

Dra. Catherine M. Hulshof, Departamento de Biología

Plant Diversity and function in tropical dry forests of Puerto Rico

Plant functional traits are an integrative measure of plant fitness in different environments and strongly impact ecosystem processes. The diversity of plant functional traits across environments also provides insight into community assembly and species coexistence. Despite the utility of trait-based studies, most research has emphasized trait patterns in temperate, Mediterranean, or tropical moist forest ecosystems. Surprisingly, few studies have quantified patterns of functional trait diversity in tropical dry forests.

This study will quantify the diversity and function of plant species in tropical dry forests of Puerto Rico. In so doing, this study will establish a baseline of methodologies and sampling strategies and will become the template for collaborating with scientists from other Caribbean islands. On the one hand, tropical dry forests are characterized by pronounced seasonality in precipitation and high inter-annual rainfall variability which should lead to adaptations to drought and limited water supply. On the other hand, insularity may impose additional constraints on the diversity of plant function. Other lines of evidence suggest that insular tropical dry forest are strikingly different from mainland tropical dry forests. The proposed research project will elucidate these differences as well as how precipitation, seasonality, and insularity influence plant functional diversity in Puerto Rico and the Caribbean.

Dr. Benajmin Van Ee, Departamento de Biología

Untangling the relationships and radiation of Old World Croton (Euphorbiaceae)

Croton is one of the world's largest plant genera, and its great number of species, worldwide distribution, and a history of few specialists working on it have resulted in limited knowledge about it. In this project, faculty, graduate, and undergraduate researchers are investigating the dispersal path and diversification rates of approximately 450 species of Croton from across Asia and Africa, particularly in the biodiversity hotspot of Madagascar. The project will produce online accounts for Madagascan species. Students are being trained in developing a DNA barcode database that will serve as a tool for identifying specimens. This collaborative project will broaden the experiences of the undergraduate participants while establishing a network of researchers dedicated to overcoming the obstacles presented by large, diverse, and poorly known groups of organisms. It is designed to stimulate interest in plant biology among future scientists by integrating undergraduate students into all aspects of the research. In the fall 2014 semester there were three undergraduate students registered for BIOL 4901 working on this project, and in the Spring 2015 semester there were seven students registered for BIOL 4901 and 5 for BIOL 4902. Efforts are underway to recruit a graduate student to work on the project.

Dr. Wilford Schmidt, Departamento de Ciencias Marinas

Development of an free-vehicle sediment sampler for the Muertos Trough and Puerto Rico Trench

Although twelve people have walked on the Moon and spacecraft are now exploring our solar system and beyond, very little in situ sampling of the Earth's oceanic trenches has occurred. Their general geographic remoteness and extreme bottom-pressures have made all sampling difficult. Cable lengths needed make tethered sampling cost- prohibitive, and problematic in terms of successful data acquisition. Recent autonomous, remotely-operated, and free-vehicle sampling attempts have proved equally technically difficult and expensive. However, developments in the manufacture of glass housings offer scientific investigators and engineers the opportunity to sample the Earth's deepest trenches at a fraction of the cost of previous methods {Schmidt and Siegel, 2011, Eloë, et al., 2011}. A partnership formed in 2006 between the University of Puerto Rico, Mayagüez, Department of Marine Sciences (UPRM/DMS) and the University of California, San Diego's Scripps Institution of Oceanography (UCSD/SIO), began to develop and deploy new instruments to explore the deep Muertos Trough and the ultra-deep Puerto Rico Trench, the deepest part of the Atlantic Ocean and the seventh deepest trench on Earth. This "proof of concept" project laid the groundwork for modern, low-cost, untethered free-descent/ascent exploration. Here we propose to extend this work by developing the free-vehicle sediment sampler prototyped here at UPRM.

