PFD RESEARCH FOUNDATION
The Official Research Foundation of AUGS

2016 Annual Report
Transforming lives through innovative and effective research for female pelvic floor disorders
The mission of the Pelvic Floor Disorders (PFD) Research Foundation is to transform the lives of women through the support of innovative and effective research that advances the prevention, treatment, and cure of female pelvic floor disorders.

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“\textit{The PFD Research Foundation afforded me the support that I needed to help launch my academic career and to gain prestige for additional sources of funding.}”

Anne Suskind, MD
2011 Thomas Benson Award in Neuromodulation Recipient
Every contribution to the PFD Research Foundation builds a stronger future for female pelvic medicine and reconstructive surgery and is a great way to honor the work and passion of those we respect.

A total of $132,128 in contributions was raised by individuals, corporate supporters, and partners in 2016.

This year, 259 individuals contributed to support the PFD Research Foundation, representing 14 percent of the AUGS membership.

Source of Funds

Corporate and Partner: 61%
Individual: 39%

Corporate and Partner contributions: $80,000
Individual contributions: $52,128
Total: $132,128

Grant Dollars awarded by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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Recent Grant Recipient AUGS Abstract Presentations

- # Grant Recipients
- Subsequent Abstracts Presented

The PFD Research Foundation, together with the June Allyson Foundation, has awarded more than $1.5 million in grants to American Urogynecologic Society (AUGS) members since 1997. The Foundation serves the medical profession by supporting promising, innovative research regarding the causes, prevention, treatment, and cure of pelvic floor disorders.

In 2016, the Foundation’s research funds were made available to qualified OB/GYN and urology fellows and junior faculty to pursue their research. The goals of this research grant program are to support the completion of research projects which will lead to publications and presentations at PFD Week (AUGS’ Annual Scientific Meeting) and to support the development of junior researchers in the field who will go on to obtain additional funding for future research on pelvic floor disorders.

In 2016, the Foundation offered the following grants:

**PFD Research Foundation Fellow Research Award**
A two-year grant awarded to a fellow for clinical/patient-oriented, educational, or lab-based/basic science research.

**June Allyson Memorial Fund Research Award**
A two-year grant awarded to a fellow for lab-based/basic science research.

**PFD Research Foundation and ICA IC/PBS Research Grant**
A two-year grant awarded to a fellow or a junior faculty member of AUGS and the Interstitial Cystitis Association (ICA) for research related to interstitial cystitis.

Additionally, the Foundation supported the **Jahnigen Career Development Award (JCDA)/GEMSSTAR** program given by the American Geriatric Society to an AUGS member.

### 2016 Grant Recipients

**PFD RESEARCH FOUNDATION FELLOW RESEARCH AWARD**
- Brian Linder, MD
  Mayo Clinic
  *Prediction of pelvic organ prolapse surgery outcomes with preoperative pessary use: a case-cross over study*

**JUNE ALLYSON MEMORIAL FUND RESEARCH AWARD**
- Jennifer Bickhaus, MD
  Duke University School of Medicine
  *Evaluation of host immune and extracellular matrix responses to sacrocolpopexy mesh on differential tension*

**PFD RESEARCH FOUNDATION AND ICA IC/PBS RESEARCH GRANT**
- Kristin Jacobs, MD
  Women and Infants Hospital
  *The female urinary microbiome in interstitial cystitis/painful bladder syndrome patients*

**JAHNIGEN CAREER DEVELOPMENT AWARD (JCDA)/GEMSSTAR**
- Tatiana Sanses, MD
  University of Maryland School of Medicine
  *Urinary Incontinence, Mobility and Muscle Function in Older Women*

Help support the PFD Research Foundation - Make a donation today! Visit [www.pfdresearch.org](http://www.pfdresearch.org).
Research Making a Difference

Over the past 18 years, the PFD Research Foundation has awarded more than $1.5 million in grants to AUGS members. We are proud to share the success of our grant recipients and how their research is advancing prevention, treatment, and the cure of female pelvic floor disorders.

In 2015 the PFD Research Foundation and ICA IC/PBS Research Grant was presented to Ana Charrua Cordeiro, MD, for her project Sympathetic Nervous System Dysfunction is a Trigger to BPS/IC Symptoms Development.

