic structure of the natural population of *A. gambiae* under natural conditions of malaria transmission. Information obtained from these studies will provide the basis for the management of malaria vectors by means of genetic manipulation by defining patterns of gene flow both among and within vector populations. Dr. Lanzaro also studied the effects of vector saliva and specific salivary peptides on the pathogenesis of *Leishmania chagasi*, in collaboration with Dr. Soong. These studies analyzed the population genetics of the genes for maxadilan in *Lutzomyia longipalpis*, the insect vector of *Leishmania*. Maxadilan is a small salivary peptide that functions as both a vasodilator and immunomodulator when the insect bites the human host transmitting the infection. These studies were conducted in Colombia, Costa Rica and Brazil to determine the degree of antigenic polymorphism and the role of anti-

Tuberculosis

David N. McMurray, Ph.D.*

Jeffrey Taylor, M.P.H.*

Gail L. Woods, M.D.

Research activities concerning tuberculosis included evaluation of a commercial nucleic acid amplification test (enhanced Mycobacterium Tuberculosis Direct Test, GenProbe, Inc) for rapid diagnosis of pulmonary tuberculosis in prison inmates, rapid diagnosis of extrapulmonary tuberculosis by testing nonrespiratory specimens that are smear-positive for acid-fast bacilli, and rapid identification of *Mycobacterium tuberculosis* in liquid cultures.

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Additionally, a newly developed broth system for susceptibility testing of *M. tuberculosis* was investigated.

Teaching activities included lectures concerning tuberculosis for UTMB medical students, undergraduate and graduate nursing students, physician assistant students, and pathology, family medicine, and internal medicine residents. In addition, several invited presentations were given by Dr. Woods regarding nucleic acid amplification tests for rapid diagnosis of tuberculosis at international conferences.

Vector-borne Bacterial Diseases

Hui-Min Feng, M.D.

Vsevolod L. Popov, Ph.D.

David H. Walker, M.D.

Xue-Jie Yu, Ph.D.

Jorge E. Zavala-Valezquez, M.D.*

The Rickettsial and Ehrlichial Diseases Research Laboratory has been engaged in basic, applied, and field research projects on causative agents of spotted fever and typhus group rickettsioses and human and canine ehrlichioses. *Ehrlichia chaffeensis*, the agent of the emerging infectious disease, human monocytotropic ehrlichiosis (HME), has been studied at the molecular level, molecularly cloning and characterizing the surface protein antigens and evaluating them as in new diagnostic tests. Similar studies of *E. canis* by Drs. Yu and McBride are focused toward vaccine development for this significant disease of dogs and as a model for potential future vaccines for human ehrlichioses. Another project sponsored by the Centers for Disease Control and Prevention in collaborations with Drs. Edwin Masters and John Russell in Cape Girardeau, Missouri is determining the incidence and clinical spectrum of HME in an active prospective study to identify all patients with HME in a largely rural population of 100,000 persons. Studies of the optimal laboratory diagnostic methods have been conducted by Drs. Olano and Yu.

Investigation of *Rickettsia rickettsii*, *R. conorii*, and other spotted fever rickettsiae and basic immune mechanisms against these intracellular bacteria by Dr. Feng and Ms. Crocquet-Valdes are directed toward vaccine development. Molecular approaches have included recombinant mycobacterial vaccines and DNA vaccines. Elucidation of the rickettsicidal mechanisms have emphasized the roles of cytokine induced intracellular symptoms of nitric oxide, and free radicals of oxygen and degradation of tryptophan as well as the roles of T-lymphocytes, particularly cytotoxic CD8 T-cells and of NK cells. Dr. Yu has approached the molecular pathogenesis of rickettsial adhesion to the entry into the host cell via a highly advanced experimental design.

Research and training on emerging and re-emerging rickettsioses in Latin America has involved US and Mexican graduate students and Peruvian and UTMB postdoctoral fellows in studies of a spotted fever rickettsiosis recently discovered in Yucatan, of flying squirrels as a potential zoonotic reservoir of epitemic typhus rickettsiae in Mexico, and of outbreaks of louse-borne typhus in the Peruvian Andes. The prevalence of anti-rickettsial antibodies in Yucatan is slightly greater than 5%, and *R. felis* has been implicated as the cause of a human case as well as identified in indigenous fleas. Molecular studies of *R. felis* have shown its close association with the spotted fever group as a potential agent of this endemic dengue-like rickettsioses. Dr. Walker, Mr. Bill Sweeney, and collaborators from Texas Tech University began field trapping of flying squirrels and established a collaborative relationship with expert mammalogist from Universidad Autonoma de Mexico led by Dr. Gerardo Ceballos. The Peruvian typhus project is a fertile field for contemporary studies of this classic devastating disease, evaluation of the potential for its re-emergence, and development of strategies for its longterm control.

ACCOMPLISHMENTS AND COLLABORATIVE ACTIVITIES

Vector- & Rodent-borne Viral Diseases

Judith F. Aronson, M.D.
Alan D.T. Barrett, Ph.D.
Laura J. Chandler, Ph.D.
Charles Fulhorst, D.V.M., Dr. P.H.
Robert E. Shope, M.D.
Robert B. Tesh, M.D.
Scott C. Weaver, Ph.D.

The World Reference Center for Arboviruses supplied reference viruses and diagnostic reagents to other laboratories in the United States and to 20 collaborating laboratories overseas. Molecular epidemiology studies showed that jungle dengue virus strains in West Africa and Malaysia differed from corresponding serotypes circulating in urban areas in the same countries. The results suggest that the dengue progenitors most likely originated in Asia. Companion studies of chikungunya virus showed its origin probably was in Africa. Research on St. Louis encephalitis virus in Houston, Texas revealed that the virus is maintained in very focal niches, and is not regularly spread rapidly and widely by birds as some have postulated. The Emerging Viruses Program documented the emergence of Mayaro in South America as an important cause of human illness, usually diagnosed in error as dengue. In addition, the origin of epidemic Venezuelan encephalitis virus, once a mystery, now appears more certain to be in Colombia and Venezuela where endemic subtype ID viruses predominate and are genetically very closely related to epidemic subtype IC. A hantavirus related to Rio Mamore virus was isolated from rodents in northwestern Peru, a first for that country. Five strains of a probably new arenavirus were also isolated from rodents in the Peruvian Amazon. In the United States, important progress was achieved in mapping the distribution of antibody to a new arenavirus in rodents and people in the Southwest, and to hantaviruses in California. The St. Louis encephalitis project was funded by the John Sealy Endowment Fund, and the rest of the research by the National Institutes of Health. Six graduate