Dr. Carlos I. Hernández-Hernández, Departamento de Ciencias Sociales

Historia y memoria: Del CAAM al RUM, la Internacionalización del Recinto Universitario de Mayagüez, Una mirada a la huella del Recinto Universitario de Mayagüez de la Universidad de PR en el éxito académico y profesional de los profesores y estudiantes becados, (1960-2010)

Le informo que como parte del proyecto de investigación, titulado: Historia y memoria: Del CAAM al RUM, la internacionalización del Recinto Universitario de Mayagüez, Una mirada a la huella del Recinto Universitario de Mayagüez de la Universidad de Puerto Rico en el éxito académico y profesional de los profesores y estudiantes becados, (1960-2010), me reuní con el Decano interino de la Facultad de Artes y Ciencias, el doctor Manuel Valdés Pizzini, el martes 3 de marzo de 2015, para solicitarle una ayuda económica relacionada a un viaje que realizará a la Republica Dominicana. La respuesta del señor Decano fue en la afirmativa, razón por la cual habré de presentar los documentos necesarios que exige nuestra institución para llevar a cabo dicho viaje investigativo. El viaje en cuestión se realizará durante el receso académico de la Semana Santa del 22 al 28 de marzo de 2015 y tiene como propósito hacer entrevistas a los estudiantes de origen dominicano egresados del Recinto Universitario de Mayagüez de la Universidad de Puerto Rico.

Con esto en mente se filmaran y grabaran a los egresados que en muchos casos fueron becados para continuar estudios superiores. Se tomarán los testimonios de los entrevistados para evidenciar como las ayudas económicas tuvieron un impacto considerable, no solo al nivel socio-económico sino como producto cultural en la medida que muchos de los graduados se convirtieron en excelente profesionales de la República Dominicana.

Dra. Carmen M. Rivera Villegas, Departamento de Estudios Hispánicos

Antología y cuaderno de Poesía Puertorriqueña

Antología de textos poéticos representativos del género desde sus inicios hasta la primera década del siglo XXI, dirigida al público universitario de Puerto Rico, particularmente al estudiantado del Recinto Universitario de Mayagüez, único recinto del sistema que tiene dentro de su oferta curricular un curso de Poesía Puertorriqueña a nivel subgraduado. Dicha antología contaría con ejercicios dirigidos a fortalecer las siguientes destrezas: comprensión lectora y oral, producción escrita, interpretación de textos poéticos y, particularmente, el proceso de la imaginación como parte de un sistema de pensamiento crítico alternativo. Esta antología se dividirá temáticamente considerando textos canónicos y no-canónicos de manera que también sirva para establecer un diálogo por medio del cual se aprecie la diversidad de idearios, discursos, modelos estéticos y valores éticos dentro de la expresión literaria de nuestro país a través del tiempo.

Dr. Francisco García-Moreno Barco, Departamento de Estudios Hispánicos

Divulgación de la lectura y escritura a través de la novela El Secreto de El Guerrero del Antifaz

A lo largo de este semestre disfruto de una descarga académica de tres créditos con la cual he estado recopilando material audiovisual que sirva como trasfondo histórico y cultural para la lectura de mi novela recientemente publicada El secreto de El Guerrero del Antifaz. Este material se pondrá en línea en la página de la editorial Calamar para que cualquier persona pueda usarlo como material de referencia.

El proyecto que presento para el próximo semestre pretende:

1- Llevar a cabo talleres para personal docente, tanto a nivel de Escuela Superior como de Universidad sobre el uso de la novela para presentar temas históricos, culturales y literarios y de redacción a partir de una novela juvenil, en este caso El secreto de El Guerrero del Antifaz.

2- Ofrecer presentaciones a estudiantes para poner en práctica diferentes ejercicios con el trasfondo de la lectura de la novela y el apoyo del material audiovisual recopilado.

El hecho de que el autor esté presente en la discusión de una obra motiva al estudiante a leerla previamente ya que podrá discutir diferentes aspectos (históricos, literarios, culturales) con él.

