THE CUTE SYNDROME FOUNDATION



Marcy Bingham pictured with twin sons Jacob and Jarod at the 2017 SCN8A Clinician, Researcher, and Family Gathering

Photo credit: **Ryan Collerd**

ANNUAL REPORT

November 2018

Praxis precision medicines

XENON Zogenix

GREENWICH BIOSCIENCES

Thank you to our 2018 Sponsors!



Katie Banks, TCSF volunteer, and her son Wyatt
at the 2017 SCN8A Clinician, Researcher, and Family Gathering

Photo credit:
Ryan Collerd



Hillary Savoie, Founder and Co-Executive Director, TCSF
at the 2017 SCN8A Clinician, Researcher, and Family Gathering

Photo credit: **Ryan Collerd**

A word from our Founder, Hillary Savoie
on The Cute Syndrome Foundation's fifth year

This has been another exciting year for The Cute Syndrome Foundation.

This annual report will cover a lot of ground, including information our accounting figures from 2017, updates from our 2017 SCN8A Grant awardee, and information regarding potential SCN8A treatments on the horizon. We will highlight our 2017 Annual SCN8A Clinician, Researcher, and Family Gathering and our ongoing SCN8A awareness activities.

I want to take a moment, however, to highlight one of the most important areas of growth: Our volunteer team, which is now 21 strong. This team represents approximately 10% of the SCN8A patient population with which we are connected in the TCSF SCN8A Facebook Support Group. 2018 has also seen our volunteer team take on more responsibility for spearheading foundation events, activities, and campaigns. We have dedicated individuals and teams working on support group administration, social media accounts, website redesign, grant applications, and patient interaction with the SCN8A Registry. 2018 has also seen an increase in the engagement of our SCN8A community in awareness and fundraising activities—with almost half of our non-sponsorship income in 2018 coming from Facebook fundraisers!

At the end of this month we will hold our most important event of the year: The Fourth Annual SCN8A Clinician, Researcher, and Family Gathering in Washington DC, in conjunction with the annual American Epilepsy Society Meeting. At this event we are able to provide the unique opportunity to bring children and families affected by SCN8A mutations together with the scientists and clinicians working to improve the lives of those with SCN8A. This event has been made possible in part by our generous sponsors: Praxis Precision Medicines, Xenon Pharmaceuticals, Zogenix, Greenwich Biosciences, and The Epilepsy Foundation.

We are tremendously grateful for the continued generosity of our donors who have helped us make all of these big things happen!

-Hillary Savoie, PhD
Founder and Co-Executive Director of The Cute Syndrome Foundation
www.thecutesyndrome.com

The Cute Syndrome Foundation is is tax-exempt under Section 501(c)(3) of the Internal Revenue Code and donations are tax deductible to the extent permitted by law.

SCN8AEPILEPSY

Volunteer Highlight: Alisha Wheeldon

Alisha joined the TCSF volunteer staff in 2017. After going through through HIPAA training, Alisha began working as a liaison between the Family Support group and the SCN8A.net Registry team, working with families that are having difficulties filling out the Registry questionnaire. Here is a bit about her family, in her own words:



My family consists of me, Eddie, and our children Jayden and Clayton. Our Clayton is the happiest and most innocent kid you have every seen. His life has been rough from the start. He has had countless seizures, therapies, tests, and hospital stays. Life gets unbelievably complicated when you have a medically fragile child.

When Clayton was about one and a half we found out that he had the SCN8A gene mutation. I was completely devastated knowing that he would never outgrow this. The unknown is the most terrifying part: Waking up every morning and being afraid to walk into your child's room in fear of what you may see is not something anyone should have to go through. We tried many failed medications throughout his life. He has finally gained seizure control on Dilantin, which we heard helped other children through the support group. He still has breakthrough seizures when his levels drop or when he is sick. However, SCN8A is much more then seizures. Our current battle is his severe developmental delay. His intellectual abilities range from 5-10 months old. Everyday activities are much harder for him. His strength and determination amazes me.

As life calmed down I asked if I could be of any help to the foundation and that's when I became the registry liaison. My part is to contact families with SCN8A and help them with any questions they may have to complete their personal registry. No child or family should have to go through something like this. But since I have to, I am so happy it is with Clayton.

Clinical Trial Update: Praxis PRX330

Praxis Precision Medicines continues to advance its efforts to develop a new therapy for treating SCN8A epilepsies. With several promising molecules, including PRX330, in hand, the company is in the process of conducting extensive safety testing before initiating clinical trials of the medicine. While those trials are likely still 1-3 years away, Praxis remains diligently committed to SCN8A, and to working closely with TCSF to ensure that the wellbeing of the SCN8A community remains at the forefront of all of our efforts.