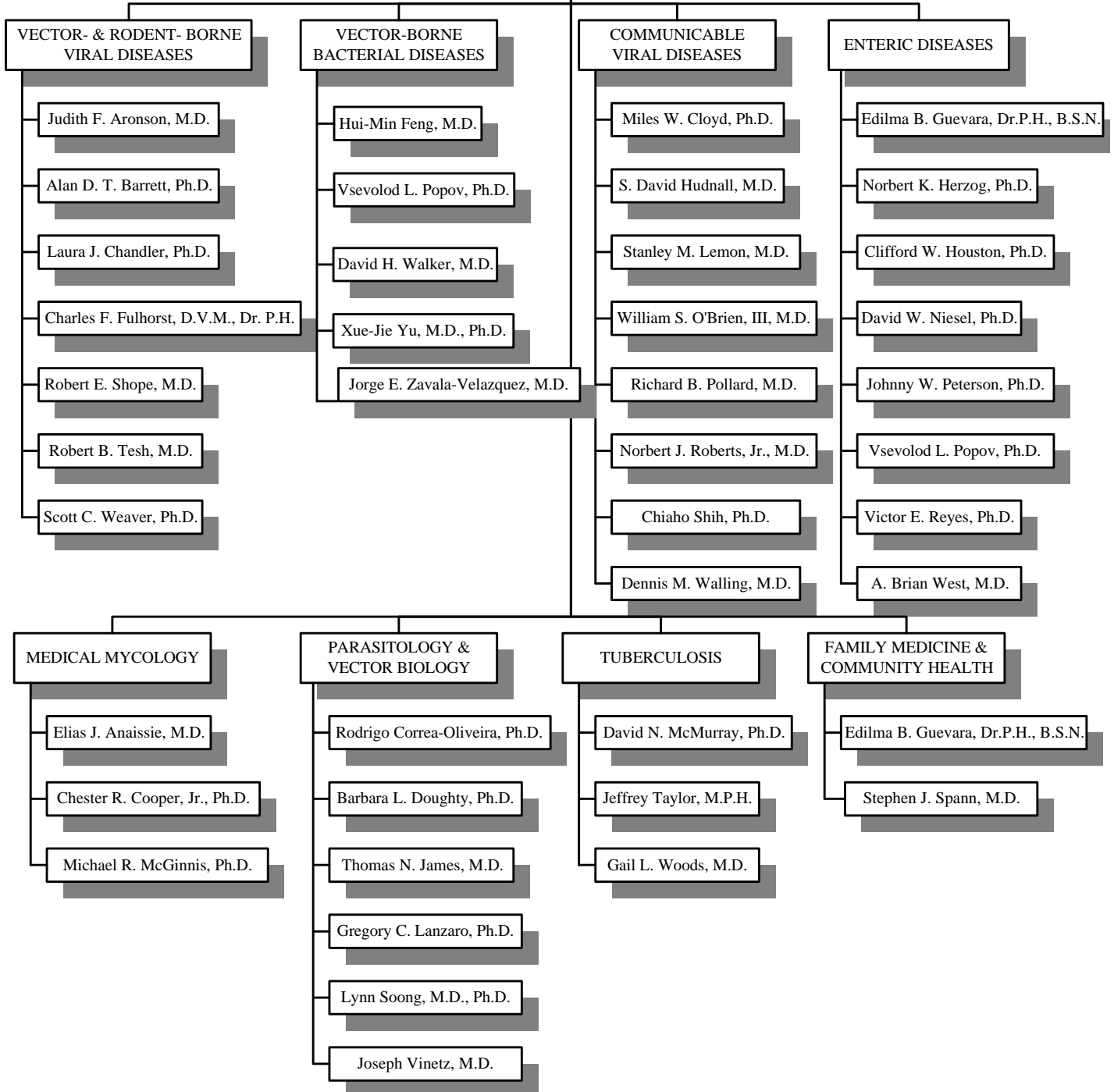
students and five post-doctoral fellows participated in these studies and the drug design study described below.

Scientists of the Center for Tropical Diseases have teamed in a new venture with personnel of the Sealy Center for Structural Biology. The objective is to employ rational drug design to engineer polypeptides that will inhibit alphavirus capsid formation, RNA-capsid or E2-capsid interaction, and flavivirus glycoprotein attachment to cell receptors of hazardous viruses. Venezuelan encephalitis capsid protein was purified and its structure partially solved. Polypeptides with activity against Langkat virus, a flavivirus related to tick-borne encephalitis, are under study. In a different approach, a nucleic acid aptamer active against the transcription factor NFκB is being developed in a novel approach aimed at preventing the lethal effects of viruses such as Lassa fever. These studies are funded by DARPA as part of the program to find countermeasures to bioterrorism.

**CENTER FOR TROPICAL DISEASES
RESEARCH FACULTY**

David H. Walker, M.D.
Director

Michael R. McGinnis, Ph.D.
Associate Director



FUNDED RESEARCH

Patrick A. Adegboyega, M.D.

“Effects of cyclosporine on calcium metabolism,” Southern Medical Association Research Grant for Residents

Judith F. Aronson, M.D.

“Structure-based Design of Acute Countermeasures to Alphaviruses, Flaviviruses, and Arenaviruses,” Defense Advanced Research Projects Agency (with *Robert E. Shope, Alan D. T. Barrett, Norbert K. Herzog, and Scott C. Weaver*)

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health Program Project (with *Robert B. Tesh, Charles F. Fulhorst, Scott C. Weaver, Robert E. Shope, and Alan D. T. Barrett*)

Alan D. T. Barrett, Ph.D.

“Structure-based Design of Acute Countermeasures to Alphaviruses, Flaviviruses, and Arenaviruses,” Defense Advanced Research Projects Agency (with *Robert E. Shope, Judith F. Aronson, Norbert K. Herzog, and Scott C. Weaver*)

“Emerging and Tropical Infectious Diseases,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases, Training Grant (with *David H. Walker*)

“Determination of Virulence Phenotype and Immunogenicity/protein of Japanese Encephalitis Viruses in Outbred Mice,” OraVax, Inc.

“Vaccines Against Emerging Infectious Diseases,” Clayton Foundation for Research (with *David H. Walker and Xue-Jie Yu*)

“Development of Recombinant BCG Vaccines to Prevent Dengue,” Texas Higher Education Coordinating Board Advanced Technology Program

“Construction of Chimeric Yellow Fever-Dengue Vaccine Viruses,” World Health Organization

“Support for World Reference Center of Arboviruses,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Robert B. Tesh, Scott C. Weaver, Laura J. Chandler, Charles F. Fulhorst, and Robert E. Shope*)

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health Program Project (with *Robert B. Tesh, Charles F. Fulhorst, Scott C. Weaver, Robert E. Shope, and Judith F. Aronson*)

Laura J. Chandler, Ph.D.

