Florez Becomes Chair of the National GRECC Directors Network

The leader of the Miami Geriatric Research, Education and Clinical Center (GRECC), Dr. Hermes Florez, was chosen to coordinate efforts among the 20 GRECCs in the Department of Veterans Affairs (VA). GRECCs are Centers of Excellence to improve the care of aging Veterans through innovative clinical, educational and research programs.

Population health will be one the areas of emphasis that Dr. Florez will be promoting in South Florida and nationwide. The VA is uniquely positioned to design and evaluate strategies to reduce the burden of age-related medical and mental diseases such as diabetes, cardiovascular disease, cancer, depression and dementia.

Among these conditions, diabetes affects one of every four Veterans and one third are at high-risk (with prediabetes) partly related to obesity, environmental and genetic risk factors. Dr. Florez and his team at the Miami GRECC are uniquely situated to promote strategies for the prevention and management of diabetes in Veterans and among minority aging populations. Through major efficacy and effectiveness trials funded by the VA and the National Institute of Health (NIH), the Miami GRECC team is testing these strategies in older Veterans and non-Veterans, in collaboration with other centers. In addition, Dr. Florez is promoting evidence-based guidelines for “care across the lifespan” of the Professional Practice
Committee of the American Diabetes Association. His team seeks better care for older adults with diabetes in different settings including outpatient care and long term care facilities.

The VA is approaching the milestone of the first half-million participants in the Million Veteran Program (MVP) nationwide, with almost 12,900 recruited in South Florida (out of 20,000), through efforts led by the Miami GRECC team. MVP offers unique opportunities for genomic and epidemiological studies that will inform health care delivery for Veterans and the US population-at-large. MVP investigators seek to provide individualized therapies based on the genetic profile that each patient has in alignment with the *Precision Medicine Initiative* promoted by President Obama, who stated that these efforts will “bring us closer to curing diseases like cancer and diabetes… and give all of us access to the personalized information we need to keep ourselves and our families healthier”.

The Miami GRECC will celebrate its 25th Anniversary on October 1, 2016. According to Dr. Florez, his team hopes to move from the “healthy bone – healthy body” to the “healthier aging” framework for the Veterans population and beyond.

**RESEARCH HIGHLIGHTS**

**Carlton S. Gass, PhD, ABPP-CP, ABAP,**
Director, Neuropsychology Clinic, Miami VA Medical Center and Adjunct Faculty, Departments of Neurology & Psychiatry, University of Miami School of Medicine joined the Neuroscience Center at Tallahassee Memorial Healthcare as a neuro-psychologist on May 30, 2016.

**Radhakrishnan Jayakumar, PhD,** was recognized by the Journal of Neurochemical Research as editorial board member for 2016.

The Journal of Neurochemistry is the leading source for current research worldwide on the molecular and cellular biology of the nervous system.

**Spencer Eth, MD,** Associate Chief of Staff for Mental Health, was a member of the Centers for Disease Control Research Cooperative Agreements Special Emphasis Review panel in Atlanta, GA.
Ignacio Gaunaurd, PhD, MSPT, Research Health Scientist, led a team of researchers from the Miami VAHS, University of Miami (UM), Uniformed Services University of the Health Sciences (USUHS), Henry Jackson Foundation (HJF), and the Walter Reed National Military Medical Center (WRNMMC) to collect balance and mobility data at the 2016 Amputee Coalition (AC) National Meeting in Greensboro, North Carolina. The data collection was a follow-up from last year’s data collection at the 2015 AC National Meeting in Tucson, Arizona. These research efforts, supported by the DoD/VA Joint Incentive Fund Project titled Mobile Device Outcomes-based Rehabilitation Program (MDORP) focused on further development of a machine learning classifier which will identify specific gait deviations typically present in individuals with lower limb loss, validate kinematic algorithms used by the Rehabilitative Lower Limb Orthopedic Accommodating-feedback Device (ReLOAD) system for temporal-spatial-gait assessment; and examine an instrumented timed “up and go” and balance test. The data will be used for implementation of the ReLOAD system during the MDORP’s home walking and exercise program for veterans and service members with lower limb loss. The research team consisted of Robert Gailey, PhD, PT; Vibhor Agrawal, PhD; Jennifer Lucarevic, PT, DPT, CDSS; Sheila Qualls, MPT; Natasha Crowther, MBA; Andrew Ortiz from UM and Miami VAHS; Allison Symmsack, PT, DPT from USUHS,HJF, and WRNMMC; 13 UM Doctor of Physical Therapy graduate students; and Marco Calcagno, CPO and Brittany Stresing, CPO, FAAOP from Limbionics of Raleigh and Durham. For the span of two days, the research team collected data on over 70 individuals with lower limb loss. Below is a picture of the team at the conclusion of data collection.
PRESENTATIONS

