FACIOSCAPULOHUMERAL MUSCULAR DYSTROPHY SOCIETY

FSH Watch

A publication of the Facioscapulohumeral Muscular Dystrophy Society

Connecting the community of patients, families, clinicians and investigators

My Choices, My Chair & Hurricane Katrina

By Ashley Bryan

In September 2005, days after Hurricane Katrina struck Gulf Coast communities, I, like so many people, felt driven to try and aid the evacuees in any way possible. Against the wishes of my family, I took my wheelchair and headed to the Houston Astrodome. I had absolutely no idea how I could be of service - the news reports had requested strong people to help set up cots and unload truckloads of donated supplies.

I was advised numerous times by security gate personnel that they appreciated the effort, but they were not sure they could put me to use. I eventually encountered the right one who immediately said, "they need people in the computer areas to type in missing person information, and you even brought your own chair!" I was through the gate and on my way to computer services. After serving there for two days, a friend called and asked me to come to food services to join her as she colored pictures with crayons with the evacuee children. Together with three other mothers, we formed the Katrina's Kids Project, which you may have read about in the May 2007 issue of ***Reader's Digest***.

Katrina's Kids Project was inspired by our desire to try and brighten the days for these displaced children and ease their fears. It began as an art table where children could gather and draw with crayons and it grew to a means of providing emotional support for children devastated by what had happened to them. Their drawings - their artful expressions - became the medium for children to share their experiences, their pain, and their hope.

We are not licensed art therapists, just moms trying to comfort kids. The images created were matted and framed, and they have been traveling around the country for exhibition in prestigious art museums over the past two years. These images have been featured in six publications as well as on the electronic media: ***ABC World News Tonight, NBC Nightly News, the Today Show, CNN*** and other press around the world. The National Art Club of New York City awarded the Katrina's Kids Project the National Medal of Honor for Education. But the greatest gift bestowed upon me, for my involvement, was the opportunity to meet a young boy, orphaned by the storm, named Donald.

Ashley Bryan and Katrina's Kids at the Houston Astrodome, September 2005.
Photo credit, Janine Schueppert

Two years later, I still think of this work every day. Donald Expose remains a great part of our life and our hope as we continue trying to help shape his future. I think of all the rescues experienced in those few days and weeks. Only recently I learned how the FSH Society and the FSHD community helped to resettle FSHD researcher Melanie Ehrlich, Ph.D., her materials, and her family from New Orleans. (See story on page 10.)

What did I learn about myself? I've been asked that question many times. First, regardless of my disease and my physical pain, every minute of this experience reminded me that we all have something to give. We can all, regardless of abilities, reach out and try to make a difference. I have always felt incredibly blessed for having a

continued on page 4

Great Progress: Creating a Mouse Model with FSHD

By Yi-Wen Chen, D.V.M., Ph.D.
Children's National Medical Center, Washington, D.C.

Skeletal muscle forms the majority of the muscular tissue in the human body; it powers critical roles in physiological functions including movement and metabolism. Conditions causing muscle atrophy often lead to devastating consequences. Some examples are cachexia (loss of muscles in cancer patients), sarcopenia (loss of muscles in elderly individuals), muscle disuse due to bed rest or cast immobilization, and muscle atrophy during space flight.

continued on page 2

Executive & Development Office
Nancy Van Zant, Executive Director
FSH Society, Inc.
c/o BBRI R353
64 Grove Street
Watertown, MA 02472 USA
(617) 658-7878
(617) 658-7879 Fax
nancy.vanzant@fshsociety.org

Patient Resources Office
Carol A. Perez, M.Ed.
FSH Society, Inc.
3 Westwood Road
Lexington, MA 02420 USA
(781) 860-0501
(781) 860-0599 Fax
carol.perez@fshsociety.org

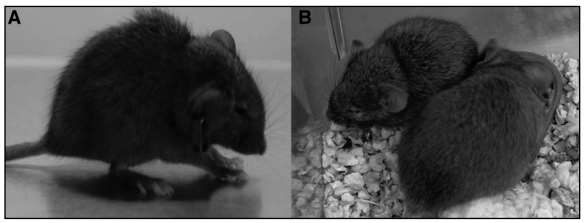
Research Programs Office
Daniel Paul Perez
FSH Society, Inc.
11 Elmbrook Circle
Bedford, MA 01730 USA
(781) 275-7781
(781) 275-7789 Fax
daniel.perez@fshsociety.org

www.fshsociety.org

Great Progress: Creating a Mouse Model with FSHD

continued from front page

A research group at the Children's National Medical Center, Washington, D.C., has been studying different conditions involving muscle atrophy to understand the molecular mechanisms of the process. In addition to several conditions causing muscle atrophy (bed rest, cast immobilization, spinal cord injury), Dr. Yi-Wen Chen's group has been looking at molecular mechanisms of FSH dystrophy. Using a technology that can determine activities of all genes (expression profiling) in patients' muscles, the group and collaborative investigators recently identified a gene, PITX1, which might be involved in the disease progression. In addition, a gene encoded by the D4Z4 unit which is linked to FSH dystrophy, DUX4, was shown a potential regulator of PITX1.



The mouse pictured in A and the mouse at the top of picture B are TRE-PITX1/mCK-tTA, models where antibiotics are unsed to control PITX1 gene experession. When the antibiotic is withdrawn, the mice show characteristics of FSHD. Mouse B in the foregound is an unaffected mouse.

