

Deater Foundation, Inc.

Newsletter

HSN1 (Hereditary Sensory Neuropathy 1)

Submitted by: Ellen Burns, Medical Liaison

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Reunion

Reminder!

Hope to see you
at the 65th
Deater Reunion
on July 14, 2007
at Butler's property.

The year 2006 was a relatively quiet period in HSN-1 research. An article in *Clinical Neurology and Neurosurgery* published in 2006 describes the autopsy findings of a 93-year-old woman who developed symptoms of HSN-1 after age 64. An article in *Brain* examines the cases of a number of people with various neuropathies, focusing on HSN-1 and highlighting how differently the symptoms are expressed in different individuals. Throughout 2006 and into 2007, work continued at the Day Lab on the mice that were developed to mimic the results of the genetic mutation that causes HSN-1.

In October 2005 Alexander McCampbell, then at the Day Lab for Neuromuscular Research, was the primary author of an article in *Human Molecular Genetics*: "Mutant SPTLC1 Dominantly Inhibits Serine Palmitoyltransferase Activity *in vivo* and Confers an Age-Dependent Neuropathy." This article describes the research Alex completed in developing the mouse model for HSN-1. Genes in mice were altered, resulting in mice that over produce the enzyme (SPT) associated with HSN-1. One line of mice over produce the enzyme using the normal gene, and another line of mice over produce the enzyme with the gene that has the HSN-1 mutation.

Genes make (encode) proteins, and proteins make enzymes. In HSN-1

there is a mutation in the SPTLC1 gene. The SPTLC1 gene encodes a protein that is a sub-unit of the enzyme serine palmitoyltransferase (SPT). SPT acts as a catalyst in the process of the development and regulation of sphingolipids. This process creates sphingosine, which leads to ceramides. Ceramides are important in intracellular signaling—sending messages within cells (although how that happens is not clear).

The research concluded that mice with the mutant gene develop age-dependent weight loss and mild sensory and motor impairments. Aged mice lose large nerve cells at the spinal cord. The mice were examined at all levels, including how elements move within the cells. The mice did not develop ulcers on the extremities, and the overall neurological involvement was not as severe in the mice as it is in the advanced stage of people with HSN-1. However, the mice present a new model of peripheral neuropathy and confirm the link between the mutation of SPT and the nerve disorder.

Alex McCampbell has left the Day Lab; and Dr. Florian Eichler, a neurologist, has joined the team there. Much of his time this last year has been spent working on a project involving

(Continued on page 3)

Deater Foundation, Inc. Receives a Grant

Submitted By: Carol Dorward

Early in March, Jon Ellsworth notified us that the company that he works for (Enterprise Rent-a-Car Foundation) had awarded Deater Foundation, Inc. a grant of \$2,500. This award was made possible due to the company's philanthropic gestures and Jon's willingness to follow application procedures.

When Jon sent Deater Foundation the check from Enterprise, he stated in the cover letter that "Most large companies have a fund or a foundation set up for philanthropic purposes and are frequently looking for organizations to give their money to. I would encourage everyone to check with their company's Human Resource Department to see if such a

fund exists or to see if their company does a gift matching program to non-profit organizations."

Because of this grant, Deater Foundation, Inc. is better able to fund research for a treatment/cure for the disease that has plagued our family for generations.

Perhaps others in the family will follow Jon's example and recommendation and pursue similar opportunities in their own work places.

We are grateful to the Enterprise Rent-a-Car Foundation for considering DFI worthy of the grant and for the generous award. And thank you, Jon for pioneering this funding adventure.



Jon Ellsworth

Perhaps others in the family will follow Jon's example and recommendation and pursue similar opportunities in their own work places.

June 1 Meeting at MGH

—Submitted by Ellen Burns, Medical Liaison

On June 1, 2007, a small group gathered in a first floor conference room of Building 114 at the Massachusetts General Hospital East complex in Charlestown, Massachusetts. Dr. Robert H. Brown, Jr. and Dr. Florian Eichler welcomed Eric Newcomer, Larry Deater, Kristen Kirk Paladino, Rory Robb and Ellen Deater Burns to a meeting providing an update on research on HSN-1.

Dr. Brown reviewed the research from the discovery of the gene for HSN-1 in 2001 through the development of the mouse models for HSN-1, illustrated with a Power Point presentation. Dr. Brown and Dr. Eichler explained the results of the most recent research on the mice with HSN-1.

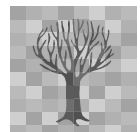
- A mouse lives about 2 years. Six

to eight months of age is early adulthood for a mouse.

