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Cesar D. Fermin, PhD Curriculum

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Fermin Resume Brief

Dr. Fermin is currently a Professor of Pathobiology & serves as Associate Dean for Research & Advanced Studies in the College of Veterinary Medicine, Nursing & Allied Health (CVMNAH) at Tuskegee University. Tuskegee, AL 36088. fermin_c@tuskegee.edu. Tel 334-727-8786. Fax 334-727-4277.

Dr. Fermin is the Vice President of the www.theihc.org, & serves as the international academic & scientific advisor for Univ. Tecnológica de Santiago (UTESA), in the Dominican Republic. Dr. Fermin is fluent in spoken & written English & Spanish & understands other romance languages.

Dr. Fermin was born in the Dominican Republic where he obtained a BS at UNPHU in Science-Education in 1974. He studied English at Florida Institute of Technology in 1975 (USA) where he also obtained a MS degree in Cell biology in 1977 & a PhD in Biology in1981. Dr. Fermin then did a Post Doctoral fellowship at Baylor College of Medicine in Houston Texas in 1981 & served as an Assistant Professor from1983-1988 when he moved to Tulane Medical School as an Associate Professor 1988. Dr. Fermin was tenured & promoted to professor in 1991. He served as director of Morphological Services, Ultrastructural Pathology, & Pathology Informatics until moving to Tuskegee University in 2006. At Tulane, he counseled & advised dozens of graduate students & fellows.

Dr. Fermin is known internationally for his high resolution TEM work of biological crystals, a skill that he also applied to an extensive list of publications in HIV/AIDS & other retroviruses. Dr. Fermin has a broad background/knowledge of biological systems, Neuroscience, Pathology, & the vestibular system. He is an expert in electron & photon microscopy, tissue/cell interpretation, & digital imaging, & has extensive practical experience in histological, histochemical, & immunohistological applications. In addition, Dr. Fermin has considerable experience with quality control & assurance including biosafety measures, & is equally comfortable with Windows & Macintosh OS advanced productivity features.

The National Institute of Deafness and other Communication Disorders (NIDCD) was established in 1988 at the time that Dr. Fermin served as a reviewer; a function that began in the National Institute of Neurological and Stroke that at time funded hearing and vestibular research. In addition, Dr. was part of the selected panel of scientist that produced the 1991 NIH/NIDCD National Strategic Research Plan, participating in countless meetings near the NIH.

Dr. Fermin held dozens of private & federal funded projects (e.g., National Institute of Health (NIH), National Aeronautics Space Administration (NASA), Louisiana Board of Regents (LBOR), the Deafness Research Foundation (DRF) & served in the advisory board of the National Organization for Hearing Research (NOHR). He advised dozen of scientific projects serving as a consultant to the National Institute of Deafness & Communicative Disorders (NIH), a member of dozens scientific Organizations, served in NIH review panels, editorial boards of scientific journals, advisory boards, & discussion panels, reviewed manuscript for dozens of scientific journals & directed basic & clinical projects. Dr. Fermin is the author of hundreds of published reports in peer-review journals, symposia, book chapters, and scientific proceedings. His organizational, teaching, & presentation skills are excellent.

Name: César D. Fermín

Birth date: December 30, 1950

Birth place: San Cristobal, The Dominican Republic

Race: Hispanic

Citizenship: U.S.A.

Marital status: Married - wife: Mary Gail (Furstenberg) Fermin
Children: Caroline Juliana Aaron

Home Address: 174 Alice Circle
Auburn, AL 36830
(334) 887-5281

Academic Address: Department of Pathobiology
College of Veterinary Medicine Nursing and Allied Health
Tuskegee University
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www.onemedicine.tuskegee.edu
www.compepid.tuskegee.edu

Current Position: Associate Dean for Research and Advanced Studies
College of Veterinary Medicine Nursing and Allied Health (CVMNAH)
Tuskegee University
Williams Bowie Building
Tuskegee, AL 36088

Other Academic Positions:

2000 International advisor on Science and Health. Universidad Tecnologica de Santiago (UTESA), The Dominican Republic. UTESA educates over 40,000 students on 13 different campuses.