Dr. Jaime L. Martell Morales, Departamento de Estudios Hispánicos

El Carnaval Ponceño: más de un siglo de historia

En febrero de 1858, en la gallera de Don Benito La Guardia de Ponce, se celebró un baile de máscaras que fijó de una vez y para siempre la celebración del carnaval en el período pre cuaresmal. Estas celebraciones, anteriormente llamadas indistintamente fiestas de carnestolendas, bailes de máscaras o mascaradas, recuperan entonces la naturaleza pre cuaresmal que tenían en su origen. Esto ocurrió casi medio siglo antes de que Don Pedro Giusti, desde su “Paris Bazar”, lo hiciese en San Juan. Desde entonces, estas fiestas de carnaval

se caracterizan por su carácter popular, en el sentido de “no oficial”, y cronológico; aspectos que definieron e identificaron esta tradición que aún sigue celebrándose. El Carnaval de Ponce, siendo uno de los más antiguos de Puerto Rico, del Caribe y del continente, conserva muchos de los aspectos que caracterizaron su celebración desde antiguo. La investigación contempla una revisión del concepto del carnaval, desde sus orígenes; así como, una contextualización histórica en los ámbitos internacional, latinoamericano y nacional. El Carnaval Ponceño: más de un siglo de historia, además de examinar el carnaval en los contextos mundial, continental y nacional, y los primeros 150 años del Carnaval Ponceño; incluye una compilación fotográfica y testimonial.

Dr. Melvin González Rivera, Departamento de Estudios Hispánicos

Centro de Investigaciones Lingüísticas del Caribe (CILC)

La descarga académica propuesta tiene como propósito coordinar los proyectos del Centro de Investigaciones Lingüísticas del Caribe (CILC), así como desarrollar dos ediciones: un libro sobre la sintaxis de las lenguas del Caribe, y el libro "Lenguaje, poesía y la búsqueda del sentido"; y un libro de texto, "introducción al estudio de la gramática española", el cual podrá ser utilizado en el curso ESPA 3295 Gramática Española.

Dra. Alexandra Morales Reyes, Departamento de Estudios Hispánicos

Desarrollo lingüístico en niños de edad escolar que aprenden una segunda lengua como lengua extranjera

La adquisición de segundas lenguas en niños de edad escolar es un área donde aún las investigaciones son pocas, más limitados aún son los estudios de niños que aprenden dicha lengua en un contexto de lengua extranjera y no de inmersión como sería el caso de los niños que aprenden inglés en los Estados Unidos. Los datos proporcionados por estos hablantes no solo conducen a un mejor entendimiento de la adquisición de un segundo idioma en los niños, pero también nos ayuda en entender mejor la adquisición de la primera lengua y la adquisición de segundas lenguas por adultos. El objetivo principal del proyecto es estudiar las etapas iniciales así como el desarrollo lingüístico de niños que aprenden inglés como lengua extranjera. Como parte del estudio miraremos la adquisición del orden sintáctico, los determinantes, cópulas ser y estar, la morfología, así como también el desarrollo de la conciencia lingüística en la primera (i.e., español) y segunda lengua (i.e., inglés). Un conjunto de pruebas serán creadas y administradas para evaluar el conocimiento lingüístico de los niños. Este proyecto de investigación desea no solo ofrecer información valiosa a investigadores, sino también a maestros y administradores escolares.

Dr. Junqiang Lu, Departamento de Física

Study electronic properties of topological insulators for nanoelectronic applications

Topological insulators presents a novel state of matter and recently have attached extensive research interest in condensed matter physics and materials sciences. Such materials are insulating in the nature but with metallic edge states or surface states. In this project, we will

study the effect of surface orientation and effect of warping Hamiltonian on transport properties of helical surface electrons, which are modulated by electrostatic potentials, external magnetic fields and magnetization exchange fields. The results would provide theoretical support and physical model for designing nanoelectronic and spintronic devices based on topological surface states. The problems will be studied include: (1) the dependence of transport properties (transmission, shot noise, local density of states) on the surface orientation; (2) the effect of warping Hamiltonian on the tunneling time of surface electrons.