“Molecular Epidemiology of St. Louis Encephalitis,” John Sealy Memorial Endowment Fund

“Japanese Encephalitis Vaccine Efficacy Testing,” Boran Pharmaceuticals

“Support for World Reference Center of Arboviruses,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Robert B. Tesh, Scott C. Weaver, Charles F. Fulhorst, Alan D.T. Barrett, and Robert E. Shope*)

Chester R. Cooper, Jr., Ph.D.

“*In vivo* Comparison in a Murine Animal Model of SCH 56592, Amphotericin B, and Itraconazole Against *Penicillium marneffeii*,” Schering-Plough Research Institute (with *Michael R. McGinnis*)

“Expression of Cell Wall-Associated Genes During Phase Transition of *Penicillium marneffeii*, an Emerging Fungal Pathogen,” John Sealy Memorial Foundation

Barbara L. Doughty, Ph.D.

FUNDED RESEARCH

“Studies on Schistosomiasis and Chagas’ Disease in Brazil,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

Hui-Min Feng, M.D.

“Emerging and Re-Emerging Rickettsioses in Latin America,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker*)

“Production and Sharing of Ehrlichial Research Reagents,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker* and *Xue-Jie Yu*)

“Epidemiology of Human Monocytic Ehrlichiosis,” Centers for Disease Control and Prevention (with *David H. Walker* and *Xue-Jie Yu*)

“Analysis of Spotted Fever Rickettsial Antigens,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker* and *Vsevolod L. Popov*)

“Antigenic Composition of Medically Related Ehrlichiae,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker* and *Xue-Jie Yu*)

“Identification of the Etiology of an Emerging SFG Rickettsiosis in the Yucatan,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker*)

Charles F. Fulhorst, D.V.M., Dr.P.H.

“Ecology and Epidemiology of Emerging Arenaviruses in the Southwestern United States,” National Institutes of Health/National Institutes of Allergy and Infectious

Diseases, (with *Robert B. Tesh* and *Scott C. Weaver*)

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases, (with *Robert B. Tesh*, *Scott C. Weaver*, *Judith F. Aronson*, and *Alan D. T. Barrett*)

“Support for World Reference Center of Arboviruses,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Robert B. Tesh*, *Scott C. Weaver*, *Laura J. Chandler*, *Alan D.T. Barrett*, and *Robert E. Shope*)

“Epidemiology and Ecology of Venezuelan Hemorrhagic Fever,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Robert B. Tesh*)

Norbert K. Herzog, Ph.D.

“Alterations in NFκB Proteins Contribute to Changes in Mitochondrial DNA transcription Associated with Aging,” University of Texas Medical Branch, Sealy Center on Aging Seed Money Research Funding Program

“Structure-based Design of Acute Countermeasures to Alphaviruses, Flaviviruses, and Arenaviruses,” Defense Advanced Research Projects Agency (with *Robert E. Shope*, *Alan D. T. Barrett*, *Judith F. Aronson*, and *Scott C. Weaver*)

“*S. flexneri* Interaction with Epithelial Cells: A Role of a Bacterial Protein Tyrosine Kinase,” John Sealy Memorial Endowment Fund-Grant

“NFκB/Rel Proteins in Mitochondria,” University of Texas Medical Branch Small Grant

FUNDED RESEARCH

“Mechanism of Toxic Injury in Vascular Tissue,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

Clifford W. Houston, Ph.D.

“Cytotoxic Enterotoxin as a Virulence Factor of *Aeromonas hydrophila*,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

S. David Hudnall, M.D.

“Prevalence of Human Herpesvirus 8 Infection and Blood Infectivity in Normal Adult Blood Donors and High Risk Groups in the Southeastern Texas Region,” Gulf Coast Regional Blood Center

Gordon L. Klein, M.D.

“The Role of Magnesium Repletion in Burn-associated Hypocalcemia and Parathyroid Hormone Unresponsiveness,” Shriners Hospitals for Crippled Children

“The Use of Bisphosphonates to Preserve Bone Mass in Pediatric Burn Patients,” Shriners Hospitals for Children

Gregory C. Lanzaro, Ph.D.

“Genetic Variability in Sand Fly Vectors of Leishmaniasis,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

“Genetic Structure of *An. gambiae* Populations in Mali,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

“Genetics of The Mosquito Vector of Epidemic Venezuelan Equine Encephalitis,” John Sealy Memorial Endowment Fund,

Research Development Grant

Michael R. McGinnis, Ph.D.

“Development of an Electronic Infrastructure for Medical Mycology,” Pfizer, Inc., Roerig Division, U.S. Pharmaceutical Group

“Susceptibility Testing of Black Fungi to Antifungal Agents,” Pfizer, Inc., Roerig Division, U.S. Pharmaceutical Group

“Evaluation of Fluconazole Susceptibility in Neonates,” Pfizer, Inc., Roerig Division, U.S. Pharmaceutical Group

“Space Flight Effects on Fungal Growth, Metabolism and Sensitivity to Antifungal Drugs,” National Aeronautics and Space Administration

“Medical Mycology Home page,” Pfizer, Inc., Roerig Division, U.S. Pharmaceutical Group

“Influence of Simulated Microgravity on Yeast Cytoskeleton and Virulence Factors,” National Aeronautics and Space Administration

“*In vitro* Activity of Voriconazole Against *Blastomyces*, *Coccidioides*, *Histoplasma*, and *Sporothrix*,” Pfizer, Inc., Roerig Division, U.S. Pharmaceutical Group

“*In vitro* Antifungal Susceptibility of *Penicillium marneffeii* Against Terbinafine” Novartis Forschungsinstitut CMBH

David W. Niesel, Ph.D.

“*Shigella flexneri* Interaction with Epithelial Cells: Role of a Bacterial Protein Tyrosine Kinase,” John Sealy Memorial Endowment for Biomedical Research

“*Salmonella* Surface Expression of Zona Antigens,” Zonagen, Inc.

FUNDED RESEARCH

“Testing of the PMT System,” Premier Medical Technologies, Inc.

“Role of TNF- α in Invasive Bacterial Disease,” Miles, Inc.

“*Yersinia enterocolitica* and Graves Disease,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with Gary R. Klimpel)

“Development of Recombinant BCG Vaccines to Prevent Dengue,” Texas Advanced Technology

“Bacterial Induced Cytokine Production in the Gut,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with Gary R. Klimpel)

William A. O’Brien, M.D.