PITX1 is a gene only known for its function in limb development and in pituitary gland. The role of PITX1 in mature skeletal muscle is not known. During embryonic development, the PITX1 protein is only expressed in the region that will eventually develop into legs, but not in the region that will later become arms. When researchers forcefully express PITX1 in the area that will become arms, the arm developed abnormally. Based on these observations in the lab about the function of the gene, including: 1) distinct effects to the arm and leg muscles; 2) left-right asymmetric involvement; and 3) involvement in immune modulation, Dr. Chen's group hypothesized that the gene is involved in the pathology of FSH dystrophy. To further study the function and involvement of the gene in FSH dystrophy, they have developed an animal model—a mouse with the PITX1 gene.

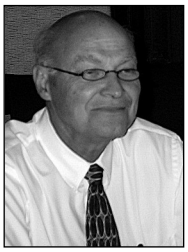
Transgenic animal models have been used extensively by researchers to study gene functions and disease mechanisms, and to develop treatments for diseases. Dr. Chen's group generated a mouse model carrying the mouse PITX1 gene which can be "turned on" when needed. These animals showed signs of muscle weakness and atrophy after three weeks of PITX1 over-expression. In addition, the muscles on one side are more affected than the other. Dr. Chen's group is currently studying these animals to first determine if the mouse is a suitable model for studying human FSH dystrophy. Using the mouse model, researchers may also learn how the expression of PITX1 leads to muscle weakness and atrophy, as well as whether a well known pathway involved in muscle atrophy is involved in this model. Once the above questions are answered, researchers will use this animal model to better understand the disease and other conditions causing muscle atrophy, and develop treatments for the disease.✧

Dr. Chen is the recipient of the FSH Society Marjorie and Gerald Bronfman Foundation Post-doctoral Research Fellowship Award.

A Letter from the New Chair, Board of Directors, FSH Society

October 2007
Dear Friends,

Following the passing of our beloved Stephen Jacobsen, the founding Chairman of the Board of Directors and one of the masterminds in the founding of the Society, it has become my privilege to serve as the third chairman.


William R. Lewis, Sr., M.D.

Having served on the board since the origin of the Society, I am familiar with the great progress of the organization in offering services to those affected by FSH muscular dystrophy as well as the extraordinary strides in mobilizing financial support for FSHD research, including some degree of awakening by the National Institutes of Health. We clearly have a long way to go in our unified efforts, which are in large part dependent on each of the members and supporters of the organization, but we are certainly seeing progress.

The recent move of headquarters to the Boston Biomedical facility and the addition of Nancy Van Zant as our highly experienced Executive Director will give significant additional impetus to our growth.

One arm of the Society which has perhaps not been fully appreciated is that of our extraordinary Scientific Advisory Board (SAB), which I regard as the "heart and soul" of the FSH movement. This group, composed of some of the best known scientists in the world, meets regularly to review and recommend to the board of directors the most deserving and promising projects among the many applicants for the funding provided by the Society. This work requires critical and time-consuming analysis of each application. As a liaison member from the board to the SAB I have been able to observe and appreciate the volunteer services of this group, services which we could not possibly otherwise afford on our present budget. In a recent communication, I pointed to our SAB as "arguably the most stimulating, insightful and prestigious FSHD research advisory group in the world." If you have the opportunity to meet any SAB member, please express your appreciation.

The Board extends its best wishes and thanks to each member of the Society.

Sincerely,
William R. Lewis, Sr., M.D.
Chairman, Board of Directors
Member, Scientific Advisory Board

Dr. Lewis is a neurosurgeon in Monterey, CA. He has been a member of the FSH Society Board of Directors since 1991. In 2000, Dr. Lewis, his son and also board member, William R. Lewis, III, M.D., and their families established a fund to support FSHD research.

October 2007

Dear Friends,

With this issue of FSH ***Watch***, we begin a format that communicates with our constituency promptly and more frequently. Look for ***Watch*** at least quarterly, including an annual donor report in the winter and a research and financial issue in the spring.


Nancy Van Zant

Each issue of the ***Watch*** will carry news of research, patients, physicians, advocacy, fundraising, and items that are timely for you. I hope you will let us have your thoughts and suggestions about our new ***Watch*** – your ***Watch***.

One of the standard features in our new FSH ***Watch*** is "Dialogue." In this issue, two patients and one investigator share recent experiences with the Society. "Dialogue" is an opportunity for individuals to have a conversation with the FSH community. We will also profile clinicians and new research, as we have in these pages.

Your gifts are very important to the FSH Society and to our community, and we want to keep you well informed about the work your gifts enable. The Society's ability to fund our research program and projects and to increase outreach and service to patients is dependent on you!

Sincerely,
Nancy Van Zant
Executive Director

P.S. *We could not have produced this issue without the contributions of investigators, patients, and others sharing their work and experiences. I will say thank you from the community to all of you who have taken time to begin our dialogue.*✧

✦ ✦ ✦

It is the editorial policy to report on developments regarding FacioScapuloHumeral Muscular Dystrophy (FSHD), but not to endorse any of the drugs or treatments discussed. We urge you to consult with your own physician about the procedures mentioned.

