

**“The Role of Parent Organizations in 50.1:  
Patient-tricity in Research, Advocacy, and Care Practices”**  
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Let me begin with this caveat: I don’t think of my child with Rett syndrome as a “patient” on the average day, and I don’t think many other families do either. However, researchers, allied health professionals and policy makers do. To them, our children are patients who need treatments, support, and a cure. To us, they are children who deserve a chance. There are times when the research being funded, or the types of things studied, gets off-track from outcomes aimed at delivering our children with Rett syndrome better lives. Consequently, when I was invited to give a talk in Vienna to scientific and parent leadership from around the world about the continued importance and relevance of Parent Organizations like Rettsyndrome.org in the digital age, outlining some important goals for us, I chose the buzzword “Patient-tricity” for the title in order to connect with the audience. But this message applies to all of us.



**RETT 50.1 – Vienna, Austria - September 15-17, 2016**

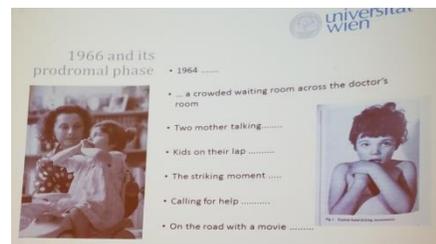
In September, we gathered to commemorate Dr Andreas Rett on the 50<sup>th</sup> anniversary of his first publication describing this unique syndrome, to “[look into the past](#)” towards a vision of the future”. We owe so much to Dr Rett of Austria, and the handful of other keen observers like Dr Hagberg of Sweden and Dr Segawa of Japan for taking notice of our Silent Angels

decades ago. We celebrate them as professionals for speaking and writing about what we parents have always known in our hearts:

**ALL IS NOT LOST**

Our children are worthwhile. Despite their outward appearance of inability we know they have thoughts and feelings, a place in our world, and a will to live well into adulthood. Our earliest founders thought Rett syndrome was degenerative. This was [disproved in the late 1980’s](#), and in the 21<sup>st</sup> century we can now [document extended longevity](#) through improved health management. Progress has been made, but how much and in what areas?

As parents, it is our obligation and our deepest dream to help mend their bodies and minds which did not start broken! Most of us brought home the most beautiful infants from the hospital. We all thought we had escaped the dreaded worry “just let her be born healthy”. Healthy she was! But with a twist of fate, the march of time, and the onset of what we call “the regression period”, we watch again and again in disbelief as skills are lost, as tears and screams and sleepless nights become the norm and with shared heartbreak we reassure new parents that this period is likely to only be temporary, that it will get better, and they will get better at this. It is truly heartbreaking to be unable to console your own child. We don’t know why they cry or scream during the “regression period”, and parents spend countless days weeks months traveling from exam room to exam room seeking help and answers. As a patient foundation, we ask the research community to help us find better solutions for this stage.



Without Dr. Rett and countless others who have built careers continuing his legacy, we may have believed that a vaccine or a high fever or illness had stolen our children’s abilities. But thanks to the groundbreaking discovery of the [genetic association of the MECP2 gene](#) in Dr Zoghbi’s lab at Baylor College of Medicine in 1999, we know that it is not our fault. While this is some consolation, it does not make the evaporation of skills any more bearable or acceptable. Perhaps it is even a bit more unbearable because what consolation is “random”? In the case of Rett syndrome, this lottery is one that no one wants to win.

**RESEARCH MUST ALWAYS BENEFIT OUR CHILDREN**

In today’s world, researchers can build their entire CV around studying MECP2. They could potentially make a breakthrough discovery without ever meeting a child with the actual disease! What would Dr Rett have to say about that? I can only imagine. I hope he would say “Science is a vacuum without purpose. Only meet a child with this syndrome and you will have the purpose you need. It is in their eyes. Please, meet the girls.” **And this is one of the very important jobs of parent associations. It was true 30 years ago, and it holds true today. We bring our children and our journey into the light of day and beg the world to see what we see, to care about what we care about.**

The field of neuroscience did not exist in Dr Rett’s time! It was in its infancy when the space program came of age, and look how far it has come. The science and technology today in 2016 is mind-boggling. The entire human genome is mapped. Stem cells can be grown in a petri dish. CRSPR gene editing may be able to manipulate gene function. High through-put drug screening, animal models, replacement gene therapy, synthetic protein replacement, the understanding of neuroplasticity and cognitive therapy – the stuff of science fiction is perhaps reality! The brain is the last frontier of science. It is the most complex, the most elusive, mystifying organ of the human body. It is the urgency of parents partnering with professionals who have made the connection that by studying the Rett syndrome brain, we may unlock the secrets to other bigger diseases, and maybe even the secrets of the healthy brain. What motivation to study Rett syndrome! Call us lucky I guess.