2004-2005 Director of Ultrastructural Pathology & Pathology Informatics, Department of Pathology & Laboratory Medicine, Tulane Health Sciences Center, New Orleans, LA 70112

1998-2005 Director of the Centralized Tulane Imaging Center. Department of Pathology & Laboratory Medicine, Tulane Health Sciences Center, New Orleans, LA 70112

1995-2005 Professor of Pathology and Otolaryngology. Department of Otolaryngology, Tulane Health Sciences Center, New Orleans, LA 70112

1988-1995 Associate Professor of Pathology (tenured granted in 1991). Director of Morphological Services, Department of Pathology, TMC. Clinical Associate Professor of Otolaryngology. Department of Otolaryngology, Tulane Health Sciences Center, New Orleans, LA 70112

1983-1998 Assistant Professor, Department of Otorhinolaryngology and Communicative Sciences, Baylor College of Medicine (BCM). Houston, TX 77030

1981-1983 Post-Doctoral Assistant Professor, Department of Otorhino-laryngology and Communicative Sciences, Baylor College of Medicine (BCM) Houston, TX 77030

1970-1974 Professor (teacher) de Ciencias Biológicas, Colegio Nuestra Sra. P. Socorro High School, San Isidro, The Dominican Republic (Biology)

1966-1967 Nurse's Aid/Emergency Room Aid, Ricardo Limardo Hospital, Puerto Plata, The Dominican Republic

Education

1962-1964 **Middle School.** Colegio Antera Mota. Puerto Plata, The Dominican Republic

1964-1968 **High School**. Colegio Nuestra Sra. Perpetuo Socorro. San Isidro Air Force Base. The Dominican Republic

1968-1970 ***Teacher*** *at Colegio Nuestra Sra. Perpetuo Socorro (Immediate superior Sister Margarita Cedeño and Sister Maria de Jesus. Congregation of Our Lady of Perpetual Help., Ave. Juan Pablo , Duarte 139, Santiago, The Dominican Republic)*

1970-1974 **B.S.** (Magna) Ciencias Químicas y Naturales de Educación. Univiversidad Nacional Pedro Henriquez, Ureña, The Dominican Republic

1974-1975 *Intensive* ***English*** *for foreign students. Completed the advanced level (native language: Spanish).*

1975-1977 **M.S**. Florida Institute of Technology (FIT), Melbourne, FL. -Cell Biology- Electron Microscopy. Thesis: "Development of Hair Cells in the Lagena of the Embryonic Chick (*Gallus domesticus*)". Glenn M. Cohen, Ph.D., Advisor

1977-1978 **Lecturer (Adjunct faculty).** Department of Biological Sciences, Florida Institute of Technology, Melbourne Florida 32901 (Present Chairman and ex-professor: Garry Wells, Ph.D.)

1978-1981 **Ph.D**. (Honors) Florida Institute of Technology, Melbourne, FL. - Biological Sciences-Electron Microscopy. Thesis: "Prenatal Ototoxicity of Kanamycin in the Chick: An Ultrastructural Approach. Glenn M. Cohen, Ph.D., Advisor

1981-1983 **Post-doctoral** trainee. Pathology of inner ear epithelia and ganglion after deafferentation. Electron microscopy, histology and immunohistology. Makoto Igarashi, M.D., Advisor

Miscellaneous Training:

1987 Transmission Electron Microscopy and Maintenance. JEOL Training Center, Peabody, MA.
1988 Video Microscopy and Digital Imaging. Marine Biological Laboratory, Woods Hole, MA
1989 Concepts in Molecular Biology. American Association of Pathologists, Bethesda, MD
1990 Advanced Image Processing Methods In Electron Microscopy. Pittsburgh Super Computing Center
1993 In Situ Hybridization. Oncor Instrument Systems, Inc., New Orleans, LA
1994 Molecular Medicine Rotation. Department of Pathology & Laboratory Medicine, Tulane Medical School, New Orleans, LA
1994 Color Thresholding Video Training. Oncor Instrument Systems, Inc., San Diego CA.
1995 TechLinks Training "Supporting Windows 95." New Orleans, La
1997 Research!America "Advocacy for Research in America." How to communicate scientific facts to the general public. New Orleans, La
2000 Academic sabbatical learning gene cloning and developmental molecular approaches applied to neural development

Honors and Awards

1974 B.S., Magna Cum Laude
1977 Sigma Xi, The Scientific Research Society
1977 Beta Beta Beta, Chapter of Sigma PSI
1978 Who's Who Among Students in American Universities and Colleges
1978 Judge for Brevard Science & Engineering Fair, Melbourne, FL 32955
1981-1983 Board of Directors, Florida Institute of Technology Alumni Association
1991 Represented the NIDCD/NIH. National Symposium on Health Research Opportunities for Hispanic Americans, San Antonio, TX

1992	Certificate of appreciation, NIDCD/NIH
1992	Certificate of Merit. Environmental Health and Safety, Tulane Medical School (TMC)
1993	Member Scientific Review Committee of the National Organization for Hearing Research
1993	Certificate of recognition for scientific accomplishments. Colegio Padre Fortin, Santiago, The Dominican Republic
1996	Received certificate from the City of Santiago de los Cabelleros through Dominican Resolution #2323-96 as per Dominican Law #3455 & 5622 as adoptive Son of the city in recognition of contribution to the betterment of the lives of people of the region
1997	Honorary member of the Dominican Republic board of director of the Patronato Cibaeño Contra el Cancer and technical advisor for the Instituto Oncológico Regional del Cibao
2004	Advisor on health and science matters to the Universidad Technologica de Santiago UTESA. The Dominican Republic

