

## **ABSTRACT: 2016 ELAM Institutional Action Project Symposium**

**Project Title:** Build a Research Intensive Division of Neuroscience in the Burnett School of Biomedical Science.

**Name and Institution:** Cristina Fernandez-Valle, PhD, Professor and Head, Division of Neuroscience, Burnett School of Biomedical Science. College of Medicine, University of Central Florida

**Collaborators:** Juan Cendan, MD, Chair Department of Medical Education & Assistant Dean for Simulation and Professor of Surgery; Matthew Gerber, PhD Director of Knowledge Management, Deborah German, MD, Vice President for Medical Affairs and Founding Dean; Griffith Parks, PhD, Professor & Director Burnett School of Biomedical Science.

**Background, Challenge or Opportunity:** The Burnett School of Biomedical Science in UCF's College of Medicine has grown to over 50 faculty members conducting research in diverse areas including neurodegeneration, cancer, infectious diseases, inflammation, metabolism and cardiovascular diseases. In October 2015, the School was reorganized into five divisions: Neuroscience, Cancer, Molecular Microbiology, Immunity, and Metabolic and Cardiovascular Research. The impetus for the reorganization was to increase research productivity and foster a sense of community within the Divisions and School.

**Purpose/Objectives:** To build a strong Division of Neuroscience recognized locally and nationally for its federally funded basic and translational research on motor and cognitive disorders; its excellence in graduate and undergraduate neuroscience education, and its community outreach.

**Methods/Approach:** The ten year **research** aspiration of the Division of Neuroscience is to:

- expand from 7 core to over 20 core and affiliated faculty
- triple research funding with the goal of every investigator having federal funding
- increase research partnerships within UCF and across medical city; a key initial area is in neuroprosthetics with the biomedical engineering cluster
- establish effective programs for research success (mentorship, grant pre-submission review, team research, scientific editing; development of post-doctoral and non-tenure scientists)
- fund an endowed chair in neuroscience and recruit a scientist of distinction
- develop a revenue stream by creating a training hub for advanced imaging by partnering with Zeiss Microscopes and developing a Masters in Advanced Biomedical Imaging

**Outcomes and Evaluation Strategy:** Metrics will be tracked with a newly-developed digital Faculty Dossier using InfoPath software to create a longitudinal database of faculty activity reports. The data will be queried to generate semi- and annual reports to track individual and division progress toward its goals. These will be shared with faculty to assess individual and divisional progress toward benchmarks and individual standing within the division. Common metrics for research success will be tracked (publications, grant submissions and awards). Education metrics include number and type of student mentorship, publications, conferences, and time to graduate. Community metrics include participation in annual Neuroscience Open House and patient forum presentations. Effectiveness of programs designed to increase research success (mentoring, grant pre-submission review, collaborative research) will be tracked and improved as needed.

Cristina Fernandez-Valle, PhD Professor and Head of Division of Neuroscience, Burnett School of Biomedical Science

Collaborators & Mentors: Juan Cendan, MD, Chair Department of Medical Education, Assistant Dean for Simulation, Professor of Surgery  
Matthew Gerber, PhD, Director of Knowledge Management, Griffith Parks, PhD, Professor & Director Burnett School of Biomedical Science,  
Deborah German, MD, Vice President for Medical Affairs and Founding Dean, College of Medicine, University of Central Florida

Presented at the 2016  
ELAM® Leaders Forum

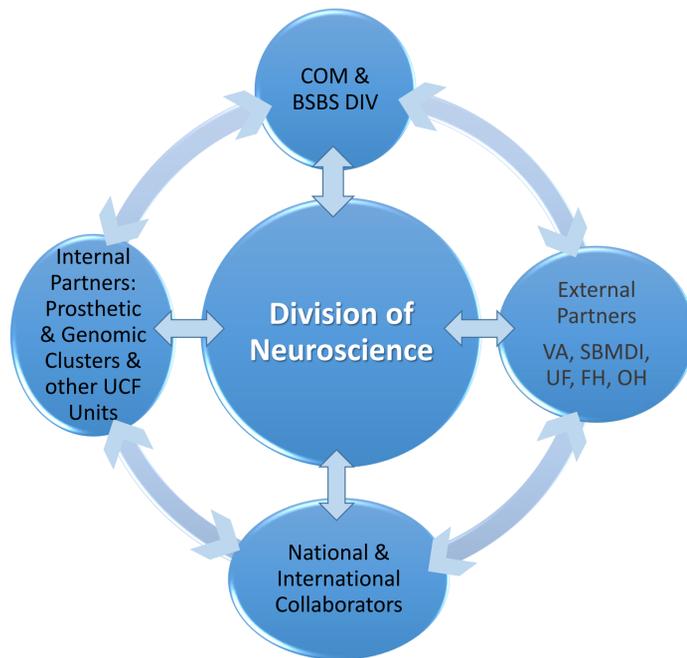
## Background & Opportunity

The Division of Neuroscience was created in October 2015. The goal is to build a model division that becomes nationally recognized for its federally-funded, team-based **translational and basic research on motor disorders**; excellence in undergraduate & graduate neuroscience education, and community outreach.

## Objectives

**Research Mission:** Work in highly-interactive, multidisciplinary research teams comprised of clinical, translational, and basic physicians/scientists to develop therapies for motor disorders and discover mechanisms causing such pathologies. Current areas of focus: ALS, PD, HD, CMT, NF, Myelinopathies.