The *FSH Watch* is published by the FSH Society and distributed by mail to its members and supporters. All material is copyrighted and may not be reproduced without written permission. To be placed on the mailing list or to submit an article, please write to: Nancy Van Zant, Executive Director, FSH Society, Inc., c/o BBRI R353, 64 Grove Street. Watertown, MA 02472 USA. Articles may be edited for space and clarity. Every effort has been made to ensure accuracy in the newsletter. If you wish to correct an error, please write to the above address. Look for us on the internet at: www.fshsociety.org

Editors: Nancy Van Zant and Daniel Paul Perez. Editorial Assistance: Carol Perez, Jenny Lazzaro, Howard L. Chabner & Charles C. Perez. Graphic design and editorial assistance: Susan L. Stewart, ColoradoLasertype.com

FSH Society Funds Gene Carrier Study

Understanding the differences in families where some gene carriers are severely affected and others are not

By Patricia Arashiro, B.Sc., and Mayana Zatz, M.Sc., Ph.D.
Human Genome Research Center, University of São Paulo, Brazil

The clinical variability observed among FSHD patients is well known. In most of the cases the disease begins in the second decade of a patient's life; it is slowly progressive and can reduce life span. However, some patients may have a severe course, become wheelchair-bound and even have other manifestations such as hearing loss, retinopathy, cardiac involvement and respiratory disease. On the other end of the spectrum, some patients have only mild facial weakness and no other complaints during their lifetime.

Our research team in Brazil, as well as other investigators, observe that there is a difference in terms of severity of the disease between the genders. On average, there are more men severely affected. We also observe more women who remain asymptomatic, and who have no symptoms of FSHD throughout their lives. These individuals, who never develop the disease in spite of carrying the same FSHD mutation, seem to be concentrated in some families. A new research project that focuses on these asymptomatic carriers is underway in the Human Genome Research Center at the University of São Paulo. With FSH Society funding, we have begun a study to understand why some individuals are apparently protected from the more severe effects of the FSHD chromosomal deletion.

The Human Genome Research Center (CEGH) at the University of São Paulo is the largest center dedicated to genetic disorders in Latin America. Until now, we have seen more than 200 families with FSHD who were referred by physicians and hospitals, who read about us in newspapers or on the internet. Not long ago, we saw Pedro (not his real name), a patient who had a classical form of FSHD and who told us that his parents were first cousins. When we detailed his family history we found out that he belonged to a very large family with other marriages among cousins. However, Pedro told us that he had only three other affected relatives. Since FSHD is inherited as a dominant trait, meaning each affected individual has a 50% risk of having an affected child, the information about Pedro's family was intriguing. Therefore, we would expect many more affected family members.

Most of Pedro's relatives live in small towns, far away from our center in São Paulo, but we decided we must see them. We planned several trips and managed to examine and draw blood from most of his family members. Although we found that some had very mild signs of FSHD, of which they were not aware, most of them were completely asymptomatic. For that reason, it was not easy to convey to them why we wanted to draw blood and study them. Nevertheless, we were successful in explaining the purpose of our research, and all of them agreed to collaborate.

My Choices, My Chair & Hurricane Katrina

continued from front page

wonderful and loving husband, a beautiful daughter, bedrock parents and sister, and a life abundantly overflowing with love. My family provides a web of support from which I derive great strength and determination. This feeling is what provides me the strength to get up every morning, and the strength to know that I can make a difference.

All of us have struggles everyday. The decision is whether or not to focus on them and let the struggle dictate who we are and what we can or cannot do . . . or take our challenge head on.

All of us have struggles every day. The decision is whether or not to focus on them and let the struggle dictate who we are and what we can or cannot do . . . or take our challenge head on. Most people would assume that a wheelchair might be an obstacle in volunteering in a disaster shelter. But you never know until you try. In the Houston Astrodome my nickname became, "white girl in a wheelchair." It was a funny name, but I can tell you that the chair made all the difference. It put me at eye level with the thousands of evacuees sitting on a sea of green cots. It conveyed that we both had struggles and obstacles. It seemed to level the playing field both physically and emotionally. I had gone from loathing the days I had to use my chair to having an incredible respect for it.

The Houston Astrodome and other Gulf Coast venues were places for Katrina's displaced to come for support and shelter. Like other readers of ***Watch***, I have come to know the FSH Society as a place for "support and shelter." I have confidence that our collective strength, determination and efforts through the Society will lead to treatment and a cure for FSHD. My hope in sharing this story is that our Society members will never stop thinking of how to be of service and always look for ways to get out there and try and make a difference!✧

FSH Society Funds Gene Carrier Study

Upon analyzing all of the DNA samples we had collected, we had surprising findings. The first discovery was that Pedro had inherited one copy of the FSHD deletion on each chromosome 4, one from his mother and the other from his father. This was not unexpected since his parents were first cousins, but what was more fascinating is that his condition was not more severe than that of his relatives who had only one copy of the FSHD deletion. That is, two copies of the deletion had a lesser effect than having only one!

The second finding also had surprising results: although roughly 50% of Pedro's family members carried the FSHD deletion, most of them were asymptomatic. This observation prompted us to analyze other families whom we had previously studied in our center. We found that about 20% of people who have the mutation for FSHD do not have clinical signs of the disease. These asymptomatic carriers, who are predominately women, are present in about 30% of families with FSHD. Since only families with at least one affected patient are referred to our center, we do not know the exact frequency of asymptomatic carriers in the general population, inasmuch as they will not seek medical attention if they do not have at least one more severely affected relative.

We believe that these asymptomatic carriers may have some genetic mechanism that could be protecting them from the effects of the disease. The question before us is how to find it.