Morphological Services responsibility at Tulane Medical School

1997	Sought and secured funds for establishing the Centralized Tulane Imaging Center (CTIC), which I presently direct. The CTIC offers digital imaging and confocal microscopy to Tulane Medical School faculty
1994	Director of Clinical Electron Microscopy, technical part
1994	Director of Histology Core
1994	Director of Tissue Bank
1989	Designed and supervised construction of new EM facility and remodeling of old EM laboratory. Chose, purchased, and supervised installation of state of the art equipment for new EM facility
1989	Secured, operated, and instructed users how to operate state of the art video imaging facility, with color thresholding and standard morphometric techniques
1988-1990	Supervised technical aspects and quality control of histology, EM and immuno-histology in the Department of Pathology and Laboratory Medicine at Tulane University Hospital and Clinic
1988-1990	Ensured biosafety measures for complying with new OSHA regulations of volatile, radioactive, carcinogens, and biohazards
1988-	Instructed faculty, residents, fellows, technicians and students the use of compound optical light microscope, electron microscope, video imaging techniques, and preparation of scientific presentations

Research Experience

Immuno-histochemical techniques, color thresholding, molecular biology, computerized video imaging and graphics, quality assurance, quality control

Isolated hair cells from vertebrate inner ear. University of Würzburg, FRG with Professor H-P Zenner

Immuno-histochemical, immuno-electron microscopy, grant preparation, manuscript preparation, and grant management

Histological, histochemical, photographic and electron microscopic techniques

Summer Visiting Research Associate, Department of Otorhinolaryngology and Communicative Sciences, Baylor College of Medicine

Graduate Research Assistant, Florida Institute of Technology (FIT), Melbourne, FL

Adjunct Research Faculty, Florida Institute of Technology (FIT), Melbourne, FL

Teaching Experience

Pathophysiology of Disease course (150 students). Xavier University of Louisiana, School of Pharmacy.

Molecular and Cellular Biology interdisciplinary PhD program "how to study cells" module." Tulane.

Digital microscopy training for residents. Pathology and Laboratory Medicine. Tulane

Electron microscopy training for residents. Pathology and Laboratory Medicine. Tulane

Image analysis, audivisual visual and html training for residents. Pathology and Laboratory Medicine. Tulane

Basis of Vestibular Disorders. Elective Course offered to medical Students. Tulane.

Member, Graduate School at Tulane

Founder Member, Graduate faculty. Interdisciplinary program in Neurosciences at Tulane

Member, Graduate faculty. Interdisciplinary Molecular Cell Biology Graduate program at Tulane

Lecturer, Medical Students Correlative Anatomy Inner Ear, Departments of Pathology & Laboratory Medicine and Anatomy, TMC

Mentor, Resident Physician Research Training Rotation, Departments of Pathology & Laboratory Medicine and Anatomy, TMC

Lecturer, Resident Physician Introductory Basic Otorhinolaryngology and Communicative Sciences Course, BCM

Lecturer, Resident Physician Neurotology Teaching Conference. Department of Otorhinolaryngology and Communicative Sciences, BCM

Mentor, Graduate Student Training Program in Bioacoustics, Department of Otorhinolaryngology and Communicative Sciences, BCM

Mentor, Medical Student Research Training Program, Department of Otorhinolaryngology and Communicative Sciences, BCM.

Mentor, Resident Physician Research Training Rotation, Department of Otorhinolaryngology and Communicative Sciences, BCM

Teaching Research Assistant, Department of Biology, FIT (Experimental Biology, Experimental Embryology, Experimental Physiology). Redesigned testing paradigm for experimental biology and experimental embryology courses by replacing look-through microscope with identification from projected from 2x2 images

High School Biology/Anatomy Teacher. Dominican AFB, San Isidro, The Dominican Republic

Institutional Service:

2007- Chair CVMNAH 8th Biomedical Research Symposium September 19-21, 2007 with invited speakers from several Ivy League universities (Tuskegee University)

2007- Member Ad Hoc Group for substantive revision of the Graduate Bulletin and Handbook (Tuskegee University)

2007- Member CMVNAH Biomedical Research Infrastructure/Facility Management (Tuskegee University)