## Approach and Strategy



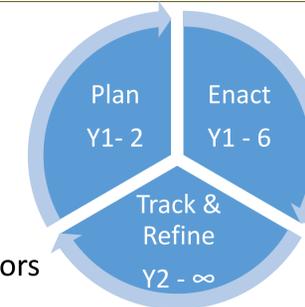
## Evaluation Strategy

- Use electronic Faculty Dossier (InfoPath/Microsoft) to longitudinally track faculty productivity & program success

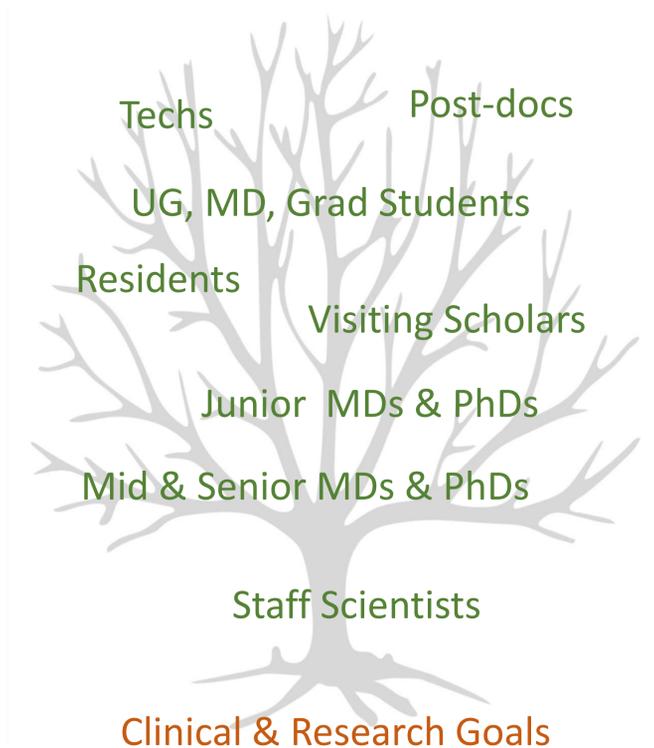
Metrics tracked:

- ✓ # grants submitted (multiple vs single PI; fed, found, state)
- ✓ # grants awarded (scores and dollars)
- ✓ Success rate of federal grants for previewed & edited vs not
- ✓ # of pubs (authorship rank, collab)
- ✓ # students (time to grad, pubs, placement)
- ✓ Division & Community engagement
- ✓ Mentoring Tree participation

Action	Goal	Partners & Resources
<b>PLAN &amp; GROW</b> the neuroscience research community	<ul style="list-style-type: none"> <li>• Recruit 9 core faculty</li> <li>• Add affiliated faculty</li> <li>• Add post-doctoral and non-tenure research scientists</li> <li>• Diversify workforce; internat'l scholars (Cuba &amp; Latin America)</li> </ul>	<ul style="list-style-type: none"> <li>• UCF Lines &amp; Start-up \$</li> <li>• COM, COE, CREOL, VAMC, UF, SBMDI</li> <li>• BSBS &amp; UCF</li> <li>• UCF Foundation, Global Strategies, BSBS</li> </ul>
<b>ENACT</b> funding success programs <b>TRACK</b> success & <b>REFINE</b> programs	<ul style="list-style-type: none"> <li>• Pre-submission grant review &amp; editing</li> <li>• Mentoring Family Trees</li> <li>• Support post-doc &amp; staff scientist development</li> <li>• Annual Retreat</li> <li>• Travel and Impact Awards</li> <li>• Recruit faculty of distinction</li> <li>• Electronic Faculty Dossiers</li> </ul>	<ul style="list-style-type: none"> <li>• Division</li> <li>• COM</li> <li>• BSBS/COM</li> <li>• Division/UCF</li> <li>• COM &amp; UCF</li> <li>• UCF/Benefactors</li> <li>• COM/UCF</li> </ul>
<b>ENGAGE</b> with community & <b>become SUSTAINABLE</b>	<ul style="list-style-type: none"> <li>• Video &amp; Website Development <a href="https://www.youtube.com/watch?v=S9pFnIcTrQM&amp;feature=youtu.be">https://www.youtube.com/watch?v=S9pFnIcTrQM&amp;feature=youtu.be</a></li> <li>• <a href="https://med.ucf.edu/biomed/divisions/neuroscience/">https://med.ucf.edu/biomed/divisions/neuroscience/</a></li> <li>• Annual Neuroscience Open House</li> <li>• Obtain Endowment</li> <li>• Training Hub for Advanced Biomedical Imaging (revenue stream)</li> </ul>	<ul style="list-style-type: none"> <li>• COM</li> <li>• BSBS &amp; Benefactors/Vendors</li> <li>• COM/UCF &amp; Community/Benefactors</li> <li>• Zeiss Microscopes, Inc</li> </ul>



## Research Teams & Mentoring Trees



Researchers & clinicians work as teams on focused goals, incorporate emerging technologies and ideas, and mentor each other

## Summary and Next Steps

**Phase One** : Implement programs, track success & refine programs as needed to increase faculty success & research outcomes

**Phase Two** : Sustain & Diversify Research (Years 5-∞)

- obtain an endowment by impacting community & developing recognition for research excellence
- create a revenue stream by partnering with Zeiss Microscopes to become a training hub for advanced biomedical imaging & establish a Masters in Biomedical Imaging for workforce
- Add Cognitive Neuroscience to research focus by recruiting faculty & partnering with internal and external partners