In order to address this issue, we decided to analyze the gene expression profile (i.e., how the thousands of genes each of us has, express themselves in a particular tissue, at a particular time, under particular conditions) in muscle samples from severely affected individuals, as compared to those who remain asymptomatic. However, the result of comparing muscles from two unrelated individuals would show countless differences, making it extremely difficult to pinpoint which genes may be influencing the FSHD expression. Therefore, we must compare muscles from members of the same family. We were able to find a number of families where closely related members carrying the same FSHD mutation had extreme phenotypes: one was severely affected and the other was asymptomatic. The next step was to obtain muscle samples from them. We were lucky and found three members of five Brazilian families (one severely affected, one asymptomatic carrier and one non-carrier of the FSHD mutation) who agreed to participate in this research.

We are very excited about this project. The comparison of gene expression from asymptomatic carriers and affected patients is a novel approach that could result in important insights. This study is currently underway in collaboration with Louis M. Kunkel, Ph.D., of Children's Hospital Boston and his research team. Our work will help gain insight into the genetic mechanism that possibly protects some individuals from the disease. We know it will also open new avenues for treating FSHD.✧

This research is supported in part by the FSH Society Research and Education Fund, including the William J. Conners, III, and Barbara S. Conners Charitable Foundation.

FSH Society Welcomes New Scientific Advisory Board Members

David E. Housman, Ph.D., SAB Chairman, welcomes two new members who provide exemplary leadership in clinical care and research in FSHD, among their many accomplishments and affiliations. We introduce:

- **Katherine D. Mathews, M.D.**, is a pediatric neurologist, University of Iowa Hospitals and Clinic; Director, Child Neurology Clinic; and co-PI on a project of the University of Iowa's Senator Paul Wellstone MD CRC, Iowa City, IA.
- **Kathryn Wagner, M.D., Ph.D.,** is the co-director of the Johns Hopkins MDAUSA clinic and co-director of the Johns Hopkins/University of Pennsylvania Senator Paul Wellstone MD CRC, Johns Hopkins Medical Center, Baltimore, MD.

We thank them and look forward to the service they will bring the FSHD community.

Website Makeover—Watch for It!

The FSH Society will launch a new website in the next few weeks. It will contain new content, an updated look, and improved navigation, but the same address: **www.fshsociety.org**. The Society is responding to your requests for additional

content, a searchable database, and a simplified structure that allows people to more easily find the information they seek. Thanks to Howard Chabner, Vice-Chairman, Board of Directors, for his assistance and advice.✧

The Journey Continues

by Don Burke

I last wrote for the FSH Society Watch in the spring of 1995 when I was in my late twenties. At that time, I shared my many globe-trotting adventures and my philosophy of never capitulating to the disease. I am happy to say that this philosophy has stood me in good stead even as my body has continued its downward spiral. In the ensuing years this attitude and approach to life has, to name but three adventures, allowed me to stand on the Great Wall of China, look into Costa Rica's Poas volcano, and serve lunch to 25 cyclists on the Chesapeake and Ohio Canal in a torrential downpour. Increasingly, however, my energies are devoted to the cerebral and the scientific. The expeditions into the Australian Outback I wrote about in 1995 largely satiated my wanderlust, and the disease's progression forces my continual evaluation of what I do and how I do it.

Don, a participant in Wyeth's MYO-029 trial, measuring grip strength.

A number of years ago I had the good fortune to meet comedian Brett Leake, who also has FSHD. Brett lives by the motto "with every closed door, a new one opens;" this simple phrase has stuck with me and indeed proves itself over and over . . . as I let something go, new and amazing opportunities invariably emerge.

This motto does not, however, eliminate the frustration and embarrassment of splaying oneself out across the concrete after having your legs collapse for no apparent reason other than tripping on some minuscule crack or uneven surface. These falls inevitably end up tearing up my clothes as well as my knees and elbows. This is particularly frustrating when it happens on my way into work while I'm wearing one of my best suits and when I have multiple presentations arranged for the day with no way to change clothes or hide the bandages. This motto also does not help when I can't get a dish out of the cupboard or execute the mundane task of replacing a light bulb. The best I can do is try to accept this reality, find the humor in it, be honest and forthright with those around me, and rely on the helpfulness and compassion of family, friends, colleagues and strangers.

In 2005, Wyeth Pharmaceuticals conducted a myostatin-inhibitor (MYO-029) trial and I was fortunate to be one of the study participants. This remarkable experience was both frightening and exhilarating. Here, for the first time in my life, I was interacting with a medical system that really seemed to understand FSHD, with personnel who were energized by advancing medical science and who were as interested in learning from me as I was from them.

I came to feel extremely close to the doctors, nurses, technicians and aides who brought this study to fruition. Even more remarkable, I benefited from this trial as measured through my own personal notes and observations. I could walk further, faster, and with greater dexterity at the end of the trial than at the beginning, which is an indescribable feeling. Regaining capability just does not happen with FSHD! Unfortunately those benefits have waned since the end of the trial. As of this writing, we anxiously await the formal study results and have our fingers crossed that my experiences were not an aberration. I feel privileged to have participated in advancing our understanding of FSHD and humbled to think that maybe, just maybe, I may have been part of enabling the first scientifically viable treatment for FSHD.

A number of years ago I had the good fortune to meet comedian Brett Leake, who also has FSHD. Brett lives by the motto "with every closed door, a new one opens;" this simple phrase has stuck with me and indeed proves itself over and over . . . as I let something go, new and amazing opportunities invariably emerge.