2005-2005 Member of the Tulane University Senate

2003-2005 Faculty Advisory Committee for the General Medical Faculty

2003-2003	Chairman of Clinical Diagnosis review committee
2003-2003	Medical School Curriculum Committee
2003-2005	Department of pathology Departmental Safety Representative for Tulane Office of Environmental Health & Safety
2000-2005	Senate Committee on Review of Faculty Status Decision Impasses
2000-2005	Tulane computer/networking architecture review
1998-1998	Chair for search committee. Hyward Human Genetic Program
1997-1997	Member, Review committee for Gross Anatomy course
1997-1997	Member, Administrative Review committee for the Department of Otolaryngology
1995-1995	Member, Five Years Review Committee for Paul Guth, Ph.D. Requested by Dr. James Fisher, Department of Pharmacology
1995-1995	Member, Research Resources Program for Medical School Advisory Committee
1994-1997	Member, Personnel and Honors Committee, Tulane Medical School
1992-1992	Member, Department of Anatomy Curriculum Review Committee, Tulane Medical Center
1993-1993	Member, Department Anatomy Administrative Review Committee, Tulane Medical Center
1989-2003	Interview, Medical Student applicants
1989-1990	Member, Strategic Facility Plan & Space Committee, Tulane Medical Center
1989-1993	Biosafety Officer, Department of Pathology & Laboratory Medicine, Tulane Medical Center
1992-1992	Member, Ad Hoc committee for Recruitment of Director of Experimental Pathology. Research Unit, Tulane Medical Center
1992-1999	Member, Tulane Interdisciplinary Graduate MCB Program Grant Review committee, Tulane Medical Center
1992	Member, Gross Anatomy Curriculum Evaluation committee
1991-1994	Member, Tulane Medical School Animal User committee (ACAR)
1989-1990	Member, Tulane Medical School Ad Hoc committee for CBR Building Space Policy
1990-1992	Member, Tulane Medical School Volunteer Grant committee
1986-1987	Member, Baylor College of Medicine BSRG committee
1983-1987	Member, Baylor College of Medicine Otolaryngology Resident Recruitment committee
1981-1987	Member, Baylor College of Medicine Medical Student Applicant Interviewing committee
1981-1987	Member, Training Advisors Summer program. Baylor College of Medicine and High School for Health Professional Program (HSHP). Houston Texas. HSHP advisor, Ms. Sue Donchatz (6 trainees)

National Service

1997	Member, Special Emphasis Review Panel (NIDCD)
1996	Grant Review: Veteran Administration
1996	Manuscript reviews: Life Sciences
1996	Manuscript reviews: Journal of Comparative Neurology
1995	Manuscript reviews: Journal of Hepathology
1994	Member, Editorial Board of Microscopy Research Techniques
1994	Manuscript Reviews: Cellular and Molecular Biology
1994	Manuscript reviews: Journal of Comparative Physiology A
1993	Manuscript reviews: Archives of Pathology and Laboratory Medicine
1993	Book Review: Archives of Pathology and Laboratory Medicine. 1) Electronic Light Microscopy - Techniques in Modern Biomedical Microscopy by Shelton, 2) Electron Microscopy Immunocytochemistry: Principles and Practice by Polak and Priestley, 3) In Situ Hybridization: Principles and Practice by Polak and Mcgee
1993	Member, Scientific Review committee, National Organization for Hearing Research, Narberth, PA 19072
1992	Member, Site Visit Review Team for Environmental Health Sciences Review committee. National Institutes of Environmental Health Sciences/NIH Research Triangle Park, NC
1986	Manuscript Reviews: Journal of Scanning Electron Microscopy
1989	Manuscript reviews: Hearing Research Journal
1985-1989	Manuscript reviews: Annals Otology, Rhinology, and Laryngology
1988-1991	Member, Scientific Board of Advisors to American Innovision, San Diego CA
1988-1992	Member, Communication Disorders Review Committee. NIDCD
1991	Member, Scientific Panel to the NIH/NIDCD National Strategic Research Plan. Balance and Vestibular System. Bethesda, MD.
1987	Annual Meeting Participation: Co-chairperson, Association for Research in Otolaryngology (ARO), "Vestibular, Nasal, Immunology, Microbiology & Biochemistry"
1987	Annual Meeting Participation: Co-chairperson, Association for Research in Otolaryngology, "Cochlear Implant, Cochlear Morphology, and Embryology"
1987	Annual Meeting Participation: Co-chairperson, Association for Research in Otolaryngology, "Middle Ear, and Facial Nerve"
1986	Grant Reviews: National Science Foundation -- Ad Hoc
1986	American Institute of Biological Sciences. Revision of proposals submitted to NASA

Professional Affiliations

1997	Greater New Orleans Society for Neurosciences (GNSN)
1997	Society for Ultrastructural Pathology (SUP)
1989-	American Society for Investigative Pathology (ASIP)
1988	American Society for Gravitational and Space Biology (ASGSB)
1983	American Society for Cell Biology (ASCB)
1977	Society for Neuroscience (SN)
1976	Southeast Electron Microscopy Society (SEMS)
1978	Association for Research in Otolaryngology (ARO)
1978	Electron (Microscopy Society of America). New name in parenthesis (MSA)
1977	Texas Society for Electron Microscopy (TSEM)