“NIH Brain Bank,” National Institutes of Health (with Benjamin Gelman)

“Lipid mediators in HIV neurotransmitter dysfunction,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases

Johnny W. Peterson, Ph.D.

“Anti-inflammatory Properties of WPLP-14 in Mice Challenged with *Salmonella typhimurium*,” Cytos Pharmaceuticals

“Antitoxin Therapy: an Alternative to Antibiotic Therapy in Burn Wound Infections.” Shriners Hospitals for Crippled Children

“Molecular Mode of Action of Bacterial Enterotoxins.” National Institutes of Health

“Virulence Factors in the Pathogenesis of Salmonellosis.” National Institutes of

Health/National Institutes of Allergy and Infectious Diseases

Richard B. Pollard, M.D.

Adult Clinical Trials Unit, National Institutes of Health/National Institutes of Allergy and Infectious Diseases

Viral Activation Transfusion Study , NHLBI

Vsevolod L. Popov, Ph.D.

“Analysis of Spotted Fever Rickettsial Antigens,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng* and *David H. Walker*)

“Training in Emerging and Re-emerging Infectious Diseases,”

“Role of Bacterial Lectins in Kidney Disease,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with Bogdan J. Nowicki)

Victor E. Reyes, Ph.D.

“Impaired Tumor Immunity during *Helicobacter pylori* Infection,” National Cancer Institute

“Training in Emerging and Re-emerging Infectious Diseases,” NRSA/National Institutes of Health

Chiaho Shih, Ph.D.

“Pathogenesis, Chronicity, and Mutations of Hepatitis B,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases

“Naturally Occurring Mutations and Pathogenesis of Human Hepatitis B Viruses,”

FUNDED RESEARCH

John Sealy Memorial Endowment Fund

“Evolution of Human Hepatitis B Virus Precore Variant,” National Institutes of Health Research Career Development Award

Robert E. Shope, M.D.

“Structure-Based Design of Acute Countermeasures to Alphaviruses, Flaviviruses, and Arenaviruses,” Defense Advanced Research Projects Agency (with *Judith F. Aronson, Alan D. T. Barrett, Norbert K. Herzog, and Scott C. Weaver*)

“Evaluation of Hepatitis GB Virus-C Passage in Animal Models,” Abbott Laboratories

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health Program Project Grant (with *Charles F. Fulhorst, Scott C. Weaver, Judith F. Aronson, Robert B. Tesh, and Alan D. T. Barrett*)

“Support for World Reference Center of Arboviruses,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Scott C. Weaver, Laura J. Chandler, Alan D. T. Barrett, and Robert B. Tesh*)

“Screening of Anonymous Blood Samples for Antibodies to Flaviviruses,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Alan D. T. Barrett*)

Lynn Soong, M.D., Ph.D.

“Role of CD4⁺ T Lymphocytes in Murine Cutaneous Leishmaniasis,” John Sealy Memorial Endowment Fund

“Pathogenic Mechanisms of Cutaneous

Leishmaniasis,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

Miguel J. Stadecker, M.D., Ph.D.

“Immunoregulation in Schistosomiasis,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

“Development of Strategies for Amelioration of Pathology in Schistosomiasis,” TDR, World Health Organization

Jeffery P. Taylor, M.P.H.

“Tuberculosis Genotyping and Surveillance Network,” Centers for Disease Control and Prevention

Robert B. Tesh, M.D.

“Potential for VEE Emergence in North America,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

“Molecular Biology of Parasite Vectors,” MacArthur Foundation

“Detection and Diagnosis of Emerging Viral Diseases,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health Program Project Grant (with *Charles F. Fulhorst, Scott C. Weaver, Judith F. Aronson, Robert E. Shope, and Alan D. T. Barrett*)

“Epidemiology and Ecology of Venezuelan Hemorrhagic Fever,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *Charles F.*

FUNDED RESEARCH

Fulhorst)

“Support for World Reference Center of Arboviruses,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Scott C. Weaver, Laura J. Chandler, Alan D. T. Barrett, and Robert E. Shope*)

David H. Walker, M.D.

“Emerging and Re-Emerging Rickettsioses in Latin America,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng*)

“Production and Sharing of Ehrlichial Research Reagents,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng* and *Xue-Jie Yu*)

“Epidemiology of Human Monocytic Ehrlichiosis,” Centers for Disease Control and Prevention (with *Hui-Min Feng* and *Xue-Jie Yu*)

“Analysis of Spotted Fever Rickettsial Antigens,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng* and *Vsevolod L. Popov*)

“Antigenic Composition of Medically Related Ehrlichiae,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng* and *Xue-Jie Yu*)

“Identification of the Etiology of an Emerging SFG Rickettsiosis in the Yucatan,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases (with *Hui-Min Feng*)

“Vaccines Against Emerging Infectious Diseases,” Clayton Foundation for Research

(with *Alan D. T. Barrett* and *Xue-Jie Yu*)

Dennis M. Walling, M.D.

"Epstein-Barr virus persistence in oropharyngeal epithelium," American Cancer Society

Scott C. Weaver, Ph.D.

“Mechanisms of Arbovirus Adaptation to Mosquito Vectors,” National Institutes of Health/ National Institutes of Allergy and Infectious Diseases

“Structure-based Design of Acute Countermeasures to Alphaviruses, Flaviviruses, and Arenaviruses,” Defense Advanced Research Projects Agency (with *Robert E. Shope, Judith F. Aronson, Norbert K. Herzog, and Alan D. T. Barrett*)

“Mechanisms of Emergence of Zoonotic Viral Pathogens,” National Institutes of Health Program Project (with *Robert B. Tesh, Charles F. Fulhorst, Alan D. T. Barrett, Robert E. Shope, and Judith F. Aronson*)

Gail L. Woods, M.D.

“Incentives for Adherence with Isoniazid Prophylaxis in long-term Correctional Facilities,” Texas Department of Health

“Evaluation of New Diagnostic Tests in Screening Patients with suspected tuberculosis,” Centers for Disease Control and Prevention

BD Probe TecET System, tsDA *Mycobacterium tuberculosis* Direct Detection, Becton Dickinson

“Production of a TB educational video for correctional officers,” Texas Department of Health

FUNDED RESEARCH

“Supplement to Tuberculosis Academic Award,” National Institutes of Health/
National Institutes of Allergy and Infectious
Diseases, NHLBI

Xue-Jie Yu, M.D., Ph.D.