However, even if it is found helpful to those with FSHD, and approved by the FDA, MYO-029 is only a treatment. It may not correct the disease specifically but will attempt to systemically increase strength throughout the patient's body. The continued lack of understanding of the genetics and the pathophysiology of FSHD is maddening. As the underlying mechanism remains hidden and opaque, I have also begun exploring the potential of artificial muscles, exoskeletons, and other technological solutions that could bypass the need to fix the biological muscle altogether. The field is generally known as biomechtronics; MIT and the University of New Mexico, to name two, have fascinating programs with applicability to FSHD, and I have engaged these fields where possible in an effort to advance this cause.

I have also been fortunate to continue my association with the FSH Society by joining Dan Perez on Capital Hill on at least one occasion to

The Journey Continues

lobby for resources in support of FSHD and in attending several FSHD patient conferences. Unfortunately, I have lost two close friends to complications related to FSHD who were with the Perez family and me at the establishment of the FSH Society in the early 1990s.

Now in my early forties, I can look back without regret over four decades just as I always hoped, even as the disease continues its inexorable march into my lower extremities. How long until a fall does real damage – not just a skinned knee? Will I find myself on the floor without the ability to get up? How long until I cannot walk? How will this affect my career? What accommodations will I have to make at work and at home so that I can continue to be independent? Will my partner stay with me as I get weaker and need more help?

These are not questions for the average 40-year-old but are always at the forefront for those afflicted with FSHD. The disease's variable and unpredictable progression leaves each and every one of us wondering "how long." Friends, family, and the selfless love of my partner ease the trepidations. However, solving or ameliorating the effects of FSHD in the population needs money, focus, and energy beyond that which individuals can do so I continue to increase the awareness of, and interest in, joining the FSHD fight wherever and however I can.✧

Welcoming Jenny Lazzaro

The FSH Society welcomes Jenny Lazzaro as its newest member of the staff. Jenny joined us in early August as Office Manager in our Executive & Development Office in Watertown. She is also a student at Lesley University in Cambridge, MA, completing her B.S. in Counseling and Psychology, with a focus on Human Services. Jenny comes to the Society with a strong background in administrative support services and software proficiency. In addition, Jenny has had the pleasure of caring for two children with Angelman Syndrome while working as a nanny; she is a compassionate person sensitive to the needs of others.

Jenny Lazzaro

Born in Massachusetts, Jenny and her family moved to Maryland when she was in high school; in 2002, as an adult, she moved back to Massachusetts and currently resides in Cambridge. As an amateur photographer, Jenny enjoys exploring New England's quaint scenery. She is excited to be here and is looking forward to working with and learning from the FSHD community. If you would like to speak with Jenny, please contact her:

FSH Society, Inc.
64 Grove Street
Watertown, MA 02472 USA

(617) 658-7877
(617) 658-7879 (f)
jennifer.lazzaro@fshsociety.org

Tax-Free Giving to the Society from Your Traditional or Roth IRA

New rules let you turn IRA distributions into tax-free donations

Through December 31, 2007, Individual Retirement Account (IRA) owners age 70-1/2 or older can make a tax-free donation directly to charitable organizations such as the FSH Society. As a result of the Pension Protection Act of 2006, you can donate a portion of an IRA to your favorite charity and owe no tax on the withdrawal. Amounts transferred to charity count towards the required minimum annual withdrawal, yet do not add to your taxable income.

The "rollover" rule

Under the old rules, you were required to pay income tax on your IRA distributions—even if you donated them to charity.

Now you can "rollover" the amount of your distribution (up to $100,000) directly to the charity of your choice—tax free. And remember, IRA assets left to heirs may be subject to estate and income taxes, so this is a unique opportunity to avoid both taxes.

How to qualify

Who? You must be at least 70-1/2 years of age on the date of the gift with traditional or Roth IRAs [not 401(k) or 403(b) plans, nor other tax-deferred accounts].

When? Tax Year 2007 Only. Transactions must be completed prior to December 31 of this year to qualify.

Amount? You may gift up to $100,000 per person this year. (If two spouses have IRA plans, each may make gifts up to that limit.)

How? Gifts must go to a qualified public charity, such as the FSH Society.

Funds must be transferred directly from your IRA to the chosen charity, rather than cashed out and then sent to the charity.

Distributions will be excluded from gross income for income tax purposes. They cannot be claimed as deductions but will result in a greater benefit to you and your favorite charity.

Maximize the value of your contributions

Please consult with your tax and financial advisors to determine how a charitable IRA rollover might work for you.✧

Giving Attention to Infantile FSHD (iFSHD)

*Meet **Katherine D. Mathews, M.D.,** Pediatric Neurologist, University of Iowa Hospitals and Clinic, Iowa City, IA; Associate Professor of Pediatrics, Roy J. and Lucille A. Carver College of Medicine, University of Iowa, and Director, Child Neurology Clinic*

Katherine Mathews, M.D.
Reprinted with permission, Roy J. and Lucille A. Carver College of Medicine, University of Iowa

Q *How did you become involved with facioscapulohumeral muscular dystrophy and children with FSHD?*

Dr. Mathews: I became involved in the FSHD community in approximately 1990, when I was doing fellowship training in human genetics. Throughout my medical training I was encouraged by mentors to take care of people with neuromuscular disease, and I had an interest in the muscular dystrophies. In 1990, FSHD had just been localized to chromosome 4 by genetic linkage analysis. My research mentor was an expert in the genetics of chromosome 4. Thus, the study of FSHD seemed a perfect match for the lab's interest in chromosome 4 and my own interest in muscular dystrophy.