**Ignacio Gaunaurd, PhD, MSPT**, Research Health Scientist, was invited Faculty at the annual Federal Advanced Amputation Skills Training Program (FAAST). The FAAST Symposium was presented by the Department of Veterans Affairs Rehabilitation and Prosthetic Services, Employee Education System, and the Extremity Trauma and Amputation Center of Excellence (EACE). It took place from July 26th – 28th, 2016 at Fort MacArthur Los Angeles Air Force Base. Dr. Gaunaurd presented on the following: Mobile Device Outcomes-based Rehabilitation (MDORP) for Service Members and Veterans with Lower Limb Loss and was both a presenter and moderator for a panel discussion titled, Lower Extremity Prosthetic Restoration, Matching Technology and Potential. His fellow presenters and moderators were M. Jason Highsmith, PhD, DPT, CP, FAAOP (Deputy Director of Research for the EACE, Tampa, FL), Jeff Heckman, D.O. (Director of the Regional Amputation at the VA Puget Sound Health Care System, Seattle, WA) and Wayne Biggs, CPO (Director of Prosthetics and Orthotics at the VA Puget Sound Health Care System, Seattle, WA).

**Robert Gailey, PhD, PT**, Professor, Department of Physical Therapy at the University of Miami and Ignacio Gaunaurd, PhD, MSPT, Miami VAHS Research Health Scientist, presented an education symposium at the 2016 American Physical Therapy Association (APTA) Combined Section Meeting in Anaheim, California in February 2016. The symposium, sponsored by the Federal Section of the APTA, addressed *Evidence-Based Amputee Rehabilitation to Maximize Prosthetic Performance*.

**Geriatric Research, Education, and Clinical Center- GRECC**

**Christie M Hogue, DDS**, GRECC Investigator, presented her work titled *Cultural Beliefs of South Florida Community Dwelling African American Veterans Regarding Their Oral Health*, at the Institute for Healthcare Advancement (IHA) 15th Annual Health Literacy Conference in Anaheim CA in May 2016. Other GRECC investigators on this presentation included C Karanam, MD, S Akkineni, MD, D Cevallos, MD, R Anam, MD, AD Andrade, MD, and JG Ruiz, MD.
Dr. Hogue also presented her work titled *Anti-aging bias and Self Reported Oral Health of Community Dwelling Veterans*, at the annual meeting of the American Geriatrics Society in Long Beach, CA in May 2016. Other GRECC investigators on this presentation included AD Andrade, MD, C Karanam, MD, S Akkineni, MD, D Cevallos, MD, R Anam MD, Beaulaurier, R, and JG Ruiz, MD.

**Medhi Wangpaichitr, PhD**, Research Scientist at Miami VA Research Service and Research Assistant Professor of Surgery at University of Miami was invited by the Directors of the Biomedical Laboratory and Clinical Sciences Research and Development Services (BLRD and CSRD) to present his work entitled *Exploiting ROS and Metabolic Differences to Selectively Kill Cisplatin Resistant Lung Cancer* at CADE meeting in Washington, DC on July 25-27, 2016. Dr. Wangpaichitr discovered that cisplatin resistant (CR) lung cancer cells, regardless of the signaling pathway, share one common parameter which is increased reactive oxygen species (ROS) when compared to their parental (P) cells counterpart. Importantly, he found that CR cells were no longer committed to the glycolytic pathway, but rather relied on oxidative metabolism (OXMET) for energy and biosynthesis. CR cells possessed significantly higher number of mitochondria per total cell area (p=0.0006) and also consumed 3-4 fold more oxygen. Key glycolytic enzymes hexokinase-2 and lactate dehydrogenase A (LDHA), as well as lactate production, were decreased. CR cells took up twice as much L-[G-\(^{3}\)H] glutamine (n=8, p<0.05) and were highly sensitive to glutamine deprivation compared to their parental cells. Glutamine can be converted to glutamate which is essential to generate glutathione (GSH) in the presence of cysteine to counter high ROS. Alteration of mitochondria, which resulted in higher ROS and metabolic switch found in CR cells, can be exploited to selectively kill CR cells.