“Characterization of adhesin, invasion, and the vacuolar membrane lysis protein, the molecules of *Rickettsia prowazekii* induced invasion of eukaryotic cells,” John Sealy Memorial Endowment Fund for Biomedical Research

“Vaccines Against Emerging Infectious Disease,” Clayton Foundation for Research (with *David H. Walker* and *Alan D. T. Barrett*)

“Phospholipase A of *Rickettsia prowazekii*: a potential virulence factor,” University of Texas Medical Branch Small Grant Program

“Antigenic Composition of Medically Related Ehrlichiae,” National Institutes of Health/National Institutes of Allergy and Infectious Diseases (with *David H. Walker* and *Hui-Min Feng*)

INTERNATIONAL COLLABORATIVE ACTIVITIES

ARGENTINA

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Gabriela Aviles, Ministerio de Salud de la Nacion, Instituto Nacional de Enfermedades Virales Humanas, Monteagudo, Pergamino

Stephen J. Spann, M.D., "Managed Health Care: Optimizing Costs and Quality" and "Measuring the Quality of Health Care," The Argentine Health Care System, an Update, CEMIC (Center for Medical Education and Clinical Investigation) of Buenos Aires

Stephen J. Spann, M.D., "Family Medicine, Primary Care, and Managed Health Care for 150 generalist physicians," a 60-hour course, co-directed with Dr. Mario Kammelman, The Department of Family and Community Medicine, Obra Social de Seguros (OSSEG), Buenos Aires.

Miguel J. Stadecker, M.D., Ph.D., "A strategy for the relief of parasitic diseases mediated by T-lymphocytes: the concept of antipathology vaccine," Argentine Society of Protozoology and Parasitic Diseases, Carlos Paz, Cordoba

AUSTRIA

Michael R. McGinnis, Ph.D., "In vitro susceptibility of *Penicillium marneffe* to itraconazole and terbinafine," with Neil Ryder, Ph.D., Novartis Research Institute, Vienna

AUSTRALIA

Chiaho Shih, Ph.D., "Defective interfering particles: human Hepatitis B virus variants in patients," with Dr. Graham Cooksley, Clinical

Research Center, Royal Brisbane Hospital Research Foundation, PO Royal Brisbane Hospital, Brisbane

BELGIUM

Elias J. Anaissie, M.D., "Management of invasive aspergillosis in cancer patients" and "Controversies in systemic fungal infection diagnosis" Second International Symposium on Therapeutic Approaches to New Challenges in Systemic Fungal Infections, Antwerp

BOLIVIA

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert E. Shope, M.D., Robert B. Tesh, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Alberto Gianella, Director, CENETROP, Santa Cruz de la Sierra

Stephen J. Spann, M.D., Visiting Professor at Catholic University School of Medicine in Santa Cruz

BRAZIL

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Betsy Dutary-Thatcher, Instituto de Medicina Tropical de Amazonas, Manaus, AM

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Luiz Tadeu Figueiredo, Faculdade de Medicina, University of São Paulo, Ribeirão Preto, SP

Alan D. T. Barrett, Ph.D., Laura J. Chan-

INTERNATIONAL COLLABORATIVE ACTIVITIES

dler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Pedro Vasconcelos, Arbovirus Department, Instituto Evandro Chagas, Belem Para

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Miguel Qunitano, US Army Medical Research Unit

Alan D. T. Barrett, Ph.D., “Molecular epidemiology and ecology of Oropouche virus,” with Dr. Jorge Travassos da Rosa, Director, Instituto Evandro Chagas, Belem

Chester R. Cooper, Jr., Ph.D., “Research on *Lobomyces*” with Paulo R. O. Taborda, M.D., LS Lima Institute, São Paulo

Chester R. Cooper, Jr., Ph.D., “Research on *Lobomyces*” with Valeria B. A. Taborda, M.D., LS Lima Institute, São Paulo

Barbara L. Doughty, Ph.D., “Endemic Leptospirosis in South America,” with Rodrigo Correa-Oliveira, FIOCRUZ, Belo Horizonte

Gregory C. Lanzaro, Ph.D., with Bruce Alexander, Universidade Federal de Minas Gerias, Belo Horizonte

Gregory C. Lanzaro, Ph.D., “Current status of the *Lutzomyia longipalpis* species complex,” with Drs. B Alexander, J-P Mutebi, D Hearne, RD Ward, and JGC Hamilton, XIV Meeting of the Brazilian Society of Protozoology, Caxambu

Michael R. McGinnis, Ph.D., “Mycology Education in the United States,” “Dematiaceae: New Pathogens and Emerging Infections,” “Electronic Communications

Infrastructure for Medical Mycology,” and “Application of Contemporary Systematics in Medical Mycology,” II Congresso Brasileiro de Micologia, Rio de Janeiro

Michael R. McGinnis, Ph.D., “Taxonomy of the etiologic agent of Lobomycosis,” with Paulo Taboroda, M.D., LS Lima Institute, São Paulo

Michael R. McGinnis, Ph.D., “Melanin produced by *Loboa lobo* in tissue,” with Valeria Taborda, M.D., LS Lima Institute, São Paulo

William A. O'Brien, M.D., “Viral Load Monitoring-Are there Differences in women,” “State-of-the-Art Antiretroviral Treatment,” and “Anti-retroviral Resistance-Implications for Treatment Strategies,” 1st International AIDS & Women Conference, São Paulo

Robert E. Shope, M.D., “Opening remarks on surveillance of emerging infectious diseases in the Amazon region,” Co-chairman of meeting to establish a network of laboratories, Instituto Medicina Tropical da Amazons, Manaus

Robert B. Tesh, M.D., “Endemic Leptospirosis in South America,” with Rodrigo Correa-Oliveira, FIOCRUZ, Belo Horizonte

Joseph M. Vinetz, M.D., “Endemic Leptospirosis in South America,” with Rodrigo Correa-Oliveira, FIOCRUZ, Belo Horizonte,

COLOMBIA

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Felio Bello, Universidad la Salle, Bogota

INTERNATIONAL COLLABORATIVE ACTIVITIES

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Jorge Boshell, Virology Group, Instituto Nacional de Salud, Bogota

Alan D. T. Barrett, Ph.D., Robert E. Shope, M.D., Robert B. Tesh, M.D., and Scott C. Weaver, Ph.D., “Mechanisms of emergence of zoonotic viral pathogens”

Gregory C. Lanzaro, Ph.D., with Dr. Felio Bello, Departamento de Biología, Univesidad de La Salle, Bogota

COSTA RICA

Gregory C. Lanzaro, Ph.D., with Dr. Marco V. Herrero, Tropical Disease Resarch Program, School of Veterinary Medicine, Universidad Nacional, Heredia

CUBA

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Maria G. Guzman, Instituto de Medicine Tropical “Pedro Kouri,” Havana