Invited Workshops, Symposia and Conferences

1986 First National Conference on Research Goals and Methods for Otolaryngology - Head and Neck Surgery, Bethesda, MD

1986 NASA Workshop on Gravity Sensing Systems, Monterey, CA.

1986 Morphogenesis of the Otoliths in the Chick (*Gallus domesticus*) Embryo, NASA-American Physiological Workshop on Gravitation Effects on Animal Development, Buffalo, NY

1996 Review of Statoconia Formation in Birds and Original Research in Chicks (*Gallus domesticus*), International Symposium on Formation of Statoliths, Otoliths and Otoconia, New Orleans, LA

1986 Ultrastructural Changes of Statoconia after Segmentation of the Otolithic Membrane. NASA-International Society for Developmental Neuroscience Symposium on the Onset of Function in the Inner Ear, Queretaro, Mexico

1986 NASA-FASEB Conference on Response to Gravity and Space Weightlessness, Copper Mountain, CO

1987 Visiting Research Scientist (Guest Professor), Universitat Klinik und Poliklinik, für Hals-Nasen-und Ohrenkranke im Kopflinikum Würzburg with Prof. H.-P. Zenner.

1987 ASCB-Woods Hole Video Microscopy and Digital Imaging.

1992 Space Lab MIR-1(SLM)-1 Avian Science Development Workshop-AMES. NASA Ames Research Center, Moffett Field, CA.

1992 Lecture and book chapter on Auditory function. A textbook of clinical auditory topics. Sociedad Mexicana de ciencias fisiológicas, A.C. Instituto de Fisiología Celular, Universidad Nacional Autonoma de Mexico

1993 Video microscopy software and hardware applications. Anatomical Society of Great Britain and Ireland, Department of Biomedical Science, The University of Sheffield, UK

1994 Lecture and two book chapters on Central vestibular neurotransmission. Recent Advances in Sensory Physiology. Sociedad Mexicana de Ciencias Fisiologicas, A.C. Instituto de Fisiología Celular, Universidad Nacional Autonoma de Mexico

1994 Lecture. S-100ß, neuronal and possible ionic functions. Ear, Nose and Throat University Hospital, University of Tübingen, Germany

1994 Color thresholding and video imaging in anatomy. Quantitative Morphology Symposium. XIVth Federative International Congress of Anatomy. Lisbon, Portugal, July 24-30

1996 Invited lecture at the First Congreso Internacional y Segunda Jornada Medico-Quirurgica "Dr. Andres Peralta" on the occasion of the 40th anniversary of the Corominas Clinics of Santiago, The Dominican Republic. Presented Lecture entitled "Morphological correlates of HIV cytopathology"

1996 Invited lecture to the Dominican Society of Pathology and Infectious Diseases in Santo Domingo, The Dominican Republic entitled "Role of retroviruses in autoimmune disease"

1997 Invited lecture to the Dominican Society of Pathology, The Dominican Republic entitled "Attachment, penetration and killing of cells by HIV"

2000 Vestibular Labyrinth in Health and disease. Washington University. St. Louis, MO

2001 Bioastronautics Investigator's Workshop. National Aeronautics and Space Administration and Universities Space Research Association. Galveston, Tx

2004 International liason and organizer for "Virus and Neoplasia" Conference in Santiago, the Dominican Republic sponsored by UTESA

2005 International liason and organizer for "Molecular Genetics and Academic Medicine" Conference in Santiago, The Dominican Republic sponsored by UTESA

2007 Emergency Management Institute (FEMA) National Response Plan (NRP). July, 2007.

2007 The 21st Annual Symposium On Career Opportunities in Biomedical Sciences and Health Professions. Orlando World Center Marriott, Orlando FL. April 4-6, 2007.

2007 Tuskegee University Academic Advisement – DataTel Colleague System Training. March, 2007.

2007 Partnership for Preparedness. AAVMC/ASPH Joint Symposium. Emery University Conference Center Hotel, Atlanta, Ga 30329.

2007 How to Manage Interpersonal Conflicts at Work. Leading Effectively Webminar series. October 9th, 2007.

2007 Transformational Leadership. Tuskegee University B.T. Washington Institute for Transformational Leadership.

Invited Lectures & Seminars

1981 "The Vestibular Ganglia of the Squirrel Monkey Before and After Labyrinthectomy". Department of Biological Sciences, Florida Institute of Technology

1982 "Basic Electron Microscopy Techniques: Development, Implication, and Applications" Department of Biology, Rice University, Houston, TX

1983 "Developmental Gradient in a Vertebrate Ear: Ultrastructure of Cytodifferentiation and Synaptogenesis of the Sensory Epithelia", Program for the Neuroscience, BCM

1983 "The Clinician and the Researcher", Division of Public Relations, Methodist Hospital, Houston, TX

1984 "Electron Microscopy of Biological Material: X-Ray Microanalysis of Calcium Incorporation in the Chick Otoliths", Department of Biological Sciences, Florida Institute of Technology