I was aware of several large Iowa families with FSHD that might be useful in further refining the genetic cause of FSHD. Fortunately, the families I contacted were interested in participating in the research. My early work consisted in part of traveling around Iowa and surrounding states, meeting families, doing examinations and collecting blood samples. As I listened to the stories of patients and families with FSHD, I learned a number of things. I was quickly impressed with the fact that even when the earliest signs of FSHD are subtle, family members are usually very accurate in knowing who is affected and who isn't. I also quickly learned that although FSHD was presented in the textbooks as a relatively mild or benign type of muscular dystrophy, it often has a dramatic effect on people's lives, and in many cases is not mild.

Q *What can we learn from early onset, or infantile FSHD (iFSHD)?*

Dr. Mathews: As a pediatric neurologist, I have a longstanding interest in children with weakness due to FSHD. I continue to think that the earliest onset cases, with the most diverse disease manifestations, are likely to hold clues to understanding this complex disease. It is also possible that there is more to learn about the clinical features of FSHD from people affected early in childhood. Most of the literature about FSHD is about people with later onset disease. Because no single medical center or physician takes care of a large number of patients with early childhood onset FSHD, some rare features might be overlooked. For example, the Japanese reported seizures and mental retardation in some children with very early onset disease. It is not clear if this association is found in other populations.

Q *Can you tell us more about iFSHD?*

Dr. Mathews: Children with early onset disease require more comprehensive care than more mildly affected people. Severe facial weakness, often combined with hearing loss, can make speech articulation difficult. When combined with a lack of facial expression, this can lead to significant difficulty with social interaction. Speech articulation problems can also interfere with employment or school. Referral to a speech therapist who has experience with this sort of speech problem can be extremely helpful. In my experience, many school speech therapists are not comfortable with this type of problem. As a result, at the University of Iowa neuromuscular clinic, we have a relationship with a pediatric speech pathologist at the University who sees all of the FSHD patients with this need.

The relative lack of facial expression is often mistaken for depression, anger or given other inaccurate interpretation. Health care providers need to insure that children are not inappropriately treated (or not treated) for emotional problems because of this.

Giving Attention to Infantile FSHD (iFSHD)

Q What should parents know about testing for hearing loss associated with iFSHD?

Dr. Mathews: All children with FSHD should have screening for hearing loss. For older children, school screening is adequate. For very young children, formal testing is recommended, particularly if there is a speech problem.

Q What are your thoughts on eye syndromes associated with FSHD?

Dr. Mathews: Children with FSHD should be examined by a pediatric ophthalmologist. Some recommend fluorescein angiography, however, this requires prolonged sitting and is not easy or comfortable for FSHD patients. For this reason, if the dilated eye examination is normal, I don't recommend further testing.

Q Is exercise recommended for children with FSHD?

Dr. Mathews: Exercise, within limits of safety and reasonableness, appears to be helpful in FSHD. (This is not true for some other types of muscular dystrophy.) It is also important for children to participate in activities with their friends and to be independent. The decision about when to offer power mobility requires balancing exercise and the benefits of walking with independence and social activity. Bracing (ankle-foot orthotic, corset) is done to improve function or decrease pain. If a brace or other support does not make something better for the person with FSHD, it probably should not be used.

Q Are there cardiac or pulmonary/breathing issues in iFSHD?

Dr. Mathews: Heart problems or breathing problems are rare in children with FSHD. Screening (ECG or echocardiogram) before surgery is appropriate.

Q What are your general observations on progress in diagnosing, understanding and treating FSHD?

Dr. Mathews: In addition to these common issues, each child with FSHD that I see brings some individual problem. Sometimes it is unclear if these are related to FSHD or are some unrelated issue. Access to multiple pediatric specialties is often very helpful.

There has been definite progress in FSHD, both in understanding the science and in the care of patients. The intersection between these is seen most clearly in diagnosis. When I began collecting blood from FSHD families 17 years ago, there was no test for making a diagnosis. Diagnosis was based on examination, EMG and in most cases, a muscle biopsy. When the 4q35 deletion was identified, there was great uncertainty about the accuracy and usefulness of this for diagnosis. Today, the genetic test is readily available and for most people it is quite accurate. Tests like EMG and muscle biopsy are rarely necessary.

FSHD is a very complex disease at the level of basic science. **It appears that the basic mechanism of FSHD is going to introduce some new concepts in human genetics.** Each year, a few dead ends are reached; a few new ideas are introduced and investigated. Each year we get closer to putting the whole picture together.

Until we have a specific treatment, management involves identifying and treating problems as soon and effectively as possible. For children who are more severely affected, this requires access to the expertise of multiple specialists.

The University of Iowa neuromuscular clinic is in the Department of Pediatrics. It is an MDAUSA clinic. About one half of our patients are children under 18. Many of the adult patients are young adults who have been followed in the clinic since childhood. In addition to weekly clinics at the University, we do approximately13 outreach clinics per year around the state. Clinic personnel include Christina Trout, a nurse genetic counselor and case coordinator, Carrie Stephan, research nurse coordinator, and Kris Baldwin and Shelly Mockler, physical therapists. Many clinic patients also meet with social services. In addition, specific care providers in other specialties have interest in patients with muscular dystrophy and take referrals from the neuromuscular program as needed. These include both adult and pediatrics specialists in cardiology and pulmonology, speech therapy, psychology, and orthopedics. We are very interested in caring for children with FSHD and helping to manage the full range of problems that children can have.✧

Dr. Mathews is a new member of the Society's Scientific Advisory Board. A native Iowan, she received her B.S. and M.D. degrees from the University of Iowa. She completed her residency and fellowships in child neurology and genetics at the University of Iowa.