DENMARK

Victor E. Reyes, Ph.D., “An unsuspected role for *Helicobacter pylori* urease in pathogenesis” 3rd International Workshop on Pathogenesis and Host Response in *Helicobacter* infections. Copenhagen

ECUADOR

Alan D. T. Barrett, Ph.D., Laura J. Chan-

der, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., World Reference Center for Arboviruses

EGYPT

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., World Reference Center for Arboviruses

EL SALVADOR

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Gustavo Mora, OPS/OMS, Colonia Escalon, San Salvador

FRANCE

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Xavier de Lamballerie, Laboratoire de Virologie, Faculte de Medecine, Marseille

Gregory C. Lanzaro, Ph.D., guest lecturer, “The use of microsatellite DNA to elucidate the genetic structure of malaria vector populations in west Africa,” Institut Pasteur

FRENCH GUIANA

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Antoine Talarmin, Institut Pasteur de Guyane

IRELAND

Stephen J. Spann, M.D., “Managed Care in

INTERNATIONAL COLLABORATIVE ACTIVITIES

Latin America," WONCA Conference, Dublin

ISRAEL

Chester R. Cooper, Jr., Ph.D., "Dimorphism in the Emerging Pathogen *Penicillium marn-
effei*," Sixth International Mycological Congress, Jerusalem

Michael R. McGinnis, Ph.D., "Non-molecular based diagnostic methods for clinically important moulds." Sixth International Mycological Congress, Jerusalem

JAMAICA

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Dorothy King, University of the West Indies, Mona, Kingston 7

JAPAN

Michael R. McGinnis, Ph.D., "Melanized cell walls of fungi in tissue" with Masatomo Kimura, M.D., Ph.D., Kinki University, Osaka-Sayama

David N. McMurray, Ph.D., "Evaluation of rationally-attenuated mutant vaccine candidates in the guinea pig aerosol challenge model" and "Mechanisms of vaccine-induced resistance in a guinea pig model of pulmonary tuberculosis," US-Japan Joint Conference on Tuberculosis and Leprosy, Osaka

Robert E. Shope, M.D., Annual Meeting of the US-Japan Cooperative Medical Science Program Delegation, Ministry of Health and Welfare, Tokyo

KENYA

Alan D. T. Barrett, Ph.D, Laura J. Chan-

der, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Lee Dunster, Virus Research Center, Nairobi

MALI

Gregory C. Lanzaro, Ph.D., with Dr. Yeya T. Touré, Malaria Research and Training Center, National School of Medicine and Pharmacy, Bamako

Gregory C. Lanzaro, Ph.D., guest lecturer, "Molecular approaches to the study of the population genetics of *Anopheles gambiae* in Mali," Malaria Research and Training Center, National School of Medicine and Pharmacy, Bamako

MEXICO

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Jose Arturo Farfan, Centro de Investigaciones Regionales, Universidad Autonoma de Yucatan, Merida, Yucatan

Victor E. Reyes, Ph.D., "Interactions between *Helicobacter pylori* and gastric epithelial cells that influence epithelial damage" II Symposium of Latin American Biomedical Scientists, Oaxtepec

Stephen J. Spann, M.D., "Revision of the Academic Program" at Universidad Nacional Autonoma de Mexico, Mexico City

Jeffery P. Taylor, M.P.H., "DNA fingerprinting of drug-resistant *Mycobacterium tuberculosis*," with Sebastian-Hernández J Servicios de Salud Publica en el Estado de Tamaulipas, Ciudad Victoria

INTERNATIONAL COLLABORATIVE ACTIVITIES

David H. Walker, M.D., "Identification of an etiology of an emerging SFG rickettsiosis in Yucatan," with Dr. Jorge E. Zavala-Velazquez, Universidad Antonoma de Yucatan, Merida, Yucatan

NETHERLANDS

Elias J. Anaissie, M.D., "The Asperges," Van Vissingen Symposium on Supportive Care and Fungal Infections, Nijmegen

Michael R. McGinnis, Ph.D., "Phylogeny and biodiversity of the black yeasts." with Sydren de Hoog, Ph.D., Centraalbureau voor Schimmelcultures, Baarn

NEW ZEALAND

David N. McMurray, Ph.D., Establishment of an aerosol exposure system for the study of experimental vaccines to prevent bovine tuberculosis in the brush-tailed possum; TB Immunology Group, AgResearch Wallaceville, Upper Hutt

PANAMA

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Evalia Quiroz, Panama City

PERU

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Douglas Watts, M.D., U.S. Naval Research Institute Detachment, Lima

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D.,

"World Reference Center for Arboviruses," with Dr. Carlos Carrillo, Instituto Nacional de Salud, Lima

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., "World Reference Center for Arboviruses," with Dr. Cesar Cabezas, Instituto Nacional de Salud, Lima

Alan D. T. Barrett, Ph.D., Robert E. Shope, M.D., Robert E. Tesh, M.D., Scott C. Weaver, Ph.D., "Mechanisms of emergence of zoonotic viral pathogens"

Barbara L. Doughty, Ph.D., "Endemic Leptospirosis in South America," with Douglas Watts, Ph.D., U.S. NAMRID Collaborator in Lima

Robert E. Shope, M.D., International Congress on Yellow Fever in South America, Cusco

David H. Walker, M.D., "Emerging and re-emerging rickettsioses in Latin America," with Dr. Carlos Carrillo, Instituto Nacional de Salud, Lima

David H. Walker, M.D., "Emerging and re-emerging rickettsioses in Latin America," with Dr. Gladys Ramirez, Instituto Nacional de Salud, Lima

David H. Walker, M.D., with Douglas Watts, M.D., U.S. Naval Research Institute Detachment, Lima

PUERTO RICO

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E.