1987 "Vestibular Nerve Morphology and Characterization. Implication of Nerve Morphology to Vestibular Disturbances". Department Otolaryngology University of Würzburg, FRG

1988 The vestibular nerve of normal and pathological specimens. Light and Electron Microscopy. Department of Anatomy, TMC

1989 Computer-Aided Morphometry and Analysis in Anatomy, TMC

1990 Video Microscopy and the Pathology Profession, TMC

1990 Grant Seminar. The Fundable Idea. Process and Mechanism for Successful Grant Preparation. Organizing Committee and Key Speaker, TMC

1993 Detection and Characterization of a Human Intracisternal A-type Retroviral Particle Antigenically Related to HIV, TMC

1993 Objective quantification of biological materials. Dept. of Microbiology and Immunology, TMC

1993 Objective Quantification in Immunohistology. NIDA/NIH Image Analysis Training Seminar. San Diego, CA

1993 Un Virus Nuevo Causante de Enfermedades Autoimunológicas Similares al SIDA. Pontificia Universidad Catolica Madre y Maestra. Santiago, The Dominican Republic

1993 El Maestro Como Estudiante, y El Método Cientifico Como Instructor. Colegio Padre Fortin. Santiago, The Dominican Republic

1993 Destino, Suerte o Persistencia. Autobiografía. Colegio Padre Fortin. Santiago, The Dominican Republic

1993 Accesory for Teachers on the Importance of Practical Laboratory Experience for Logical Thinking Development. Colegio Padre Fortin. Santiago, The Dominican Republic

1993 Round Table Discussion with Pathology Residents and Attending Staff on the Current Educational Problems Facing Academic Institutions with the Changing Health Care Environment. Sponsored by Pontificia Universidad Católica Madre y Maestra. Santiago, The Dominican Republic

1993 Color Thresholding in Electronic Light Microscopy. Anatomical Society of Great Britain and Ireland. Invitation from Professor Williams, Department Biomedical Science, The Univesity of Sheffield, U.K

1993 Expression of S-100ß in the Chick Inner Ear. Invitation from Prof. H-P. Zenner, Universitats-Hals-Nasen-Ohrenklinik Tübingen. Tübingen, Germany

1994 Caracteristicas Morfológicas de Células Infectadas por el HIV. Departamento de Medicina. Pontificia Universidad Catolica Madre y Maestra. Santiago, The Dominican Republic

1994 Ajuste Constante del Maestro al Cambio Constante de los Esdudiantes. Colegio Padre Fortin. Santiago, Colegio Ntra. Sra. P. Socorro, Nagua. The Dominican Republic

1994 Misión y Deversión. Colegio Padre Fortin. Santiago, Colegio Ntra. Sra. P. Socorro, Nagua. The Dominican Republic

1994 Round Table Discussion with Residents and Attending Pathology staff on the Potential Existing in the Dominican Republic for Certain Clinical Studies. Sponsored by Pontificia Universidad Catolica Madre y Maestra. Santiago, The Dominican Republic

1994 Consultant for Teachers on the Importance of Practical Laboratory Experience for Logical Thinking Development. Colegio Padre Fortin. Santiago, The Dominican Republic

1994 Consultant for Teachers on the Importance of Practical Laboratory Experience for Logical Thinking Development. Colegio Nuestra Sra. P. Socorro, Nagua, The Dominican Republic

Exhibit

Electron Microscopy Society of America Travel Exhibit. "Morphological Characterization of the Vestibular Nerve"

Others

Credit. 1986-1987 Electron Microscopy Catalog Supply, Ted Pella Inc., for use of TEM photo

Credit. Cover photo ASM News Vol. 57 (1991), February issue

Cover photo. J. Microscopy, Vol. 167 (1992), July issue

Cover photo. Hals-Nasen-Ohren (HNO), Vol. 41 (1993), May issue

Principal Research Interests

Ultrastructural changes of CD4 positive lymphocytes before and after HIV infection in culture. Internalization, processing, and extrusion of virus protein concomitantly with changes of the lymphocyte plasma membrane changes

Gene expression in brain tissues as the result of insulting the peripheral nerves and receptors

Cellular/ultrastructural changes in normal and induced anomalies of inner ear sensory organs, including neuronal degeneration

Objective quantification via computerized video microscopy using color thresholding as a key factor in evaluation changes in hues and intensities

Relationships that may exist between the development of the epithelia and gelatinous membranes of the inner ear

Effects of microgravity and zero gravity environment on the development of the inner ear (space station flights)

Cytodifferentiation of the sensory epithelia of the inner ear, with special interest in relation of synapse formation and morphologic refinement to onset of hearing function

Neuronal plasticity: Changes in peripheral and central components of the vestibular nervous system following ablation of inner ear end-organ or transection of eighth nerve branches