**PUBLICATIONS**

**Endocrine, Polypeptide and Cancer Institute**

Abstract:

Beta cell replacement to supply the body with cells producing insulin is considered one of the most important alternative approaches to the treatment of diabetes. Transplantation of human islets and the resulting progressive improvement of clinical results confirm the approach as a positive trend in this field. Recent progress in beta cell differentiation, deriving from many types of pluripotent stem cells, has potentially provided an unlimited source of β cells for research and clinical applications. Novel approaches are needed to make cell-based therapy safer, reproducible, and long-lastingly efficient. For example, pretreatment of the islet cells with agonists of growth hormone-releasing hormone improves cell proliferation and metabolic functions and facilitates engraftment of islets after transplantation in rodents. Dr. Schally’s team review current progress in islet transplantation and studies using stem cell-derived insulin-producing β cells as therapeutic options in the treatment of diabetes.


Mehdi Mirsaeidi, MD, Hooman Motahari, Mojdeh Taghizadeh Khamesi, Arash Sharifi, Michael Campos, and Dean E Schraufnagel. Climate Change and Respiratory Infections. 14 Jun 2016 DOI: 10.1513/AnnalsATS.201511-729PS

Abstract:

The rate of global warming has accelerated over the past 50 years. Increasing surface temperature is melting glaciers and raising the sea level. More flooding, droughts, hurricanes, and heat waves are being reported. Accelerated changes in climate are already affecting human health, in part by altering the epidemiology of climate-sensitive pathogens. In particular, climate change may alter the incidence and severity of respiratory infections by affecting vectors and host immune
responses. Certain respiratory infections, such as avian influenza and coccidioidomycosis, are occurring in locations previously unaffected, apparently due to global warming. Young children and older adults appear to be more vulnerable to rapid fluctuations in ambient temperature. For example, an increase in the incidence in childhood pneumonia in Australia has been associated with sharp temperature drops from one day to the next. Extreme weather events, such as heat waves, floods, major storms, drought, and wild fires are also thought to change the incidence or respiratory infections. An outbreak of aspergillosis among Japanese survivors of the 2011 tsunami is one well-documented example. Changes in temperature, precipitation, relative humidity, and air pollution influence viral activity and transmission. In early 2000, an outbreak of Hantavirus respiratory disease was linked to a local increase in the rodent population, which in turn was attributed to a 2- to 3-fold increase in rainfall prior to the outbreak. Climate-sensitive respiratory pathogens present challenges to respiratory health that may be far greater in the foreseeable future.

**Geriatric Research, Education, and Clinical Center- GRECC**


Oncogene 2016 Feb 22 [Epub ahead of print]


EVENTS

Miami Celebrates 8th Annual VA Research Week

As part of the 2016 National VA Research Week, the Research Service hosted the eighth annual Miami VA Research Day Poster Session on May 10. Posters representing the work of numerous investigators were displayed in the T.C Doherty Auditorium. Investigators, presenters, judges and other attendees discussed their work and its significance to veterans. The poster session was an ideal time for communications with academic partners and an opportunity for researchers to exhibit their findings and share ideas.