Dr. Sergiy Lysenko, Departamento de Física

Transient Optical Dynamics in Vanadium Oxides

In this project for 2015-2016 academic year we propose to investigate transient nonlinear optical properties of different vanadium oxides, particularly other than VO₂ (M₁-phase) studied before, such as V₂O₃, V₆O₁₃ and VO₂ (B-phase). The research objectives of this proposal are to investigate fundamental processes in ultrafast light-induced insulator-to-metal and metal-to-insulator phase transition dynamics in correlated oxides and elucidate the evolution of nonequilibrium structural and excited states dynamics upon photoexcitation. Part of the project will be focused on investigation of nonlinear optical properties of phosphate glasses with embedded Cu nanoparticles (collaboration with Prof. José Jiménez, University of North Florida). The proposed experimental research will gain knowledge and answer fundamental questions about the size-and morphology-dependent phase transition in vanadium oxides. The project will add to development of recently established research area in the Physics Department for investigation of correlated materials, nonlinear nanocomposites and low-dimensional structures. First experiments will be focused on light-induced phase transition in VO₂ and V₂O₃, and then similar experiments will be conducted for other oxides, such as V₆O₁₃. Analysis of light polarization will be applied. We expect to gain substantially new knowledge about ultrafast phase transition dynamics in these oxides. While well-known light-induced insulator-to-metal phase transition in VO₂ occurs due to photoexcitation of free carriers, the optical excitation of V₂O₃ at room temperature presumably results in a first-order metal-to-insulator transition due to photoinduced elastic strain. The first information about light-induced strain will be obtained for V₂O₃ thin films. These experiments will provide reliable data about light-induced strain fields in thin vanadium oxides films. This knowledge will be important to enhance understanding of ultrafast optical dynamics in other oxides, particularly VO₂ and V₆O₁₃, at different time scales. The educational impact of this project contributes in the area of nonlinear optics and condensed matter physics. The principles of education activity will be based on integration of scientific research and teaching. A personal training for graduate and undergraduate students will be made in experiment and data analysis. Two graduate and at two undergraduate students will participate in this project.

Dr. Sudhir Malik, Departamento de Física

CMS Forward Pixel Detector Upgrade Phase-2 and Run-2 SUSY analysis at the Large Hadron Collider at CERN

This proposal describes my research plan to request 33% release time (4 credit hours) during Fall semester of 2015 to continue my research on the CMS Experiment at the Larger Hadron Collider and LHC Physics Center (LPC) at Fermilab. The LPC is the hub of 48 US institutions (including UPRM) that collaborate on the CMS experiment. The collective US effort on CMS experiment is referred to as USCMS. The next two years are very important for the CMS Experiment. The LHC has started commissioning proton-proton collisions at the center of mass energy of 13 TeV called LHC Run-2. The CMS Experiment is correspondingly getting ready by taking cosmic ray data. The CMS is expected to start taking collision data in next 2-3 months. Another milestone during Run-2 would be installation of upgraded Pixel Detector in CMS (called Phase-2 Upgraded Pixel Detector) during the extended year-end technical stop at the end year. UPRM has responsibility in the construction this detector at Silicon Detector Faculty (Sidet) at Fermilab and later commissioning at CERN. I am also involved with SUSY analysis with collaborators at the LPC. The release time is essential to advance and enrich my physics interests in the CMS experiment and its future discoveries as well as positively impact the UPRM group involvement and commitment in the CMS Experiment. This is critical to my future funding prospects.

Dr. Thomas E. Miller, Departamento Geología

Developing a Systematic Framework of a Global Model to address public health concerns arising from Contaminant Transport in Karst Groundwater

Puerto Rico has the world's 2nd highest rate of pre-term births. The project PRoTECT (Puerto Rico Test Site for Exploring Contamination Threats), funded by NIEHS, is attacking the threat holistically: identifying its extent, its cause, and providing a technical solution.

An academic release is sought for:

-Extensive groundwater contamination is documented in the north karst aquifer of PR, with 16 Superfund sites. Modelling of contaminants has used flawed conceptual models of karst flow (Darcian instead of "Triple Porosity"). I have recently been asked to aid in setting up a more responsive groundwater monitoring program, as a result of several PRoTECT investigators participating in my karst field trip at the GSA Regional Meeting in San Juan, 2013.