Miscellaneous activities:

1989	Scientific advisory support team for **Chix in space** project flown in the STS-29 Space Shuttle mission. Experimental design, specimen collection, and data analysis
2004	Mmber, board of director for the International Hospital for Children (www.theihc.org)
2004	Vice-president for the International Hospital for Children
	Various T.V., radio and newspaper interviews on science related projects

Patents:

5,344,774 (HIAP I)
5,364,756 (HIAP I)
5,580,772 (HIAP II)

Publications

Full Length Peer Reviewed Papers

1) Bongkun Choi, Paul J. Gatti, Cesar D. **Fermin**, Sandor Vigh Allyson M. Haislip and Robert F. Garry· Down-regulation of cell surface CXCR4 by HIV-1. Virology Journal 2008, 5:6 (In Press).

2) **Fermin**, CD and Garry, RF. Introduction to a MRT special volume on Virus and Neoplasia. **Microscopy Research and Techniqu**es, 68 (3/4): 115-119, 2005.

3) **Fermin**, CD and Garry, RF. Alterations of lymphocyte membranes during HIV-1 infection via multiple and simultaneous entry strategies. **Microscopy Research and Techniqu**es, 68 (3/4): 149-167, 2005.

4) Bastian, F, **Fermin**, CD. Slow virus disease: deciphering conflicting data on the Transmissible Spongiform Encephalopathies (TSE) also called prion diseases. **Microscopy Research and Techniqu**es, 68 (3/4): 239-246, 2005.

5) Dash, S, Salima Haque, S, Joshi, V, Prabhu, R, Hazari, S, **Fermin**, CD, Garry, RF. HCV-Hepatocellular Carcinoma, new findings, and hope for effective treatment **Microscopy Research and Techniqu**es, 68 (3/4): 130-120, 2005.

6) Cabrera-Batista, B, Skewes-Ramm, R, **Fermin**, CD, and Garry, RF. Dengue in the Dominican Republic, epidemiology for 2004. **Microscopy Research and Techniqu**es, 68 (3/4): 250-254, 2005.

7) Sander, DM, Sara Szabo, S, Gallaher, WR, Deas, JE, Thompson, JJ, Cao, Y, Luo-Zhang, H, Leonita, G, Liu, LG, Colmegna, I, Koehler, Espinoza, LR, Alexander, SS, Darren J. Hart, DH, Tom. D, **Fermin**, CD, Jaspan, JJ, Kulakosky, PC, Tenenbaum, SA, Russell B. Wilson, RB, and Garry, RF. Involvement of human intracisternal A-type retroviral particles in autoimmunity. **Microscopy Research and Techniqu**es, 68 (3/4): 222-234, 2005.

8) Sander, DM, Wolfsheimer, K, Gallaher, WR, **Fermin**, CD, Haislip, AM, and Garry, RF. Seroactivity to A-type retrovirus proteins in a subset of cats with hyperthyroidism. **Microscopy Research and Techniqu**es, 68 (3/4): 235-238, 2005.

9) Zhang, Z, Zhang, X, Avniel, WA, Song, Y, Jones, SM, Jones, TA, **Fermin**, CD and Chen, Y-P. The malleal processus brevis is pispensable for normal hearing in mice. *Developmental Dynamics 227:69-77, 2003.*

10) Ghosh, S, Mendoza, T, Ortiz, LA, Hoyle, GW, **Fermin**, CD, Brody, A, Friedman, M and Morris, GF. Bleomycin sensitivity of mice expressiing dominant-negative p53 in the lung epithelium. *Am J Respir Crit Care Med, 166:890-897, 2002.*

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APPENDIX I

NOTE ON SUPPORT: Just before **Katrina** in 1995, a Center Grant was funded to Dr. Prokop at the Tulane Health Sciences Center for Gene Therapy in which Dr. Fermin had support for an imaging core. Funding remained with Gene Therapy Center when Dr. Fermin moved to Tuskegee. In addition during the same time, NIH R01-DC006443-01 by S. Jones was funded and Dr. Fermin role had to be changed from Co-Pi to Consultant due to his move to Tuskegee.

PAST FUNDED AWARDS:

SOURCE: NIH/NINDS
TITLE: Differentiation and calcification of chick otolith
PI: Cesar D. **Fermin**, Ph.D. (50% effort)
DIRECT COST: $188,000 (9-1-85 to 8-31-89)
EXPLANATION: This project studied mechanisms of otoconia growth and mineralization in the chick embryo.

SOURCE: NASA
TITLE: Otoconia calcification Process
PI: Cesar D. **Fermin**, Ph.D. (20% effort)
DIRECT COST: $68,000 (9-1-85 to 8-31-88)
EXPLANATION: This project established the validity of chick embryo embryos as model to study gravity receptors in future space flights.