Clinical Trial Update: Xenon Xen901

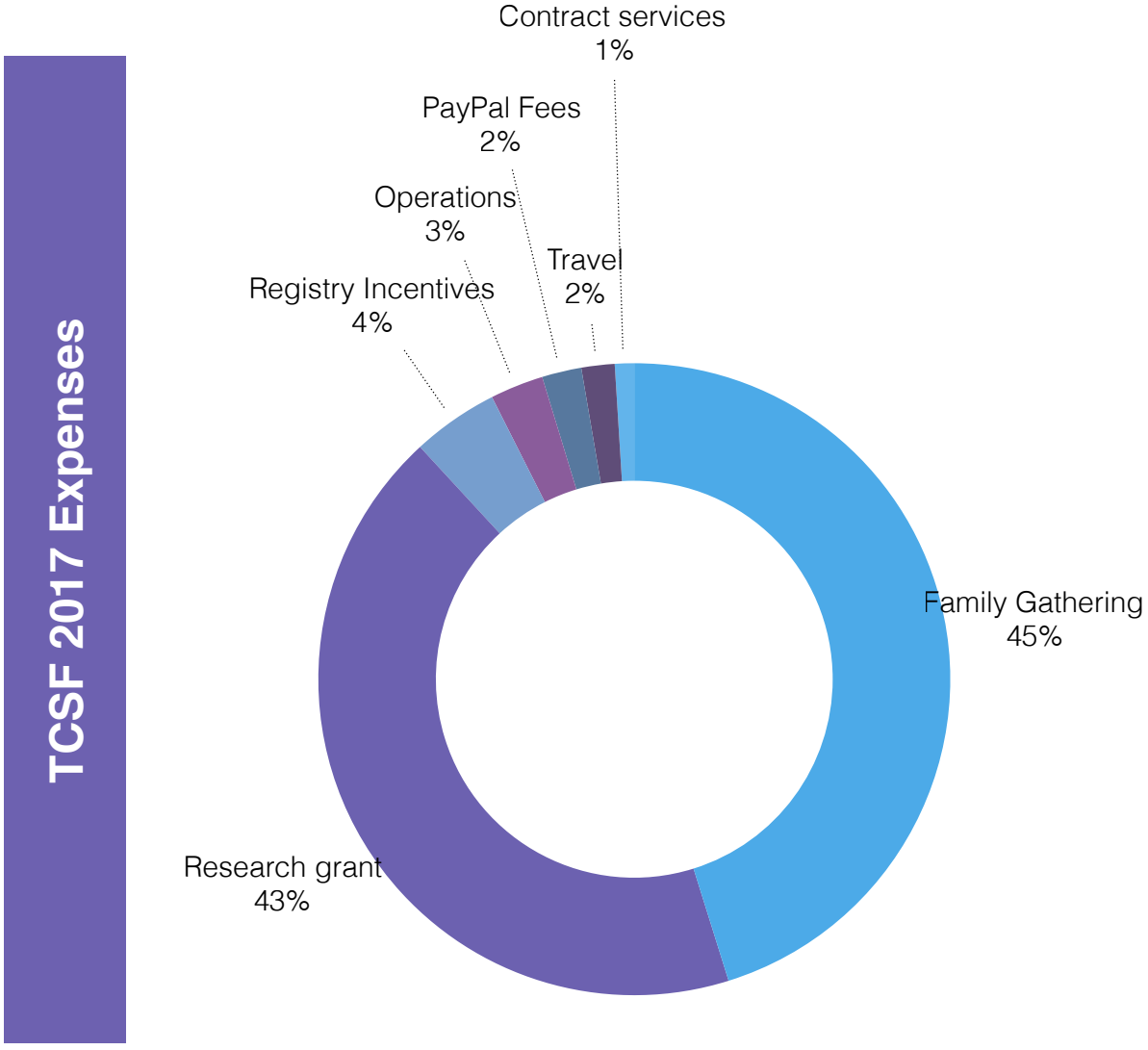
Xenon is developing XEN901, a potent, highly selective Nav1.6 sodium channel inhibitor, for the treatment of epilepsy. A Phase 1 clinical trial to evaluate XEN901's safety, tolerability and pharmacokinetics* in ongoing, with 74 healthy adult volunteer subjects enrolled as of August 2018. Interim results presented in May 2018 included favorable data that showed dose proportionality and supported twice daily or better dosing. The dose levels tested yielded drug exposures above the efficacy** range predicted by the pre-clinical Maximal Electroshock Seizure (MES) rodent model. Upon completion of the Phase 1 clinical trial, Xenon expects to initiate a Phase 2 clinical trial evaluating XEN901's efficacy as a treatment for adult focal seizures or for rare, pediatric forms of epilepsy as soon as feasible thereafter depending on planned discussions with regulatory agencies in the near term.