Study
In this study, our working hypothesis stated that the increase levels of plasmatic/urinary noradrenaline (NA) observed in BPS/IC patients induced bladder adrenoceptors (AR) overstimulation and, consequently, an abnormal activation of the bladder nociceptors, promoting changes in organ motility, compromising the urothelium, inducing inflammation and changes in the bladder microvasculature. The goal of the proposed research was to demonstrate that sympathetic nervous system overactivity induces chronic visceral pain, that induced BPS/IC-like bladder changes by activating bladder nociceptors. The study was expected to unveil a new pathophysiological mechanism of BPS/IC, to open new therapeutic opportunities in the future by presenting new targets for the treatment of chronic visceral pain. To induce a permanent overactivity of sympathetic nervous system, two models were used: water avoidance stress (WAS test) test in rats and maternal deprivation model (MDM test) in mice (Wild type and TRPV1 KO mice).

Results
This study demonstrated that chronic stress induced visceral pain was mediated by alpha 1A adrenoceptors, implicating the sympathetic nervous system in pain inducing mechanism. Chronic stress induces pain, frequency, and bladder histological changes in WT but not in TRPV1 KO. Specific alpha 1A adrenoceptor antagonists overcome bladder pain, opening a new therapeutic opportunity to treat chronic visceral pain. One paper has been published on this study, with two papers in various stages of the process. Although the initial questions/hypothesis have been answered, many others arose. For now, we are using small funding to gain more insights and answers.

Other Research Projects
I have been invited to participate in a consortium to perform a proposal of a European Project. This will allow me to continue the research that I have started with the PFD Research Foundation funded project.

“The work developed with this grant opened new opportunities of collaboration and also gave me the chance to start to consolidate my research.”

Ana Charrua Cordeiro, MD
Research Making a Difference

In 2013 the Thomas Benson Award in Neuromodulation was presented to Lauren Cadish, MD, for her project *Stimulation Latency Period and Optimal Cycling for Sacral Neuromodulation Patients.*

**Study**

In this two-part study, we sought to define how long sacral neuromodulation users with overactive bladder should trial a new setting before treating symptoms to that setting. Subsequently, we evaluated patient preferences of variable stimulation regimens. In the initial phase of this perspective pilot study, participant’s devices were turned off and later reactivated. Time to symptom recurrence and resolution were recorded. In phase II, participants trialed for settings in a masked fashion with random order. After unmasking, participants chose their preferred setting and were followed for one year.

**Results**

Twelve subjects completed phase one. With the device off, the mean time to symptom recurrence was 11.25 days. Mean time to symptom regression following reactivation was 6.42 days. Combined, the 90th percentile was 15 days for symptoms to reflect the devices new setting. Among 23 women completing part two, the most popular setting at the time of unmasking was one hour on, two hours off cycled setting chosen by seven (30%) participants. According to polish estimates a battery longevity, 14 (61%) participants chose a more energy conserving setting at the time of unmasking. The main difference in estimated battery longevity between the chosen and baseline regimens was 14.5 months. These gains diminished in the following year with clinical changes and device settings by patients and providers. Sacral neuromodulation patients should allow a two-week trial before attributing their symptoms to a new setting. With additional information, patients may opt for energy conserving settings. A regiment of one hour on, two hours off warrants further study. This study was published in 2016 in *Neurourology and Urodynamics.*

**Other Research Projects**

Receiving this grant has provided further insights on how grant-funded research is conducted. It has allowed me to go to the AUGS grant recipient luncheon each year, where I have heard interesting speakers including those who work for some of the agencies that give large federal grants. It has also provided me with the means to conduct the project that I plan to discuss when I take my FPMRS oral boards. I am currently working on multiple research projects and publications.

“Receiving the grant gave me greater confidence in my own abilities as a researcher, as well as further insight on how grant-funded research is conducted.”

Lauren A. Cadish, MD, FACOG
In 2014 the Thomas J. Benson Award in Neuromodulation was presented to Robert S. Kelley, DO, for his project *Electrophysiologic Mapping of the Urinary Bladder*.