SOURCE: NASA
TITLE: Influences of synaptogenesis on the architecture of the vestibular epithelia
PI: Cesar D. **Fermin**, Ph.D. (20% effort)
DIRECT COST: $96,000 (9-1-88 to 8-31-91)
EXPLANATION: This project studied morphological transformation of afferent connectionsto vestibular receptors during development.

SOURCE: DRF
TITLE: Tritiated thymidine study of the chick (*Gallus domesticus*) inner ear

PI: Cesar D. **Fermin**, Ph.D. (10% effort)
DIRECT COST: $34,000 (9-1-85 to 8-31-88)
EXPLANATION: This project studied terminal mitosis of cells during development of the inner ear.

SOURCE: KFC
TITLE: Chix in Space
PI: Cesar D. **Fermin**, Ph.D. (5% effort)
DIRECT COST: $5,000 (9-1-88 to 8-31-91)
EXPLANATION: This project studied the temporal bones of chick embryos flowin in the space shuttle STS-29.

SOURCE: NIH/NINCD
TITLE: Vestibular compensation: Ultrastructure of Peripheral and Central vestibular systems.
PI: B. Alford, MD, Cesar D. **Fermin**, Ph.D. Co-PI. (50% effort)
DIRECT COST: $190,000 (9-1-81 to 8-31-88)
EXPLANATION: This was part of project grant to study Wallerian degeneration of the vestibular nerve and central nuclei with light and electron microscopy.

SOURCE: NIH
TITLE: Comparative study between the development of the utricular and lagenar maculae
PI: Cesar D. **Fermin**, Ph.D. (5% effort)
DIRECT COST: $6,811 (9-1-84 to 8-31-86)
EXPLANATION: This project studied mechanisms of otoconia growth and mineralization in the chick embryo.

SOURCE: NASA (Ames) NAGW-1516
TITLE: Influences of synaptogenesis on the architecture of vestibular epithelia
PI: Cesar D. **Fermin**, Ph.D. (10% effort)
DIRECT COST: $32,000 (4-1-91 to 3-31-92)
EXPLANATION: This study intends to analyze if synaptogenesis of afferents onto hair cells of gravity receptors.

SOURCE: NIH/NIDCD DC-00712-01
TITLE: Histamine storage and release: Role of synaptic body
PI: Paul Guth; Cesar D. **Fermin**, Co-PI (15% effort)
DIRECT COST: $117,277 (3/1/91 - 2/28/92)
EXPLANATION: Pharmacological and anatomical correlates of synaptic Structures involved in neurotransmission in the inner ear of the frog.

SOURCE: NASA
TITLE: Neuronal proteins before, during and after vestibular synaptogenesis
PI: C. **Fermin** (10%)
DIRECT COST: $43,532; $40,823; $43,315 (1/1/93 - 04/31/95
EXPLANATION: The goal of this work is to study MAP5, NF200 and S-100 proteins in developing chick inner ear nerve and structures and to determine their influence in the process of afferent synapse formation.

SOURCE: NIAID
TITLE: Involvement of a retrovirus in the cause of SLE (Subcontract)
PI: Gallaher (LSU) ; CD **Fermin** (10%), Co-PI
DIRECT COST: $208,980 (9/30/93-9/29/94).
EXPLANATION: To sequence retrovirus nuclei acids in SLE patient material and in cells co-cultured with patient biopsy material by PCR techniques, etc.

SOURCE: LBoR
TITLE: Centralized Imaging facility at Tulane
PI: C. **Fermin** (10%)
DIRECT COST: $75,000. - 06/31/98

EXPLANATION:	This a one year instrument grant to centralize imaging facility previously used primarily by Dr. **Fermin** Laboratory personnel and now being made available to other faculty in the medical school
SOURCE:	NIAID
TITLE:	Alterations of transport systems in HIV infected cells (competitive Renew).
PI:	Robert Garry, PhD
Co-PI	CD **Fermin** (20%),
DIRECT COST:	$130,925 (4/1/92-3/31/93).
EXPLANATION:	The goal of this project is to identify and characterize the proteins mediating HIV membrane attachment and cell killing including apoptosis.
SOURCE:	LBoR
TITLE:	Upgrading the Centralized Imaging facility at Tulane
PI:	**Fermin** (10%),
DIRECT COST:	$37,500 06/1/2000 - 06/31/2001.
EXPLANATION:	This is a one-year grant to upgrade the Centralized Tulane Imaging Center core created with a previous LBoR grant.
SOURCE:	NIH
TITLE:	Rapid screen for Ebola virus membrane interactions/drugs
PI:	**Robert Garry, PhD**
CO-PI:	**Fermin** (5%),
DIRECT COST:	$525,000 4/1/03 - 3/31/06.
EXPLANATION:	The major goal is to define membrane disruptive regions of Ebola virus glycoproteins.

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