** the study of the bodily absorption, distribution, metabolism, and excretion of drugs.*
***a drug's capacity to produce an effect*

SCN8AEPILEPSY

What We Support: 2017 Spending

As a foundation, TCSF is focused on providing family support, improving clinical outcomes, and funding medical research for those living with SCN8A mutations. We are a small foundation run entirely by volunteers. Last year we brought in almost $65,000 in donations and sponsorships. However, we believe we have learned how to do a lot with that amount of money. Almost 90% of our funds in 2017 were spent on two items: The Annual Family Gathering and our 2017 Research Grant, both of which you can read more about in this report.



2018 Trends and 2019 Forecast

While we do not have full reporting on the 2018 financials, we are seeing a trend that is very exciting: We are also seeing record engagement in fundraising from our SCN8A Community—almost half of our non-corporate sponsorship income so far in 2018 has come from Facebook fundraisers started by families and friends of individuals affected by SCN8A mutations. This is an exceptional way for our community to make a difference in our operating budget while raising awareness of SCN8A and The Cute Syndrome Foundation.

As we completed payments for our 2017 Research Grant in 2018, we are gearing up for another competitive research grant in 2019. We are also partnering with the American Epilepsy Society in their Seed Grant Program, which funds established investigators with a goal expanding SCN8A research. We look forward to helping drive SCN8A research innovation in 2019!

SCN8AEPILEPSY

2018 SCN8A Awareness Day

This year we held the second International SCN8A Awareness Day on February 9th. The date honors the birthday of Shay Hammer—the first known person with SCN8A Epilepsy. This year our Awareness Day Campaign focused on how our children keep moving forward—and inspire our community of parents, volunteers, clinicians, and researchers to also keep moving forward. The awareness spread by the campaign also helped more families of those with SCN8A Epilepsy find the TCSF SCN8A Support Group on Facebook, now over 200 families strong!



SCN8A Champions

At our Gathering last December we honored three individuals with CUTIES Awards, Awards given to Champions for Understanding, Treating, Investigating, and Empowering those with SCN8A. Our recipients included clinician recipient, John Schreiber, MD, for his dedication to SCN8A clinical understanding and parent recipient Maggie Nayyar, for her volunteer work for TCSF.

We also honored Michael Hammer, PhD, who has been a champion of the SCN8A community since before our community existed. As the father of Shay Hammer, the first known person with SCN8A, the genetic researcher responsible for isolating SCN8A in humans, and the founder of the SCN8A Registry, SCN8A.net, Michael is absolutely a CUTIES!







2018 SCN8A CUTIES
Michael Hammer, PhD (pictured with **Juliann Bradish**, Co-Executive Director TCSF)
Maggie Nayyar (pictured Jennifer Smith-Stout)
John Schreiber, MD

Photo Credits: Ryan Collerd

Last year TCSF honored the memory of Dr. Harris by creating the Dr. Mandy Harris Travel Grant, which will help two SCN8A family members attend this year's SCN8A Gathering in New Orleans. This year we are supporting one international family member and, with the help of Southwest Airlines, one American family member. Marie Withers is our International attendee who will be representing Scotland. Kacie Craig is our domestic winner and will be joining us from Missouri (USA).

SCN8AEPILEPSY

The SCN8A Clinician, Researcher & Family Gathering

Last December The Cute Syndrome Foundation hosted the third annual SCN8A Epilepsy Clinician, Researcher, and Family Gathering in Washington, DC. Over 100 guests met, including professionals working on SCN8A research and treatment and more than 75 members of our SCN8A family community, including 14 children with SCN8A. Families traveled internationally from Canada, Germany, Brazil, and New Zealand. The gathering is an important venue for sharing clinical information about the effective treatment of SCN8A epilepsy as well as highlighting ongoing research efforts. And for the third time, the SCN8A community was able to meet with the very professionals who dedicate their professional time to helping our children! This year, thanks to the support of our sponsors and the hard work of our volunteers, we expanded our event to include a second day for families only—covering topics of importances to every day life with SCN8A. We look forward to another ground-breaking gathering this year in New Orleans!







From left to right: **Clayton Gard, SCN8A Families Picture, and Manoj Patel, PhD.**
at the third annual SCN8A Epilepsy Clinician, Researcher, and Family Gathering in Washington, DC (December 2017) Photo credit: **Ryan Collerd**

Dr. Cummins Awarded 2017 SCN8A Epilepsy Grant

Last year, as a collaborative effort with our partner organization in Brazil, Ajude o Rafa, The Cute Syndrome Foundation helped award a $40,000 grant to Ted Cummins, PhD and James Marrs, PhD, of Indiana University-Purdue University Indianapolis and Indiana University School of Medicine for their proposal to create an SCN8A zebrafish model.