**Study**

I used the grant to conduct a pilot study to evaluate the feasibility of using diagnostic cardiac electrophysiology catheters for recording intrinsic urinary bladder electrical activity and for electrical pacing capture of bladder tissue. During cystoscopy, a curved quadripolar catheter was introduced and contact was made with the right and left halves of the dome and trigone in adult female patients. Electrical activity was recorded, using a commercially available cardiac electrophysiologic recording system, before and during pacing.

**Results**

Apparent spontaneous electrical depolarizations were detected in both the trigone and the dome. The amplitude of these depolarizations was in the microVolt range. During pacing, local electrical capture was noted in the trigone, but not in the dome. While these low-level signals could represent noise, the voltage and morphology resemble detrusor muscle action potentials previously seen in animal studies. In 2016, the results were published in *Neurourology and Urodynamics* and were the basis of my fellowship thesis.

Following these results, I will be expanding upon this pilot data to test more complex cardiac catheters and mapping equipment in the bladder. The aim is to see if a map of localized electrical activity may reveal areas of interest in patients with over or underactive bladder. This may provide more targeted therapy for these conditions. I have received additional funding in the form of a junior faculty grant from SUFU.

**Other Research Projects**

The PFD research project has started me on a pathway to exploring electrophysiology in different avenues of urogynecology and general OBGYN. Since commencing the study I have looked at optogenetics as a peripheral neuromodulator in a mouse model of bladder pain/overactive bladder. At Emory University, I have joined forces with neurobehavioral scientist to explore this technique in other animal models including one for autism spectrum disorders. Questions about the interplay between anatomy, electrophysiology, and fluid dynamics gave rise to work on bladder modeling. I am currently working with Georgia Institute of Technology scientists to construct these dynamic models. The occult malignancy and morcellation controversy led to a Clinical and Translational Science Award from National Institutes of Health (NIH) to study bioimpedance sensors for preoperative detection. I am currently the physician advisor for a Georgia Tech Biomedical Engineering capstone project investigating the possible use of electrophysiology methods for improving detection and treatment of preterm birth.

“The Thomas J. Benson Award in Neuromodulation gave me the seed funding to establish not only pilot data, but my career in academic urogynecology and for that I am grateful.”

Robert S. Kelley, DO
PFD Research Foundation Legacy Circle

The PFD Research Foundation is known for providing research support to advance the science of Female Pelvic Medicine and Reconstructive Surgery (FPMRS). Our success is a direct result of the dedicated group of individual and corporate donors that have supported the Foundation over the past eight years.

To recognize the efforts of our dedicated individual donors we have created the Legacy Circle. The Legacy Circle is the most prestigious level of recognition by the Foundation, as it acknowledges those who have given over $25,000 in cumulative donations or designated the Foundation in their estate planning.

The term legacy was specifically chosen because of its meaning to reflect anything handed down from a predecessor, either a gift or a significant contribution to history. Without the legacy of these donors, the PFD Research Foundation would not have experienced continued success.

2015 Legacy Circle Members

Linda Brubaker, MD, MS  
Loyola University Chicago  
Maywood, IL

Andrew P. Cassidenti, MD  
St. Joseph's Hospital  
Orange, CA

Vincent Lucente, MD, MBA, FACOG  
The Institute for Female Pelvic Medicine  
Allentown, PA

2016 PFD Research Foundation Donor of the Year Award

The PFD Research Foundation presents the Donor of the Year Award to an individual in recognition of commitment to the Foundation’s mission of transforming the lives of women through the support of innovative and effective research that advances the prevention, treatment, and cure of female pelvic floor disorders.

Kristinell Keil, MD
The PFD Research Foundation Board of Directors wishes to congratulate the 2016 recipient, Kristinell Keil, MD, a past Foundation chair, and recognize her for her generous donations to the Foundation, as well as her commitment and creative approach to fundraising.
Thank You to Our Corporate Supporters and Partners

The PFD Research Foundation Research Grants Program is made possible through the generous support of our corporate supporters and partners. In 2016, the Foundation raised $80,000 in donations from these supporters.

Partners:

Corporate Supporters:
Thank You to Our Individual Donors

The work of the PFD Research Foundation in female pelvic floor disorders research is made possible through the generous support of the following individuals. We are grateful for their continued generosity and commitment to the prevention, treatment, and cure of female pelvic floor disorders.

(Recognized gifts from October 12, 2015 – December 31, 2016)

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