-Public health issues related to karst aquifers are so complicated that NIEHS and PRoTECT are developing a systematic framework to address public health concerns globally, using PR as its study site at a 2016 conference set in San Juan. I have also been invited to serve: on this Planning Committee, as the keynote speaker, lead a 1Y2 day field trip (with a field guide), and participate in several academic presentations and posters of the conference, to be incorporated into a Conference Proceedings for wide distribution.

Dra. Ana Kothe, Departamento de Humanidades

Las brujas de Latrop: A Translation

Recently published in January of 2015 (Amazon Kindle and Create Space), *Las brujas de Latrop* is about students, witchcraft, fantasy, and fable. At the same time, it registers very

real and contemporary concerns about the well-being of a country and the personal development of young women. Like the best-selling young adult fiction it is part of (The Hunger Games, Harry Potter), this novel shows promise in delivering sequels. I would not be surprised if it became a movie. My project is to work with the author, R.U.M. graduate Yarimar Padua, and translate the book for a wider audience, both within academic institutions and beyond. By the end of the first semester, we plan to have $\frac{1}{2}$ to $\frac{3}{4}$ of the 274-page novel translated, and by the end of the 2015-2016 academic year, we hope to have the entire novel solidly translated with one polished chapter to present to possible publishers. I am also planning to present my work on the translation at the International Comparative Literature Conference in July 2016. This is a very exciting project that would help promote our campus, Mayagüez, and Puerto Rico.

Dr. Christopher Powers, Departamento de Humanidades

Demonic Logics of Modernism: Faust in the Caribbean

The proposed release time will be dedicated to the production of a scholarly essay, "Demonic Logics of Modernism: Faust in the Caribbean," to be submitted for publication to an academic peer-reviewed journal in the field of literary studies. The essay is a comparative study of one recent and one classic novel: *The Spirit of the Light* by the novelist Edgardo Rodríguez Julia (2010) and the German modernist Thomas Mann's 1947 classic *Doctor Faustus: The Life of the German Composer Adrian Leverkühn, as Told by a Friend*. Both novels are adaptations of the Faust legend, a pact with a devil-figure to achieve some sort of greatness, each with a focus on figures of modern artists and their search for expressive transcendence. Both novels project the aesthetics of what I call a "demonic logic" of modernism, an immanent motivating force that drives innovation in modernist art; music, in the case of *Doctor Faustus*, or the visual arts in the case of *The Spirit of the Light*, with theoretical implications for studies of modernism that my essay will explore. The essay is a companion to another essay, which I am currently completing with this semester's release time, "Francisco Oller for the Twenty-First Century," which has already led to the production of a conference presentation to be delivered at the "V Congreso Internacional de Literatura" in Arecibo, PR on March 19, 2015, a comparative reading of *The Spirit of the Light* with the novel Martorell's *wake* by the painter Antonio Martorell. The proposed project is a natural extension of work I undertook in 2013-14 in an endeavor supported by National Endowment for the Humanities, which included my translation into English of *The Spirit of the Light*.

Dra. Francés J. Santiago Torres, Departamento de Humanidades

Suzanne Césaire: Un legado intelectual de vanguardia

Esta investigación conlleva dos partes, primero es fundamental identificar y estudiar una serie de textos (correspondencia, ensayos y otros escritos) de, y sobre, Suzanne Césaire. Y en segundo lugar, la traducción del francés al español de sus siete ensayos publicados en la revista cultural y literaria *Tropiques*, entre 1941 y 1945, publicada en Fort-de-France, Martinica. Suzanne Césaire tuvo un rol activo en la publicación de la revista *Tropiques*, cofundada con su esposo, el gran poeta de Martinica, y principal proponente del movimiento de la Negritude, Aimé Césaire. El escritor de Guadeloupe, Daniel Maximin, nos dice en su más reciente texto dedicado a la obra escrita de Suzanne Césaire: "...ella es de esa generación de jóvenes antillanas conquistadoras de libertad y de

igualdad..." El pensamiento y las reflexiones vanguardistas que Suzanne Césaire expresa en sus siete artículos, se ubican en el seno de las discusiones sobre la identidad y los fenómenos culturales que transforman a los seres humanos marcados por el colonialismo. Sus aportaciones han pasado prácticamente desapercibidas por muchos años, y nunca se han traducido sus artículos al español. Sus ideas giran en torno a temas que se encuentran en el centro de importantes debates sobre: el poscolonialismo, la historia del Caribe, la cultura, la identidad, la hibridez y otros.