- Tests on the mice for sensitivity to pain and heat showed hypersensitivity early in the disease. Eric and Larry confirmed this symptom. Hypersensitivity usually precedes the loss of nerves.
- As the mice got older, they got worse—sensitivity to pain and heat decreased.
- At the cellular level, it appears that there is not a decrease in the amount of enzyme produced, but in the enzyme activity. The activity is only about 25% of what it should be.
- One theory is that the enzyme is defective
- The researchers bred mice that



Dr. Robert Brown



DFI

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Pictures from Last Year's 64th Deater Reunion July 15, 2006



Do you remember how it rained? But it didn't dampen our appetites. Those nice tents and tarps enabled us to eat and socialize rather comfortably.

We look forward this year to getting together on July 14 at Butler's property. **Mark your calendar!**

Hope to see you there. We always have a great time.



HSN1

—Submitted by *Ellen Burns, Medical Liaison*

(Continued from Page 1)

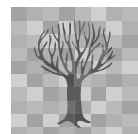
Lorenzo's oil disease, another degenerative spine and nerve disease. Dr. Eichler has also worked with the HSN-1 mice as they have aged and has noted significant changes. He plans to publish those results.

The Day Lab has a couple more years of a grant received from the National Institutes of Health (NIH), in conjunction with other researchers, to study HSN-1. A medical student has been hired as a full time technician. The team awarded the NIH grant meets yearly to discuss progress. This team

includes Dr. Teresa Dunn at the Department of Biochemistry and Molecular Biology, who is an expert in processes at the cellular level.

It is believed that the primary pathology of HSN-1 is a decrease in enzyme activity. This could lead to potential treatment trials involving increasing enzyme activity. A conference of those involved in HSN-1 research could provide a fresh look at the studies so far and suggest ways to treat the disease.

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DFI

A Tribute to My Mom

—Submitted by Carl (Butch) Montross, Jr.

Many of you know about my mother's leadership qualities, but I suspect that some of you are not aware of her role as a prankster. April first is one of her favorite holidays. Beware if she ever offers you a sandwich or a piece of layer cake. The waxed paper is easier to get rid of than the white thread, disguised with some innocent icing or margarine, or even peanut butter.

Going in town, shopping with my mother, was often embarrassing when I was a teenager. She would love to wolf whistle at girls on the street, then quickly peer into a store window while I stood there looking guilty and embarrassed!

At age 16 or 17, driving around Harvey's Lake in the summer could also be an adventure, with Mom in the car. She would reach over from the passenger seat and blow the horn at girls on

the docks as we drove by; very surreptitiously, I might add.

Mom has been known to eat freshly baked pies at her sister's house when no one was home. I have even seen her chase my Dad and Uncle Tommy around the orchard with Tommy's Jeep.

The Deater Reunion is surely one of Mom's favorite family activities. She always used to make sure that all newcomers felt welcome. They were quickly introduced to the "Fly" family.

Times were not always rosy, but my Mom is tougher than the toughest of times. Her attitude is positive and her character is strong, as is her faith.

I am very, very proud of my mother and I am honored to be her son.

—Butch

This issue of the Deater Foundation Newsletter is
In Honor Of
Mona Deater Montross



Mona & Carl

June 1 Meeting at MGH

(Continued from Page 2)

produce an overabundance of the normal enzyme, as well as mice that had the HSN-1 gene and produce an overabundance of the possibly defective enzyme.

When the two different kinds of mice were bred together, the offspring did not have the neurological symptoms.

This discovery presents a new set of questions about the exact mechanism and possible treatment of HSN1.

The group discussed many ideas about what direction new research should take.

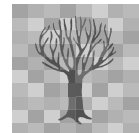
- There may be faulty linkage of the two parts of the enzyme

- There are several steps from the encoding of the enzyme to the production of sphingolipids to the creation of ceramide (important in cellular function) that can be investigated.

- Potential treatment, such as supplementation with a food or a drug that could promote the production of ceramide might be tried.
- The Day Lab continues to breed new mice for ongoing research

The Day Lab team will seek to renew the NIH grant as well as a grant through the Neuropathy As-

Potential treatment, such as supplementation with a food or a drug that could promote the production of ceramide might be tried.



DFI

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A Poem to Celebrate Mona

—Submitted by Linda Montross

- M** Mother of Butch, Becky and Cindy
O One-of-a-kind (that's what the name Mona means!)
N Never misses the Deater Reunion
A Always where the action is
- D** Dedicated, praying Christian
E Enjoys visiting and being with people
A Awesome cook
T Ten great-grandchildren
E Eighty-four years on June 13, 2007
R Ready to help those in need

- M** Married to Carl Montross on October 6, 1940
O Open to new-fangled ideas—remember the *Radar Range*?
N Nine Grandchildren: Brian, Brenda, Anita, Heidi, Scott, Naomi, Jennifer, Pam, R.J.
T Tells interesting stories of growing up in Stull and Noxen
R Really loved and appreciated by her kids and grandkids
O “Open door, open heart” is her policy
S Studies the Bible and loves to share it
S Seventh child of Alvin and Ellen Deater

—With love from your daughter-in-law, Linda

June 1 Meeting at MGH

(Continued from Page 4)

sociation.