**We welcome other fields to take interest, but the research that we fund and that we enroll in must always ultimately benefit our children as safely and as quickly as possible. We must stay focused on Rett syndrome and related disorders. We ask that our funded scientists do as well.**

**KNOW HISTORY**

The newest frontier which Rettsyndrome.org has broken into is with the U.S Department of Defense because you see, they have hundreds of millions of dollars and motivation to help injured soldiers, and Rett syndrome occurs because of a biochemical injury that also occurs after a period of normal development. Did you know that the ancient Greeks believed that the heart was the center of intelligence? This was generally accepted until Galen

(129 AD – 216 AD), a physician to Roman gladiators, observed that his patients lost their mental faculties when they had sustained damage to their brains. His studies, observations and documentation of the brain and nervous system were followed by medical students until well into the 19th century. So you see, there is a strong link of brain studies to the military, and it continues today to our benefit. **It is the job of private foundations like [Rettsyndrome.org](http://Rettsyndrome.org) and others to make these connections.**



Without Dr Rett, we would not have a name for this disorder. Without physicians and researchers from around the world - and I mention especially our own Dr Alan Percy, Dr Walter Kaufmann and Dr Huda Zoghbi in the United States - we would not have the Natural History progression of this disease characterized, nor would we know the gene that causes it. And without the passion and urgency and heartbreak of parents driven by the belief that an essential part of our beautiful children is not lost to time, where would we be? We stand here on the shoulders of giants.

***In all of this time has anything changed?*** While our children can still suffer with constant hand-wringing; scoliosis; bloated stomachs; constipation; seizures; anxiety; disrupted sleep; irregular respiration...still suffer from all of this, yet we have gtubes, spinal fusion surgery, seizure medications, therapy programs and devices to help with more nourished bodies, loving families, integrated children....communicating through eye gaze computers and living longer life spans!!!

**SEE WHAT WE SEE: PRE-REGRESSION AND ADULTHOOD**

It is not enough. Only a fraction of children in the most advanced health care systems and with the most resilient and resourceful caregivers realize these benefits. The rest do not. **It is our job as parent associations to bridge and synthesize our knowledge of how to care for our children and spread that knowledge! Much work of the original parent associations and of our founding physicians to first care for our children must continue today with an expanding scope.**

Diagnoses today can often occur PRIOR to regression! So we MUST ask: How can we better intervene *before* skills are lost? And in the US, we have as many women with Rett syndrome over the age of 18 as we have under the age of 18! What are the issues of womanhood and disorder progression that we need to be mindful of? It is most every parent’s fear that their child may die before them. But for us, it is an equally dreadful fear that they will outlive us! **We have much to study and offer as way of help to the child pre-regression, and also the adult with Rett syndrome. As private associations we beg you to work with us, to see what we see, to live what we live, and help. It is wonderful that our children are living longer, but we need them to live BETTER!**

As you can see, we parents are more motivated than ever before to change the future that this mutated gene wishes to dictate for our children, and for very real reasons. And so I quote my favorite rare disease friend who says often **“there can be nothing about us, without us”**.

As we stand here and look back at 50.0, we also stand at the door looking to 50.1 We must understand where we came from in order to know where to go. Dr Rett was an advocate for medical care, for therapy, for rehabilitation. To walk, to smile, to be loved. This was groundbreaking innovative thinking fifty years ago! Fifty years ago adults and children, healthy or ill, were treated by the same doctors, with the same practices. Over fifty years ago, beyond identifying our syndrome, Dr Rett was part of a new movement in medical circles who believed that the child’s brain is different from the adult’s brain, and that children need different treatment approaches than adults. He believed that they deserved doctors, hospitals, and clinics that would treat their developmental age, not treat them as little adults. This gave rise to the field of pediatric neurology. And **parent advocates took up this charge, and the policies of education and health and family changed. Today, we must stay ever vigilant that our Silent Angels have our voices to protect and encourage them to strive, to walk, to eat, to sleep and to communicate! They have their whole lives ahead of them. We must help them be as strong, and as healthy, pain free and as emotionally grounded as they can be.**