Dr. Jeffrey Herlihy, Departamento de Humanidades

Mapping Cultural Distance: Interdisciplinary Perspectives on the Cultures of Immigrant Communities

I am interested in the ways writers and artists think about cultural distance, migration, and travel, and my research projects investigate how those concepts are manifest in literature and art. My work in the 2015-2016 academic year will involve publishing two journal installments as guest-editor (Voces del Caribe and Interdisciplinary Literary Studies), working on the revisions of a monograph, and writing several articles. I am at work on a study that involves Hemingway's work and biography. "Cuba in Hemingway" is a treatise about how his writing, language, and identity were influenced by Caribbean cultures during his 20-year residence near Havana. I also plan to revise and submit an article on Cormac McCarthy's trilogy of novels (The Border Trilogy) that concern the US-Mexican border region.

A critical locus of my research explores a binding circumstance for all diaspora and migrant writing- cultural displacement-in order to elucidate the manner in which ethnic, linguistic, cultural, and social otherness might shape a person's sentiments, emotions, and self-perception. A theory on the structure of culturally displaced life argues that the distribution of certain aesthetic patterns (archetypes, motifs, and symbols) in both the literature and visual art of displaced individuals relate to the non-native status of the artist. It is my argument that much of the drama realized in migrant art and writing depends to a very important degree upon the implications of cultural distance. A foreign-to-the- protagonist scenario, far from being a mere exotic backdrop or cosmopolitan milieu, is often a motivating factor in character action, and the subtext of dislocation is often a catalyst of dramatic irony.

Dra. Lissette Rolón Collazo, Departamento de Humanidades

Cuerpos en fuga: otras memorias de resistencia antes, durante y después del franquismo

Este proyecto de investigación se propone recuperar las memorias de subjetividades marginadas por ser diferentes a la heterosexualidad a partir de un estudio de caso: el de Florencio/Teresa Pla Messeguer, alias La Pastora, Tereso o Durriti. Tereso, como este proyecto escoge llamarle para acentuar su intersexualidad, se dedicaba al pastoreo antes de unirse al movimiento maqui de resistencia a la dictadura franquista. Después de militar y participar activamente en esa forma de guerrilla, fue atrapadx y encarceladx (primero en una cárcel de mujeres y luego en una de hombres). Su genitalia ambigua supuso un reto a la imposición del binario de los dos sexos, toda vez que su oposición a la dictadura lx convirtió en unx enemigx público por partida doble.

Cuerpos en fuga: otras memorias de resistencia antes, durante y después del franquismo estudiará, también, las representaciones literarias e históricas de Tereso en contrapunto con un análisis del modo en que ciertos saberes -la medicina, la sicología y la ley, entre otros- se han enfrentado a la diversidad de los cuerpos y de las ideas desde 1930 a esta parte. De este modo, esta investigación rescatará su memoria y su voz silenciada en sintonía con la Ley para la Recuperación de la Memoria Histórica en España.

Dra. Serena Anderlini-D'Onofrio, Departamento de Humanidades

Islas Maravillas: EcoSexuality Education and Extensive Research at UPRM

This project addresses the vital crisis in Puertorican culture that constructs private and public sectors as enemies as an opportunity to move forward in eco-sustainable ways that generate win/win partnerships. The project summons the power of the ecosexual movement to converge the energies for a multi-cluster program in Ecosexual Education and Extensive Research based at the University of Puerto Rico, Mayaguez. The project will be lead by the author of the proposal, Dr. Serena Anderlini-D'Onofrio, and her aggregate teams. Its interrelated clusters include academic publications, translations, symposia, workshops, courses, community events, extended digital access, funding for health-related research, and collaborations with eco-sustainable small-business initiatives in the Area Oeste. These clusters are designed to manifest a convergence of energies to awaken the area Oeste, the Colegio, and the entire region that surrounds the University, to the experiences of ecosexual love naturally inspired by the gentle and caressing nature of the Caribbean. The project intends to generate sustainable solutions for all parties involved.