The Deater Foundation presented a check for \$10,000 to the Day Lab to convene a conference of experts in the various aspects of the research involved. Dr. Brown said such a conference would be “the most constructive use of resources at this time.” It is anticipated that the conference will take place sometime close to the end of 2007, after Dr. Eichler reports on his current research and allowing time for the invited researchers to



plan their schedules.

This planned conference is an exciting prospect, and fills us with much hope for an eventual treatment or cure for the disease that has afflicted our family for 7 generations.



Becky, Carl, Carl, Jr. (Butch),
Mona and Cindy

The Deater Foundation presented a check for \$10,000 to the Day Lab to convene a conference of experts in the various aspects of the research involved.



DFI

Introducing Dr. Florian Eichler

Submitted By: *Ellen Burns, Medical Liaison*

Florian Eichler received his M.D. from the University of Vienna Medical School in 1997. He did a residency in Pediatrics; he studied blood flow in the brain and metabolism at the University of Vienna. In 1999 he won a scholarship to study at Johns Hopkins in Baltimore with Dr. Hugo Moser. There, he began working with boys affected by X-linked adrenoleukodystrophy (Lorenzo's oil disease), a degenerative disorder of the nervous system characterized by inflammatory demyelination, progressive neurological dysfunction and death. Following his research fellowship at Johns Hopkins he became a resident in Child Neurology at the Massachusetts General Hospital (MGH) and in 2005 he joined the staff at MGH.

Now an Assistant Professor of Neurology at Harvard Medical School he is extending his research into animal models of neurodegenerative disorders under the mentorship of Dr. Robert Brown. His research focus is on neurogenetic disorders and lipid metabolism. As director of the leukodystrophy clinic

at the Massachusetts General Hospital, he sees patients with a variety of neurodegenerative conditions. The clinical focus is on diagnosis and identification of potential treatments for patients with leukodystrophies.

The mutation in the SPTLC2 gene in HSN-1 affects the regulation of sphingolipids. Dr. Eichler's expertise in lipids metabolism is a great addition to the research team.

Dr. Eichler wrote: "My former mentor Hugo Moser said that all research is based on personal relationships. The longstanding admiration and respect that Dr. Moser and Dr. Brown had for each other (Dr. Moser passed away in 1/2007) made my path into the Day lab appear natural and easy. Aware of the devastating affect upon patients, I see research into the impact of lipid metabolism as an important tradition to carry on. I very much enjoyed meeting you and your family. It certainly added an important dimension to the bench research."



Dr. Florian Eichler

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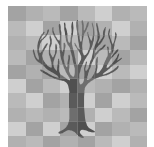
Not on our Mailing List? New Address?

Notify
Carol Dorward
at
cdorward@deaterfoundation.org
*of your current home address
and/or email address*

Website Comments, Suggestions,
Questions, etc.

Contact Dixie Dorward:

ddorward@deaterfoundation.org



DFI

Deater Disease Survey

—by Tami Newcomer Murphy

In April, a survey was sent out to members of the Deater family who have the HSN1 disease or may possibly be affected later on in their lifetime. The objective of the survey was to gather general, physical, and lifestyle information about these members in order to compile a comprehensive picture of the disease across the entire Deater family. Collection of this valuable information now will ensure that each affected person's story will not be lost and can be passed down to future generations both for their reference and for potential advancements in research and medicine. In addition, since the disease affects different family members at various ages and to varying degrees, another thought behind the survey was that other factors (i.e. environmental, lifestyle, etc.) may be contributing to the observed differences within the Deater family. This survey, therefore, might help in elucidating any patterns within the family that can be further researched in the hope of better understanding the Deater disease.

This survey represents one small step that we, as a family, can take right now to help better prepare future generations to deal with the disease. A total of 36 surveys were sent out and, to date, 11 have been completed and returned. Thank you to everyone who has participated so far, and for those of you who have not yet filled out the survey, it is not too late! Completed surveys can be returned to: Deater Foundation Inc., PO Box 255, White Deer, PA 17887.

If you did not receive the survey and should have, we apologize and will quickly get one to you if you will send an email to me at newcomert@hotmail.com or call me at (610) 688-1847.



Tami Newcomer Murphy

Collection of this valuable information now will ensure that each affected person's story will not be lost and can be passed down to future generations both for their reference and for potential advancements in research and medicine.

Gift Certificate Idea

—Submitted by Rory Robb Deater



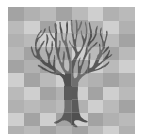
For Your Consideration:

A gift to Deater Foundation, Inc. may be the perfect gift for someone, to honor someone, to remember someone.