#### **RESEARCH ADVOCATES - “NOTHING ABOUT US, WITHOUT US”**

**Parent associations today have another mission to accomplish that Dr Rett could only have imagined in 1966.**

For you see, the European Brain and Behaviour Society was only founded in 1968, and the Society for Neuroscience in 1969. With the birth and growth of neuroscience and biotech in the last fifty years, we are now in an age where these theories are bearing fruit. We live now in a very expensive age that whispers “cure”. That speaks of “reversal”. Rett syndrome lives at this cutting edge precision moment. Why? How? Because we are the little syndrome that could. We are the Rosetta Stone of neuroscience. Our gene, the MECP2 gene, holds such great promise towards understanding the regulation of brain function. We are a goldilocks paradigm. Too much MECP2 as in MECP2 Duplication is not good. Too little when you have a Rett syndrome causing MECP2 mutation or deletion is also not good. We are a single gene on a single chromosome and this disease can be replicated, it can be reversed, it can be fixed. We can get it “just right”. We are a model worthy of study.

As the world becomes a more complex place, and science is as equally about discovery and human health as it is about complex pharma deals, technology patents, rising costs of healthcare and a battleground of over 7,000 rare diseases fighting to be seen, we must bring in more talent. **It will take more than parent passion to move the field forward in 50.1. We need to partner with scientists who have been on the bench, who have negotiated with the FDA, who have walked the halls of the National Institutes of Health. Private foundations in 50.1 must be savvy investors of donor money. Rettsyndrome.org recognizes this and has invested in intellectual capital by hiring Chief Science Officer Dr Steve Kaminsky and grants manager Dr Janice Ascano who have discerning minds and a very broad worldwide network to tap so that our dollars can go farther.**

#### **FUNDRAISERS AND RECRUITERS**

No matter what our cultural norms are about this, we cannot leave the scientific funding to one group, or one country. We all must contribute, and we all must support transparent reporting of results, powered by a meaningful number of participants and reproducible results. THAT is Research with Results! We ask our top investigators to recruit and mentor new scientists into our fields who are as passionate as we are.

## MEETING RESEARCHERS WHERE THEY ARE

### NATURAL HISTORY STUDY

In the early 2000's I met Rett syndrome when my daughter was diagnosed. The first drug studies were underway. Many of you may remember the Folate-Betaine study or maybe L-Carnitine. These studies did not have the impact we had all hoped. That is OK. Science succeeds where it fails. In that time, our U.S. parent foundation rallied round the Natural History Study. Twelve long years of hard work to conduct the largest physician hands-on patient study ever for Rett syndrome to establish baseline statistics about our disorder. There was no glory in that work. The physicians had to travel to sites with paper forms in hand, on planes because of patient data privacy protections. BOXES of papers! Sensitive to the source of our funding, they travelled Economy class and stayed in modest hotels. Parent volunteers at hospital sites across the United States filled ice chests, served home-made lunch, entertained siblings, booked hotel rooms, gave rides to and from airports, and cleaned up spills and messes so that research could progress and valuable dollars could be maximized. We met researchers where they needed us to be. That was life and the quiet progress of the early 2000's!

### CLINICAL TRIALS

Now, in 2016, we have 8 clinical trials for Rett syndrome active in [clinicaltrials.gov](http://clinicaltrials.gov). Because our **private foundation worked closely with the pharma sponsors and regulatory agencies, 2 of these trials sponsored by [Rettsyndrome.org](http://Rettsyndrome.org) are MULTI-SITE trials. Again, a huge silent undertaking that few realize or appreciate the true magnitude of. We are paving the way of Research with Results. Because our parent foundation asked parents to trust us and to participate, we have a well-characterized disorder based on real physician exam. This goes well beyond a patient registry. This is a true patient database of over 1,200 participants. Research with Results!**

### CLINICS

Also during this time of the early 2000's, we took notice of the need of more clinics to serve families, and to help bring research from “bench to bedside” as they say. We have now fostered the growth of 22 Rett specialty clinics in North America! Parent foundations articulate the need, spark the fire, and sustain the growth through relationships and referrals to these invaluable clinics.