Do You Know What It Means To Miss New Orleans?

By Melanie Ehrlich, Ph.D.
Tulane University, New Orleans, LA

After cooking all of the food in our freezer and packing most of the food in the refrigerator on Sunday morning, August 28, 2005, we left for my lab and office on the fourth floor of Tulane Medical School in the afternoon. This was our fifth evacuation there since 1972 prompted by a hurricane alert. We brought some clothes, our foam sleeping mattress, some sheets and towels, flashlights, and Monopoly, which had served us well previously as a way to ease the tension of these hurricane alerts. From phone calls and email messages before Tulane's server was shut down on Saturday, I knew that all my students and postdocs had safely evacuated.

Melanie in the garden of her new home in Gentilly (New Orleans), May 2007.

My husband Ken and I thought as we left our house that this could be the last time we would see it, although like the previous hurricane alerts we experienced, there had been no direct hits to New Orleans. This one was so very different. As soon as we arrived at my office, I consolidated important tissue samples from my three ultrafreezers to two in my fourth floor lab. We collected water in five gallon carboys and six liter flasks, enough to last more than a week. I tended to several FSHD muscle cell cultures in my incubator. After enjoying dinner heated in my office microwave oven, we slept through the hurricane that night on our foam mattress in my cell culture room, far from windows. There were over 100 other researchers and their families or friends in the two research buildings at the Medical School.

On the Monday morning after the hurricane, the sun was shining, and we had emergency power. We took a walk for a few blocks. The damage from the hurricane was not very bad at all. It was only later that the horror began, when, by evening, we saw filthy water rise to three feet all around the Central Business District. We watched as the water's gradual rise slowly deprived us of power, running water, working lavatories, and finally all telephone communication.

Many of us helped each other trying to get the facilities manager to acquire more diesel fuel set aside for the medical school generator and watching TV news when we had emergency power. Also, Ken and I helped two faculty members to save many of their precious samples in our ultrafreezers after the emergency generator power failed for theirs. On Wednesday, when it was clear that the emergency generator would be off for weeks, we moved the best samples we could quickly locate by flashlight, including muscle tissue samples, kindly shared for my FSHD research, to the little bit of remaining room in large liquid nitrogen-cooled tanks. Despite the dark gloom, we shared room temperature-brewed tea and lemon with a number of newfound friends at Tulane and had a great candlelight dinner with wine, salmon, bread, muffins, and cupcakes that I had previously cooked at home.

On Thursday at 7:00 a.m., we were instructed to go immediately to the garage, across the second floor bridge. We had no communication with the outside world except for one radio. We had been limited to one small piece of luggage per person in the garage in anticipation of squeezing as many of us together as possible into helicopters. I gathered my laptop computer, some of my most useful research notes, my thumb drives, and I filled a small suitcase with clothes and gluten-free food because I have celiac disease. Almost all the people in the garage awaiting helicopters were polite and fairly calm, making new friends and sharing stories.

From our fifth floor perch in the garage there was major flooding as far as the eye could see. It appeared that the unique and wonderful City of New Orleans would be no longer. Equally distressing was the sense of abandonment because we found out that we were not to be rescued by the government but by helicopters rented by the corporation that owns Tulane Hospital. After spending 26 hours in a filthy garage attached to Tulane Hospital and watching the incredible dedication of doctors and physicians attending to Tulane and Charity Hospital patients under horrible sweltering third-world conditions, we flew to safety across Lake Pontchartrain and eventually to a shelter in Lafayette. HCA, the administrator of Tulane Hospital, then provided airfare for us to any place in the continental US. We went to the home of our daughter and her family in Farmingdale, NY.

Like Sherlock Holmes, Daniel Perez tracked me by way of the internet to my daughter's mother-in-law's phone number to find out how I was and to offer assistance. Following this, Dan sent an email to the entire research community requesting relocation assistance. I was so fortunate to receive many offers of lab space, once we rejoined civilization. Ken and I chose to work in Baltimore, where I was gen-

Do You Know What It Means To Miss New Orleans?

erously hosted in the lab of Robert Bloch, Ph.D., well-known FSHD researcher and patho-physiologist at the University of Maryland, and Ken, also a scientist, in a lab at Johns Hopkins. Many members of the FSHD community, including Stephen Hauschka, Patrick Reed, and FSH patients, were gracious to me. Members from my lab came to join me in Baltimore, and we made good progress in our research.

Over the first few weeks after our helicopter trip, I learned that what we lost in the five feet of water in our house, already three feet off the ground, was just "stuff." Then, in Baltimore for almost one year, I learned a tiny bit of what Holocaust survivors experienced when they came to this country. I walked around with laughter and normalcy surrounding me, but inside I carried the burden of the horrible injustice that killed thousands, swept away vibrant neighborhoods, made a moldy mess of much of a world-famous city, destroyed people's livelihoods, stressed families to the breaking point, and made virtual refugees of hundreds of thousands of shocked victims. In New Orleans, almost all of the serious damage was caused by faulty flood protection provided by the U.S. Army Corp of Engineers. Officials had covered-up some damning reports about the inadequacies of the levees dating back to the 1980s.