Give a donation:

- * *To celebrate a birthday*
- * *In honor of Mother's Day or Father's Day, for the parent with HSN-1 (or without)*
- * *In appreciation*
- * *For Christmas, for the hard-to buy-for-person*
- * *In memoriam*

You may request a certificate, suitable for gift giving, to present to the recipient. To do so, contact Nancy Newcomer, Treasurer, P. O. Box 255, White Deer, PA 17887 or email her at: njnewcomer@yahoo.com

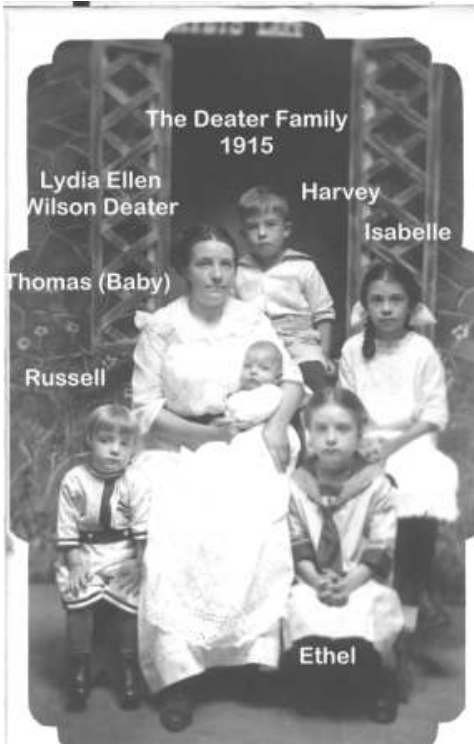


DFI



Old Family Photos

—Submitted by Beulah Womer and Kevin Koziol



Deater Family 1915



Deater Children 1917



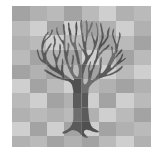
Henrietta Rudolph and Donald (Wedding)



Wilson-Newell Group



Wilson Family September, 1951



DFI



DFI Treasurer's Report (May 31, 2006, to May 31, 2007)

Submitted by: Nancy Newcomer, Treasurer

DFI Statement of Account

Balance as of 6/1/06.....	\$48,388.24
Income 6/1/06 to 12/31/06	5,722.49
Interest 6/1/06 to 12/31/06	131.36
Income 1/1/07 to 5/31/07.....	4,850.00
Interest 1/1/07 to 5/31/07.....	108.80
June 2006 Expense	<u>- 8,000.00</u>
 Balance as of 5/31/07	 \$51,200.89



Nancy J. Newcomer
Treasurer

A Few More Old Family Photos

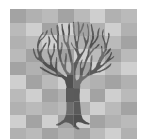


Back- Andrew Delfine, Mattie, William, Alice, Tom, Lydia Ellen, Rachel, Lawrence
Front: Hiram, Mary Katherine, Sarah Jane (Jennie)
Missing: George The Wilson Family, bef 1932

Wilson Family (Pre-1932)



Henrietta Deater, Son David



DFI



**P. O. Box 255
White Deer, PA 17887**



**We're on the Web!
deaterfoundation.org**

**Remember that your
contributions to DFI are tax
deductible.**

**Mail contributions to:
Deater Foundation, Inc.
c/o Mrs. Nancy Newcomer
P. O. Box 255
White Deer, PA 17887**

The Deater Foundation **—Submitted by Ellen Burns, Medical Liaison**

The Deater Foundation, from its inception, has provided financial support for the Day Laboratory for Neuromuscular Research. The Foundation has a contract with the Lab for ongoing support. In most recent years, the Foundation has sent \$8,000 each year after receiving a report of current work on HSN-1, the "Deater disease."

The money donated by the Deater Foundation, that is, the money donated by members and friends of the Deater Family, has often been "seed money" around which the researchers have sought other grants for substantially more money.

An article, with Alexander McCampbell as primary author, in

Volume 14, Number 22, Pages 3507-3521, was published in the fall of 2005. "Mutant SPTLC1 Dominantly Inhibits Serine Palmitoyltransferase Activity *in vivo* and Confers an Age-Dependent Neuropathy" includes under

Acknowledgements: "This work was

supported by NIH grant 5RO1NS047717-02, the **Deater Foundation**, and the National Institute on Aging Intramural Research Program. Additional support for A.M. was provided by NINDS Fellowship F32 NS044695-03. The Day Neuromuscular Research Laboratory receives generous support from the Cecil B. Day Company."

The equipment in the laboratory is amazingly expensive; the staff, the lights and heat all cost money. Our contributions make a small impact on these costs, but, together with other grants, provide significant support.

Likewise, each individual may feel that his or her small contribution would not have much impact, but added together, with the contributions of others, it does, in fact, have the power to change the course of the disease. We thank you for your support over the years, and hope you will continue to be a part of this change!



**Ellen Burns
Medical Liaison**

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DFI