## COMMUNICATION

And in this time, communication technology has also evolved. I watched first-hand as the early adopters of eye gaze technology came to these early clinics, steering their child's wheelchair with one hand, while pulling a wagon with the largest heaviest earliest eye-gaze computer systems that had such short battery lives. If children wanted

to communicate, they had to stay close to an electrical outlet. Parents programmed these themselves. These had zero communication software for kids. Parents trying to convince others that their child really was communicating and breaking into tears when we said “we believe”!

Then the first iPad came to market in 2010, and barely a year later Rettsyndrome.org brought the first session on “Apps” to our conference. Parents demanded “Apps” that would work for their child. It was dizzying! Most of them didn’t even know what an App was, but the allure of affordable hi-tech communication beyond PECS and a YES/NO choice was discovered. As this technology progresses, we are seeing children at the earliest and oldest of ages communicating, reading, and starting to write. Incredible! Yet we still have no cognitive test to prove what we know. It’s in their eyes. We know it, but [we ask science to help determine and document the true cognitive levels of our children.](#)

### **FULL-SPECTRUM PROGRESS**

**In closing, parent associations must demand simultaneous research on many levels: study genetics and try to fix the root cause, and while we do that, we must help our children who are living each and every day with this disorder. We must do our best to find new or re-purposed therapeutics that will help symptoms like synaptic growth and connections, epilepsy, breathing, reflux, constipation, digestion, anxiety, sleep, movement, AND continue to challenge physical, occupational, and cognitive therapies so that our children can reach their highest potential. Why? Because they deserve this. It is in their eyes. They want, they desire, they need, they deserve.**

The times ahead are great. Filled with so much potential and so much hope. We are light years ahead of where other diseases dream of being. All because of those who have come before us.

As parents, we are motivated to stay in the light of day, to study, to research, to try. Our children are worth it. As Dr Rett said, “it’s all in the eyes. Take one look and you can feel it. All the love is in their eyes.” We will continue your legacy Dr Andreas Rett!

From Rettsyndrome.org and all the parent associations and families across the world, we are deeply grateful to Dr. Michael Freilinger, Dr Peter Maarschik, the Medical University of Vienna and the Medical University of Graz for being such gracious hosts in Vienna, and for taking the time and effort for all of us to pause for this moment, to celebrate Dr Andreas Rett and our shared accomplishments, and for highlighting in this incredible meeting of all the important work still before us.

Thank you.

We’ve made a lot of progress, and we are delivering on our mission for real treatments and empowering families while we work towards our ultimate mission: a cure!

## **Role of Family Foundations**

### **Serving the Community**

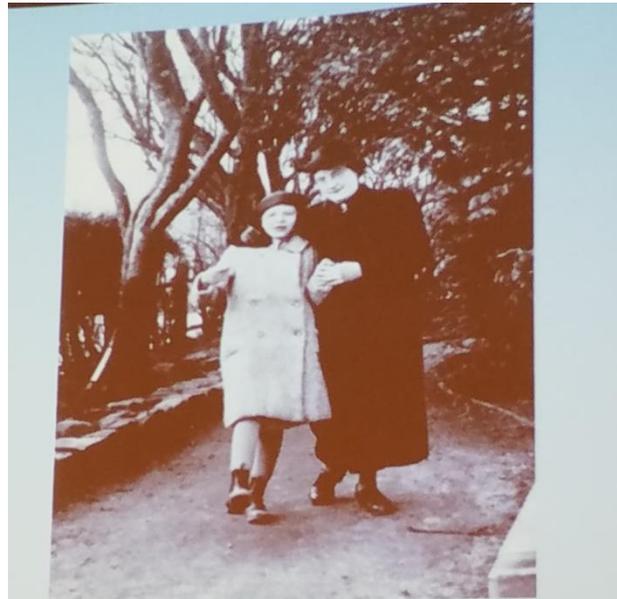
Information  
Compass  
Support  
Encouragement  
Connectivity

**Advocacy**

Research  
Policy  
Outcome Measures

**Understand, Grasp, and Fuel Progress**

Grants  
Symposiums  
Meetings  
Papers  
Consortia  
Patient Databases  
Pharmacologics  
Proteomics  
Metabolites  
Genomics



A girl with Rett syndrome around 1937