INTERNATIONAL COLLABORATIVE ACTIVITIES

Shope, M.D., and *Scott C. Weaver, Ph.D.*, "World Reference Center for Arboviruses," with Dr. Vance Vorndam, San Juan Dengue Laboratories, National Center for Infectious Diseases, Centers for Disease Control and Prevention, San Juan

SCOTLAND

Michael R. McGinnis, Ph.D., "Phylogenic Implications of the Use of Voriconazole," Advances in Azole Antifungal Therapy, 4th Congress of the European Confederation of Medical Mycology, Glasgow

SENEGAL

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and *Scott C. Weaver, Ph.D.*, "World Reference Center for Arboviruses," with Jocelyn Thonnon, Unite d' Arbovirologie, Institut Pasteur de Dakar, Dakar

SOUTH AFRICA

William A. O'Brien, M.D., "Treatment of Acute HIV Infection," and "Sequential Therapy-What have we learned?" South African University Program on AIDS, Cape Town

SPAIN

William A. O'Brien, M.D., "HIV tropism and the role of HIV envelope in clinical progression," Citywide Monothematic Conference, Spanish Medical Academy of Sciences, Barcelona

William A. O'Brien, M.D., "Resistance to Combination Antiretroviral Therapy," University of Badolona Special Lecture, Barcelona

SWEDEN

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and *Scott C. Weaver, Ph.D.*, "World Reference Center for Arboviruses," Dr. Bo Niklasson, Swedish Institute of Infectious Disesaes, Stockholm

SWITZERLAND

David N. McMurray, Ph.D., Global Tuberculosis Research Initiative, WHO, Geneva

David N. McMurray, Ph.D., Immunology of Mycobacteria Steering Committee, WHO, Geneva

David N. McMurray, Ph.D., Technical Review Group Meeting, Global Programme for Vaccines and Immunization, WHO, Montreux

David N. McMurray, Ph.D., Technical and Research Advisory Committee; Global Programme for Tuberculosis, WHO, Geneva

David N. McMurray, Ph.D., "Development and evaluation of new tuberculosis vaccines -progress and research priorities". WHO Global Tuberculosis Research Initiative, Geneva, Switzerland

Richard B. Pollard, M.D., 12th World AIDS Conference, Geneva

TAIWAN

Alan D. T. Barrett, Ph.D., Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and *Scott C. Weaver, Ph.D.*,

INTERNATIONAL COLLABORATIVE ACTIVITIES

“World Reference Center for Arboviruses,” with Dr. Ying-Chang Wu, National Institute of Preventive Medicine, Taipei

Chiaho Shih, Ph.D., “Defective Interfering Particles: Human Hepatitis B virus variants in patients,” with Dr. Ding-Shinn Chen, National Taiwan University Hospital, Taipei

THAILAND

Chester R. Cooper, Jr., Ph.D., “Research on the Emerging Pathogen *Penicillium marneffei*” with Nongnuch Vanittanakom, Ph.D. and Thira Sirisanthana, M.D., Chiang Mai University, Chiang Mai

Gail L. Woods, M.D., Invited Speaker, “Quality Assurance and Cost Effectiveness in Diagnosing Tuberculosis with New Diagnostic Tools” The 29th World Conference of the International Union Against Tuberculosis and Lung Disease, Bangkok

UNITED KINGDOM

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Ernie A. Gould, Institute of Virology & Environmental Microbiology, Oxford

Chester R. Cooper, Jr., Ph.D., “Research on the Emerging Pathogen *Penicillium marneffei*” with Roderick J. Hay, M.D., Guy's Hospital, London

S. David Hudnall, M.D., “Modern Approaches to the Epidemiology and Control of Infectious Diseases,” Wellcome Trust Center for the Epidemiology of Infectious Disease, Oxford University, Oxford England

Lynn Soong, M.D., Ph.D., “Characterization

of T helper 2 responses in *Leishmania major* infection,” Dr. Ingrid Mueller, Associate Professor, Imperial College School of Medicine, Norfolk Place, London

URAGUAY

Stephen J. Spann, M.D., “The Rational Use of Diagnostic and Therapeutic Resources, Theory and Practice,” University of Uruguay School of Medicine

Stephen J. Spann, M.D., “The Role of the Family Physician in a Reformed Health Care System,” and “Managed Health Care: Optimizing Costs and Quality,” to FEMI (Interior Medical Federation)

VENEZUELA

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Center for Arboviruses,” with Dr. Rosa Alba Salas, Virology Department, Instituto Nacional de Higiene, Caracas

Alan D. T. Barrett, Ph.D, Laura J. Chandler, Ph.D., Robert B. Tesh, M.D., Robert E. Shope, M.D., and Scott C. Weaver, Ph.D., “World Reference Centers for Arboviruses,” with Dr. Jesus Querales, Instituto Nacional de Higiene “Rafael Rangel”, Ciudad Universitaria, Caracas

Alan D. T. Barrett, Ph.D., Robert E. Shope, M.D., Robert B. Tesh, M.D., and Scott C. Weaver, Ph.D., “Mechanisms of emergence of zoonotic viral pathogens”

PUBLICATIONS

Articles:

Angulo FJ, Getz J, **Taylor JP**, Hendricks KA, Hatheway CL, Barth SS, Solomon HM, Larson AE, Johnson EA, Nickey LN, Ries AA: A large outbreak of botulism: the hazardous baked potato. *J Infect Dis* 178:172-177, 1998.

Anaissie EJ, Mattiuzzi GN, Miller CB, et al: Treatment of invasive fungal infections in renally impaired patients with amphotericin B colloidal dispersion. *Antimicrob Agents Chemother* 42:606-611, 1998.

Anaissie EJ, Rex JH, Uzun O, Vartivarian S: Predictors of adverse outcome in cancer patients with candidemia. *Am J Med* 104:238-245, 1998.

Arnó A, Ruiz L, Juan M, Zayat MK, Puig T, Balagué M, Romeu J, Pujol R, **O'Brien WA**, Clotet B: Impact on the immune system of undetectable plasma HIV-1 RNA (<20 copies/ml) for more than 2 years. *AIDS* 12:697-704, 1998.

Baldwin SL, D'Sousa C, Roberts AD, Kelly BP, Frank AA, Lui MA, Ulmer JB, Huygen K, **McMurray DN**, Orme IM: Evaluation of new vaccines in the mouse and guinea pig model of tuberculosis. *Infect Immun* 66:2951-2959, 1998.

Bamford KB, Fan XJ, Crowe SE, Leary JF, Gourley W, Luthra G, Brooks EG, Graham DY, **Reyes VE**, Ernst PB: Lymphocytes during infection with *Helicobacter pylori* have a helper I (Th1) phenotype. *Gastroenterology* 114:482-492, 1998.