Dr. Cummins has updated us on his work:

"Our long-term goal is to create numerous zebrafish models of gain-of-function sodium channel mutations that can be used for high throughput screening of FDA approved compounds, novel small molecule libraries and natural compounds such as cannabinoids. Initial efforts focused on using CRISPR-Cas9 mutagenesis to make point mutations in the zebrafish sodium channel Scn8aa. Unfortunately, this approach did not produce viable fish. We characterized 7 SCN8A mutations in recombinant human Nav1.6. Because the human channel is better reflects the human disease pathophysiology and is likely to better model human therapeutic responses, we focused on developing transgenic models expressing human SCN8A variants. Over the year we refined our approach based on complications that we encountered. The initial transgene promoter that we used did not efficiently drive human sodium channel transcription. Switching to a longer Elavl3 promoter enabled us to generate fish with human SCN8A mRNA expression. To aid identification of transgenic fish for breeding, we engineered in a fluorescent eye reporter. We have optimized our behavioral assay for high-throughput screening of seizure activity and have validated the screen with several FDA approved anti-convulsants. We have also engineered GCamp6s, a fluorescent reporter of neuronal activity, into the transgene to help quantify seizure activity and observe how neuronal circuit activity is altered by SCN8A variants and therapeutic compounds. Currently we are validating expression of functional human Nav1.6 protein in zebrafish neurons. Once this is completed we will be able ramp up screening of transgenic human SCN8A fish."

SCN8AEPILEPSY

We would like to extend our thanks to:

Fundraiser Organizers

Thank you to those who organized fundraisers through Facebook and Network for Good and to those who contributed!

2018 Donors To Date

Thank you, as well, to those who made donations through YourCause & Benevity

Abbvie
Adrian Alderfer
Alessandro Marinoni
Amelia Krause
Amy Glynn
Andrea Bertoni
Andrea Fiora
Angela Young
Ann Behrens
Betty Kyle
Betty Norton
Brenda Hasler
Camilla Medani
Carl Hess
Carley Young
Charles Lyons
Christine Biedermann
Claudia Sakuth
Clayton's Crusade
Colleen Johnston
Custom Ink
Deana Norris
Debbie Stroemer
Deborah Spencer
Diane Smith
Diego Rigosa
Donald Simpson
Donna Purdy
Edda Moretti
Efton Jiles
Ekaterina Kareeva
Federico Astori
Floyd Smithey
Forest Hill Elementary School
Gary Kelly
Greg Buckner
Hela Trerotola
James McCormick
Jessica Virzi
Jim Banks
Joanne Jusseaume
John Lareau and Charlene Lareau
John Schutz
Judith Testerman
Karen Varner
Kari Horton
Kathleen Gleeson
Lauren Vandewalle
Lisa Santillo
Luca Delatore
Lynda Tharp
Lynn Purner
M. Dauphin
Maria Victoria Mears
Mark Sellmann
Mark Turkey
Mary Robinson
Matthew John McNally and Susan Caum
Melanie Bartholomay
Melissa Argo
Michael Ramirez
Michele Rampinelli
Michelle Mankin
Migjen Stenger
Mirria Gonzalez
Mitch Korab
Nancy Brown
Nicoletta Bertoletti
Oscar Porta
Rev John Schutz
Robert Wolford
Sam Richardson
Sandy Bush
Sharon Tardie
Shaun Fleishman
Susan Norris
Timothy Lawson
Trisha Rathke
Virginia Young
White farm DBA Cherry Hill Ice Cream
William and Barbara Birchenough

Board of Directors

Hillary Savoie
Lan Aronson
Monica Lamontagne
Philip Gitlen

Volunteers

Alisha Wheeldon
Colleen Revene Johnston
Daniel Braz
Dianely Cabrera
Hillary Savoie
Jaden Bitton
Jennifer Costello
Jennifer Smith-Stout
Jessica Jenkins
Juliann Bradish
Karen Hess Varner
Katie Banks
Maggie Nayyar
Mali Finn
Megan Gard
Megan Varner
Natan Pinheiro
Shelley Frappier
Sandy McClurg Bush
Trisha Rathke
Wendy Woody

2018 Sponsors

Praxis Precision Medicines
Xenon
Zogenix
Greenwich Biosciences
Epilepsy Foundation
Southwest Airlines
Panera
Rare Science

For more information on SCN8A, please see our updated *SCN8A Clinician Reference Guide* at
www.thecutesyndrome.com/reference-guide.html

For more information on TCSF visit us online:
www.thecutesyndrome.com
or find us on Facebook at
www.facebook.com/thecutesyndrome