Dr. Gregory Stephens, Departamento de Inglés

A Comparative Inquiry into the Role of University GE Writing Courses

In preparing a comparative "vision statement" about the role of GE writing classes, I have dual purposes:

1) to address UPRM's needs, given its fiscal crisis; 2) to write a philosophical reflection about a wider legitimation crisis in higher ed, as to the currency of its traditional mission of helping shape engaged and informed citizens. This proposal was conceived in a collaborative context, and responds to colleagues on three levels. 1) Dr. Ricia Chansky has asked for my help in developing a new syllabus and curriculum for Advanced English, which would have more Caribbean content. However, the course was designed of and conceived of as an Introduction to Literature, more than a normative Freshman English service course. Instructors in these courses receive little to no oversight. The resulting syllabi, and actual instructions received by students, vary too widely, I would argue, for a GE service course. 2) Dr. Rosita Rivera has also expressed that she wishes me to help in restructuring Advanced English, in order to bring it into alignment with Arts & Sciences outcomes. 3) These have three elements which voice the traditional aim of GE courses of helping produce good citizens: H) "Appreciate the essential values of a democratic society and the role of the individual in such a society"; I) "Understand contemporary social, political and economic issues in a local and global context; L) "Be committed to improve the quality of life at both the personal and community level." Can

such ideals actually be enabled through writing courses? U.S. writing programs offer two models: 1) They design course structures on models normative in the composition field, and professors share a text and structure; 2) Many top-tier universities use a seminar approach, where instructors from a variety of disciplines develop specialized topics, which are taught in small group settings. My objectives are to find out two things about these writing programs: 1) how is their autonomy structured, and maintained? Why do participants feel the autonomy is necessary? 2) What are the relative strengths and weaknesses of each model? Which might function better at UPRM, or is either realizable? After answering those questions about U.S. writing programs, I have objectives specific to UPRM: 1) Develop through consultations with colleagues readings appropriate for Caribbean students:

2) Determine if there is achievable balance between the structure that writing programs maintain, and the research interests of instructors in those courses. More broadly, I want to articulate a philosophical statement about a current paradigm change in how writing courses are conceived of and practiced in contemporary universities.

Dra. Ricia Anne Chansky, Departamento de Inglés

Two books in auto/biography studies, contracted with Routledge

The purpose of this research release is to continue work on two books that are under contract with Routledge: *The Routledge Auto/Biography Studies Reader* and *Auto/Biography across the Americas*. In the fall 2015 semester, I plan to complete work on my first book, *The Routledge Auto/Biography Studies Reader*, a comprehensive theory reader that traces the three waves of scholarship in the field through foundations, transformations, and futures. This will be the first theory reader in the field and will join the Routledge theory reader series. In the fall 2015 semester, I will also make any necessary revisions to the prospectus for my second book, *Auto/Biography across the Americas*. I will continue to work on translations of the included essays, editing these essays, drafting my introduction to the book, and revising my included essay, "Between Selves: An Intertextual Approach to Jamaica Kincaid's *Among Flowers*." Arguing that all narratives of the Americas have a diasporic element to them, this text uses a transnational American studies approach to explore the themes of movement and belonging in auto/biographical narratives of the Americas, including North America, the Caribbean, and Latin America. This interdisciplinary text will be the first to explore transnational themes in auto/biographical narratives.