While in Baltimore, we contracted and had built a modular house to replace our original house. As of September 1, 2006, we were back in New Orleans, the only inhabited house on the block. Ours is a new, cheerful, elevated house. With horrid infrastructure problems, well-founded concerns about crime, schools, and medical care, rebuilding issues, and Katrina stories, we are never at a loss for compelling topics of conversation with New Orleanian friends and strangers. In terms of scientific research, back again at Tulane, my group has made an exciting discovery about the part of the chromosome most closely involved in FSHD.

At the end of September 2006, sandwiched between the long and inspiring hours of research, I began my first civic engagement ever. I founded a grass-roots organization, Citizens' Road Home Action Team (CHAT), to improve an under funded, problem-ridden federally financed program for homeowner compensation. As a scientist, I will not be fooled by politically or commercially inspired illogic. This has become my late-night, weekend, and lunchtime "hobby" and has landed me in newspapers and on TV (although we still don't own one) more times than I care to count. All the extra work is worthwhile because of the people whom I have met along the way and the sense of their valiant struggle against the injustice that so obviously impedes progress.

Now we have passed the second anniversary of Hurricane Katrina. Here life is divided into "pre-K" and "post-K." The federal program to enable Louisiana homeowners to rebuild is running out of money and tens of thousands will be stranded if Congress does not make up the shortfall in September. Yes, there is global warming and Louisiana's coastline is eroding but our country must learn to tackle these problems here and now. Only decades from now, many other coastal and river metropolitan areas may face similar challenges. If our country cannot make amends to Louisiana's victims of the levee failures of two years ago, then who will be able to count on help after earthquake, infrastructure failure, hurricane, flooding, or terrorist disasters?✧

Dr. Ehrlich is the recipient of the FSH Society Marjorie and Gerald Bronfman Foundation Post-doctoral Research Fellowship Award. She and her lab have made extraordinary progress on the chromosome-looping model of FSHD, and they are the only people working in this research area.

2008 International Patient/Researcher Network Day: Get Involved!

The next Patient/Researcher Network Day will be held in the U.S. in summer 2008. Planning is underway and the location and date will be announced soon. Please consider how you can help.

We need volunteers to help with many activities, including fundraising. We will be delighted to have your ideas about the program and its format and any other suggestions you would like to make. Contact **Jenny Lazzaro, (617) 658-7877** or **jennifer.lazzaro@fshsociety.org** with anything you would like to share.✧

Are You a Member of the FSH Society?

The FSH Society is a world leader in combating muscular dystrophy. It has provided $2 million in seed grants to pioneering research worldwide and it has created an international collaborative network of patients and researchers.

If you are not already a member, won't you join in this effort? Please return your membership gift in the envelope enclosed inside this issue of ***Watch***.

Thank you!✧

On September 4, 2007, BELLAGIO Hair and Skin Care, Brighton, MA, donated proceeds from one day of haircuts and styling to the FSH Society and the Cancer Center at Caritas St. Elizabeth's Medical Center. Pictured here are salon owners, Pat McKee and Anthony Faniants, and stylists, Sandra Greenstein, Colleen Hartnett and Laura Sooley. Thank you to all our friends at Bellagio—the owners, stylists, and patrons!✧

Continuing Your Support

We have enclosed an envelope should you wish to make a donation to the FSH Society. Or, if you wish to make an immediate gift by credit card, please call Nancy Van Zant, (617) 658-7878, or Jenny Lazzaro, (617) 658-7877.

Thank you for your support.✧

Ways to Give

Here are some ways you can help support FSHD research and the FSH Society as you consider the gifts you will make as 2007 draws to a close:

- Make a holiday gift in honor of a loved one or special friend. The Society will send a holiday greeting to that individual.
- If you're thinking of donating stock, please alert us to your intentions, or call for details.

We will be happy to answer your questions at: **nancy.vanzant@fshsociety.org**, or **jennifer.lazzaro@fshsociety.org**, or at (617) 658-7877 or -7878. Thank you!✧

Do You Have an Idea for a Fundraiser?

Call the FSH Society office at (617) 658-7877 or -7878 if you have an idea about how you might raise funds for research.✧

FSH Society Members: Reach Out to Others through Neurologists

As more information about FSHD becomes available, as the Society develops more educational materials, and as we anticipate new clinical trials, we are eager to reach more patients with FSHD and to work with their physicians. Patients continue to tell us about their difficulty in reaching a diagnosis.

Can You Help?

The Society has developed an introductory letter and package for neurologists positioning the FSH Society as a resource for current information on FSHD as well as providing materials that neurologists can share with patients. We may also do a mailing to neurologists, but you are our best ambassadors. If you would like to have materials to give to your neurologist or other physician, introducing the FSH Society to other patients, please return the enclosed goldenrod form, email: **jennifer.lazzaro@fshsociety.org** or call (617) 658-7877.

You will be assisting patients, their neurologists and other physicians, and you will help to increase the FSH Society's membership. You will also be helping to make faster progress in research, clinical trials, and clinical management.

If you have other ideas about how to reach more patients, or if you would like to have materials to make your own contacts with patients, we can provide that information. We need your help in reaching out to people with FSHD while respecting patient confidentiality. The surest way to gain access to clinical trials, new treatments and drugs is if we have a large, organized and reachable constituency.✧

FSH Society, Inc.
64 Grove Street
Watertown, MA 02472 USA

FIRST CLASS MAIL
U.S. POSTAGE
PAID
CHELMSFORD, MA
PERMIT NO. 105