Thirty-seven abstracts were submitted in the categories of Basic Science, Clinical Science/Health Services and Young Research Investigator. The winners were:
<table>
<thead>
<tr>
<th>First Place Basic Science Presentation</th>
<th>First Place Clinical Science Presentation</th>
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<tr>
<td><strong>Arunugam Jayakumar, PhD</strong></td>
<td><strong>Carmen Guanipa, MD</strong></td>
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<td>Studies in Experimental Chronic Traumatic Encephalopathy: <em>In Vitro and In Vivo Observations</em></td>
<td>Million Veteran Program: <em>A partnership with Veterans</em></td>
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<td><strong>Miriam Zylberglait Lisigurski, MD</strong></td>
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<td>Frailty and health care utilization in older community dwelling Veterans</td>
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<tr>
<th>Honorable Mention Basic Science Presentation</th>
<th>Honorable Mention Clinical Science Presentation</th>
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<tr>
<td><strong>Luis Salgueiro, DVM, PhD</strong></td>
<td><strong>Shiija Geng, MS</strong></td>
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<td>Multifunctional magneto-electric-nanoparticles cross blood brain barrier to deliver anti-tumor GHRH antagonist peptide to glioblastoma cells with on-demand release</td>
<td>The use of supervised support vector machine for detection of gait deviation in lower limb amputees</td>
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<th>First Place Young Investigator Basic Science Presentation</th>
<th>First Place Young Investigator Clinical Science Presentation</th>
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<tr>
<td><strong>Ying-Ying Li, PhD</strong></td>
<td><strong>Chandana Karanam, MD</strong></td>
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<tr>
<td>BRAF inhibitor resistance reprograms metabolic and survival pathways to sensitize melanoma cells to arginine deprivation</td>
<td>Reducing 30-day readmissions in older veterans: A pilot quality improvement (QI) project</td>
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<tr>
<td><strong>Jacqueline Machi, PhD</strong></td>
<td><strong>Jimmy Rivadeneira, MD</strong></td>
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<td>Exercise Training Improves Cardiac Function in Mice Exposed to a Model of Gulf War Illness: Combined use of Corticosterone and Diisopropylfluorophosphate (DFP)</td>
<td>Microvascular perfusion is related to the Framingham score</td>
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<td><strong>FUNDING</strong></td>
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<td><strong>Nancy Klimas, MD</strong>, was awarded a CSR&amp;D Merit Review for her project <em>A Randomized, Double-blind Placebo-controlled Phase III Trial of Coenzyme Q10 in Gulf War Illness</em>. The award is for the period of July 2016 to June 2019 with a funding amount of $3,088,090. In addition a BLR&amp;D Shared Equipment Evaluation Program (ShEEP)/Laboratory Animal Major Equipment Program (LAMb) award was awarded to Nancy Klimas, MD, for the amount of $593,066 for the acquisition of a MoFlo™ AstriosEQ Cell Sorter.</td>
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<td><strong>Niramol Savaraj, MD</strong>, was awarded a BLR&amp;D Merit Review for her project <em>Overcoming BRAF and MEK Inhibitors Resistance in Advanced Melanoma</em>. The award is for the period October 2015 to September 2019 with a funding amount of $593,155.</td>
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<td><strong>Michael Norenberg, MD</strong>, was awarded a BLR&amp;D Merit Review for his project <em>Chronic Traumatic Encephalopathy: Role of Astrocytes</em>. The award is for the period October 2015 to September 2019 with a funding amount of $599,392.</td>
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<td><strong>Anat Galor, MD</strong>, GRECC investigator, was awarded a VA Merit Review for her project <em>Neuropathic Pain: A Critical Missing Piece in Dry Eye?</em> The award is for the period January 2016 – December 2020, with a total funding of $649,800.</td>
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Priyamvada Rai, PhD and Kerry Burnstein, PhD, GRECC investigators, were awarded a Department of Defense / Prostate Cancer Research Program (DoD/PCRP) grant for their project *Redox stress-mediated inappropriate androgen receptor elevation as a novel treatment paradigm for castration-resistant prostate cancer*. The award is for $750,000, with duration of October 2016 - September 2019.

**SOUTH FL VA FOUNDATION FOR RESEARCH & EDUCATION, INC.**

**Executed Cooperative Research and Development Agreements**

**Sponsor:** SyntheractHCR, CT CRADA  
**Project:** *A randomized open-label multicenter study of Liposomal Amikacin for Inhalation (LAI) in adult patients with nontuberculous mycobacterial (NTM) lung infections caused by mycobactetium avium complex (MAC) that are refractory to treatment*  
**PI:** Medhi Mirsaeidi, MD

**Sponsor:** Conatus Pharmaceuticals Inc, CT CRADA  
**Project:** *A Multicenter, Randomized, Double-blind, Placebo-Controlled Trial of Emricasan, an Oral Caspase Inhibitor, in Subjects with Non-alcoholic Steatohepatitis (NASH) Fibrosis*  
**PI:** Lennox Jeffers, MD

**Sponsor:** AOTI, LTC, Device CRADA  
**Project:** *A Multi-national, Multi-center, Prospective, Randomized, Double Blinded, Placebo-controlled Trial to Evaluate the Efficacy of Cycling Topical Wound Oxygen Therapy (TWO2) in the Treatment of Chronic Diabetic Foot Ulcers*  
**PI:** Jimmy Trang, MD

**CRADAs Under Negotiation**

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<th>Sponsor</th>
<th>Principal Investigator</th>
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<td>United Therapeutics, Inc</td>
<td>Michael Campos, MD</td>
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<td>BIPI</td>
<td>Niramol Savaraj, MD</td>
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<td>Sanofi</td>
<td>Niramol Savaraj, MD</td>
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<td>Second Sight Medical Products</td>
<td>Ninel Gregori, MD</td>
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<td>Asahi Kasei Pharma America Corp.</td>
<td>Roland Schein, MD</td>
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Miami VA Healthcare System.
To view past issues, visit http://sfvafre.org/newsletter.php

Submissions
Faculty and staff submissions can be e-mailed to the
Office of Research Communications at
iperez4@med.miami.edu or Isabel.Perez1@va.gov.

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