Dr. Leonardo Flores, Departamento de Inglés

The Electronic Literature Collection, Volume 3

My request for 3 credits release time per semester for the whole 2015-2016 academic year is to write, edit, produce, and publish the *Electronic Literature Collection, Volume 3* (ELC3) and to lead the co-authoring of a book on this and the two previous Electronic Literature Collections. Since my election as leader of the ELC3 Editorial Collective, opened a Call for Submissions, are now reading and evaluation the over 500 works submitted. We will finish selecting our works and notify the authors by May 2015 and will present a draft of our design for the ELC3, including sample metadata and editorial framing of the works, in the ELO conference in August 2015. During the Fall 2015 semester, I will work with the Editorial Collective to write the introductions

for approximately 80 works in the ELC3, create pictorial and video documentation for each work, compile source files from the authors, complete the design for the ELC3, and submit a grant proposal for the next stage: a book. During the Spring 2016 semester, we will publish the online version of the ELC3, produce and distribute the USB drive version of the ELC3, and begin work on a book on the three Electronic Literature Collections.

Dra. Flor E. Narciso Farias, Departamento de Matemáticas

Actualización del Componente Usuario del Modelo Diseñar la Interacción Humano-Computadora (MODIHC)

El Modelo para el Diseño de la interacción Humano-Computadora (MODIHC), permite diseñar todos los aspectos involucrados en la interacción entre un humano y una computadora cuando se están desarrollando productos de software. Este modelo consta de cuatro componentes denominados usuarios, ambiente de trabajo, tecnología y funcionalidad del sistema, los cuales están estrechamente relacionados entre sí. El objetivo de este trabajo de investigación es realizar una actualización al componente usuarios de MODIHC, a fin de realizar las modificaciones pertinentes en función del resultado de la evaluación del modelo realizado durante el semestre II 2014-2015, en la cual participaron dos estudiantes del curso MATE 4990. Cabe destacar que en los últimos años, MODIHC ha sido utilizado para diseñar la interacción humano-computadora de diferentes productos de software, los cuales han sido evaluados en trabajos de investigación previos.

Dr. Lev Steinberg, Departamento de Matemáticas

Mathematical Aspects of Fractal Modelling of Solid Mechanics

The proposed research is related to the continuum modeling of fractal in solid mechanics. This approach is essential for understanding the scaling nature of material structures and predicting mechanical behaviors of solids. The approach considers the material bodies as a subset of fractal continuum. For the fractal body deformation we will present the conservation laws of fractional mass, linear and angular momentum in terms of stress and couple stress of deformed fractal bodies. The constitutive formulas for the fractal deformation should include fractional derivatives. The body transformation will include the variation of characteristics of fractal dimension of internal material structure. We also assume that the forces responsible for these transformations are by definition the configuration stress and couple stress.

Dr. Rémi Megret Laboye, Departamento de Matemáticas

Development of Computational Perception in Multidisciplinary Research

The academic release time will be used for the development of the Computational Perception field of research at UPRM through (1) its application to wearable sensing and (2) its interaction with other scientific fields. Computational Perception is concerned with the development of models, algorithms and systems that enable computers to perceive high-level information concerning objects, scenes or physical phenomena from lower-level sensor data. It includes the application and the development of new methods at the intersection of Computer Vision, Data Analysis, Machine Learning and High Performance

Computing aimed at bridging the semantic gap between raw sensor data and their interpretation.

The work will be organized in two parts:

- First, the current research on wearable sensing has led to several published contributions. This work will be continued and expanded to take into account multi-sensor platforms, such as the ARA device from Google, for which Puerto-Rico is the first deployment site.
- Second, development of collaborative multi-disciplinary projects involving the application of the Computational Perception approach to new scientific fields will be pursued. One such collaboration has already started in the topic of Chemometrics, for the computational analysis of spectroscopic Near- Infrared images in relation with the Chemistry Department at UPRM.

Dra. Wildeliz Torres-Irizarry, Departamento de Química

Development of a metallocarbene-based methodology for the synthesis of epoxides

We propose to develop a new method for the synthesis of epoxide moieties from the reaction of metallocarbenes with aldehydes and ketones. We will generate the metallocarbenes from safe and readily available substrates rather than the commonly used diazocarbonyl compounds, which are toxic and potentially explosive. Inter and intramolecular variants of the methodology will be developed. The synthetic value of our method will be demonstrated by pursuing the synthesis of biologically relevant organic molecules. In the long term, an asymmetric version of this methodology will also be developed.