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Colloquium Series 1998

- January 08, 1998 *"Malaria and Motherhood: Clinical Tragedy, Immunological Dilemma"*
Robert S. Desowitz, Ph.D., D.Sc., Adjunct Professor of Epidemiology, University of North Carolina at Chapel Hill, School of Public Health, Chapel Hill, North Carolina
- January 15, 1998 *"Hantavirus Pulmonary Syndrome A Pan-American Zoonosis"*
Brian L. Hjelle, M.D., Associate Medical Director, Blood Services, Associate Professor of Pathology, University of New Mexico, School of Medicine, New Mexico
- January 22, 1998 *"Ribosomal RNA: A Unique Approach for the Study of Malaria Parasites"*
Jun Li, M.D., Ph.D., IRTA Fellow/Senior Staff Fellow, Laboratory of Parasitic Diseases, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
- January 29, 1998 *"Chlamydia pneumoniae, An Emerging Human Pathogen"*
Vsevolod L. Popov, Ph.D., Department of Pathology, WHO Collaborating Center for Tropical Diseases, University of Texas Medical Branch, Galveston, Texas
- February 05, 1998 *"Medical Mycology as we Enter the 21st Century"*
Michael R. McGinnis, Ph.D., Professor, Department of Pathology, Director, Medical Mycology Research center, Associate Director, WHO Collaborating Center for Tropical Diseases, University of Texas Medical Branch, Galveston, Texas
- February 19, 1998 *"Phylogeny of Apparently Non-Pathogenic Theilerias"*
G. Gale Wagner, Ph.D., Professor and Coordinator of International Programs, Professor Veterinary Pathobiology, College of veterinary medicine, Texas A & M University, College Station, Texas
- February 26, 1998 *"Epidemiologic Modeling of Schistosomiasis"*
Barbara L. Doughty, Ph.D., Professor, Department of Pathology, Department of microbiology and Immunology, WHO Collaborating Center for Tropical Diseases, University of Texas Medical Branch, Galveston, Texas
- March 12, 1998 *"Probing the Sporogonic Development of Plasmodium in Mosquito to Identify New targets for Blocking Transmission of Malaria"*
Mohammed Shahabuddin, Ph.D., Investigator, Medical Entomology Section, Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
- March 19, 1998 *"Microscopic Findings in Autopsies From and Epidemic Inhalation of Anthrax"*
Jerome H. Smith, M.D., Professor, Department of Pathology, Autopsy Division, University of Texas Medical Branch, Galveston, Texas
- April 02, 1998 *"Tropical viral Bioterrorist Threats"*
Robert E. Shope, M.D., Professor, Departments of Pathology and Microbiology & Immunology, Preventive Medicine and Community Health, University of Texas Medical Branch, Galveston, Texas
- April 16, 1998 *"Genetic Manipulation of Mosquito Vectors of Disease"*
Anthony A. James, Ph.D., Associate Professor, Department of Molecular Biology and Biochemistry, University of California, Irvine, California
- April 23, 1998 *"Dengue Returns to Cuba"*
Maria G. Guzman, Ph.D., Chief, Department of Virology, Institute of Tropical Medicine "Pedro Kouri," Havana, Cuba
- April 30, 1998 *"Waterborne Nosocomial Infections: A Plea for Action"*
Elias J. Anaissie, M.D., Director of Clinical Affairs, Professor Medicine, Chief, Section of Supportive Care and Oncologic Emergencies, Medical Director, Ambulatory Unit, ACRC, Myeloma & Transplant Research Center, University of Texas Medical Branch, Galveston, Texas

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- May 07, 1998 *“Hematophagous Arthropod Saliva: It’s Role in the evasion of the Host Hemostatic Response”*
Jesus G. Valenzuela, Ph.D., Postdoctoral Fellow, Medical Entomology Section, Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland
- May 14, 1998 *“EBV Pathogenesis in Oral Hairy Leukoplakia”*
Dennis M. Walling, M.D., Assistant Professor, Internal Medicine, University of Texas Medical Branch, Galveston, Texas
- May 28, 1998 *“Description of an in vitro Model for Examining Mechanisms of Increased Vascular Permeability in Hantaviral Pulmonary Syndrome”*
Jay Bruce Sundstrom, Ph.D., National Centers for Infectious Diseases, Division of Viral and Rickettsial Diseases, Special Pathogens Group, Centers for Disease Control and Prevention, Atlanta, Georgia
- August 27, 1998 *“How Does HIV Cause Disease?”*
Miles W. Cloyd, Ph.D., Professor, Microbiology & Immunology, and Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- September 03, 1998 *“Re-Emergence of Yellow Fever: A Cause for Concern?”*
Alan D. T. Barrett, Ph.D., Professor, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- September 10, 1998 *“Bacterial Symbiosis and Transgenic Control of Chagas’ Disease Transmission”*
Charles B. Beard, Ph.D., Chief, Vector Biology Activity, Division of Parasitic Diseases, Centers for Disease Control and Prevention, Chamblee, Georgia
- September 24, 1998 *“Diarrhea and Wasting Associated with AIDS”*
Herbert DuPont, M.D., Chief, Internal Medicine Services, St. Luke’s Episcopal Hospital, Houston, Texas
- October 01, 1998 *“Mayaro Virus Disease: An Emerging Mosquito-borne Zoonosis in Tropical America”*
Robert B. Tesh, M.D., Professor, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- October, 08, 1998 *“Identifying and Characterizing a Hotspot Mutation in the Hepatitis B Virus Basic Core Promoter From Patients with Liver Cancer”*
Bill Whitehead, Graduat Student, Department of Microbiology & Immunology, The University of Texas Medical Branch, Galveston, Texas
- October 15, 1998 *“The Molecular Biology of High Frequency Phenotypic Switching of Candida albicans, A Dr. Jekyll with Many Mr. Hydes.”*
David R. Soll, Ph.D., Professor, Department of Biological Sciences, University of Iowa, Iowa City, Iowa
- October 29, 1998 *“Antimalarial Drug Resistance: Defining the Plasmodium Falciparum Gene Products Targeted by Antifolates and Chloroquine”*
David Fidock, Ph.D., Visiting Scientist, Malaria Genetics Section, LPD, National Institutes of Health, National Institutes Allergy and Infectious Diseases, Bethesda Maryland
- November 05, 1998 *“Mechanisms of Venezuelan Equine Encephalitis Emergence”*
Scott C. Weaver, Ph.D., Associate Professor, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- November 12, 1998 *“Evolutionary Analyses of Hemorrhagic Fever Viruses”*
Michael D. Bowen, Ph.D., Division of Viral and Rickettsial Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia

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- December 03, 1998 *“Virulence Gene Expression by the Anthrax Microbe”*
Theresa M. Koehler, Ph.D., Assistant Professor, Department of Microbiology & Molecular Genetics, The University of Texas Medical School, Houston, Texas
- December 10, 1998 *“Emerging and Re-emerging Rickettsial Diseases in Tropical America”*
David H. Walker, M.D., Director, WHO Collaborating Center for Tropical Diseases, Professor and Chairman, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- December 17, 1998 *“Development and Preclinical Evaluation of New Vaccines for an old Disease - Tuberculosis”*
David N. McMurray, Ph.D., Professor, Medical Microbiology & Immunology, Texas A&M University College of Medicine, College Station, Texas