

**Red Sox Honor
Cure Alzheimer's Fund**
to Raise Awareness
About AD and Research

**Beginning at the End:
Portraits of Dementia**
Photographer's Exhibit
Connects Art & Science

**Colonna Elected to National
Academy of Sciences**
Recognized for Outstanding
Contributions to Research

CURE ALZ UPDATE

LATE SUMMER SEASON 2019



S.H.I.E.L.D.
6 Steps You Can Take Now
for Brain Health

S.H.I.E.L.D.

6 Steps You Can Take Now for Brain Health



There are 50 million people worldwide with Alzheimer's disease, and while much remains mysterious about Alzheimer's, progress is being made. Many of our researchers are investigating lifestyle activities and interventions to determine which would assist with keeping our brains as healthy as possible for as long as possible.

Dr. Rudy Tanzi of Harvard Medical School and the Chair of the Cure Alzheimer's Fund Research Leadership Group says we know more than you might think about how to keep our brains healthy. The good news is that there are proven ways to reduce the inflammation in the brain that is a hallmark of Alzheimer's disease, and he refers to six steps everyone can take as a **SHIELD** for their brain.

SLEEP

The impact of sleep on Alzheimer's disease development has been studied extensively. During sleep, your brain has a natural system for clearing out the debris that builds up and can be destructive, including amyloid beta plaque and tau. When there is too much plaque in the

brain, cell function may be compromised and the plaque can bind to nerve cells, harming them over time. Lack of sleep interferes with the brain's ability to clear the debris. Aim for at least eight hours of sleep each night to ensure your brain has the chance to carry out this cleanup process. "If you are not able to get eight hours of continuous sleep, take naps," Dr. Tanzi says.

HANDLE STRESS

Studies show that stress affects how the brain functions. Excessive levels of stress can cause and exacerbate disease, in large part through the activation of the Hypothalamic-Pituitary-Adrenal (HPA) axis, which elevates cortisol levels. High levels of blood cortisol have a negative impact on

memory and can increase levels of inflammation. There is evidence that ongoing, chronic stress may rewire the brain. It is important to find ways to reduce stress. Incorporating relaxation techniques such as meditation into our daily lives can help with overall stress management.

INTERACT

A six-year study published in 2013 with adults older than 65 who had not yet shown cognitive impairment found that those with higher levels of social interaction were less likely to develop dementia. Since this study was finalized, numerous other studies have shown that social interaction preserves cognitive function, as well as a strong connection between loneliness and impaired cognitive function. Numerous studies confirm that older adults with dementia who have a strong social network experience delayed cognitive function. There are many benefits to staying socially active by engaging with friends and family and meeting new people. These include a protective influence on comprehension and reasoning ability, as well as a lower risk of developing symptoms of memory loss. An active social life can open up a new world of opportunity and provide motivation to introduce healthy habits into your life.

EXERCISE

Exercise has been shown to create biochemical changes in the brain related to the health of our nerve cells. In short, exercise facilitates the creation of new nerves and synapses, referred to as neurogenesis, in the hippocampus of the brain. The hippocampus is crucial for memory retrieval and the formation of new memories. Research has found that one of the first areas in the brain affected by Alzheimer's disease is the hippocampus. Exercise helps prevent atrophy in this area of the brain. The recommendation is to *move more*: whatever your current level of exercise, just move a little more. Even if you are sedentary, begin by taking a short walk, and increase the length of your walks over time.

(continued on page 6)

RED SOX

Honor Cure Alzheimer's Fund

On June 25th the World Champion Boston Red Sox hosted Cure Alzheimer's Fund at the team's game against the Chicago White Sox. The Red Sox invited us to Fenway Park for the second year to raise awareness about Alzheimer's disease and our work to identify effective treatment and prevention strategies through medical research.

The ceremony began by honoring our researchers, both on the field and in the stands, who are working to better understand and find a cure for Alzheimer's disease. Cure Alzheimer's Fund Founder Jacqueline Morby and Founder and Co-Chairman Henry McCance were introduced in the on-field pregame ceremony, along with a color guard from Quincy Fire Fighters Local 792, which holds an annual bowling fundraiser for us.

Dr. David Holtzman of Washington University—cousin of Ken Holtzman, the three-time World Series pitcher for the Oakland Athletics—threw out the ceremonial first pitch. The national anthem was performed by a cappella ensemble In Choro Novo, of which CureAlz

President and CEO Tim Armour is a member. To close the ceremony, the familiar "Play Ball!" was called by Colin Petersen (grandson of Dr. Ron Petersen), Fox Rapaport (grandson of Founder Phyllis Rappaport) and Lyla Tanzi (daughter of Dr. Rudy Tanzi.)

The event continued with live TV interviews on the New England Sports Network with Henry McCance, Jeff Morby and Dr. Tanzi.

Cure Alzheimer's Fund's public service announcement, "The Face of Alzheimer's," was featured throughout the game on the stadium's big screen, and the Face The Disease campaign was launched for those who want to upload a selfie and share why they support Alzheimer's research (see it and submit your selfie at www.FaceTheDisease.org).

We are deeply grateful to the Red Sox for their generosity in providing this exceptional opportunity to educate fans across Red Sox Nation about our work and how to get involved in the fight to cure Alzheimer's disease. ■



Dr. David Holtzman throws out the first pitch!

STUDENTS SHOW THEIR GRATITUDE FOR HENRY McCANCE

When the students from **Lake Wales Charter School** in Lake Wales, Florida, want to say thank you, they do it in a big way. On their own, without prompting from teachers, the students formed a committee to figure out how to say thank you to Cure Alzheimer's Fund Founder and Co-Chairman Henry McCance for his tremendous support of the school system. They decided to raise money to donate to Cure Alzheimer's Fund, and created a campaign called "Making Memories Matter for McCance." Their goal was \$10,000 in 10 days.

Their creative and robust fundraising efforts involved the district's four elementary, middle and high schools. Students in all of the schools could "Buy A Neuron" for \$1, pay \$10 for 10 days



of dressing down, and also could purchase a T-shirt custom designed for the campaign. The Lake Wales Charter School students also approached local businesses for donations.

At the end of the 10 days, the students surprised Henry at a school assembly with a check for \$10,000 for Cure Alzheimer's Fund. Not only that, by the time the campaign closed, the students had raised \$15,000. Way to crush it!



MODELING MARATHON FOR RESEARCH

Jason Kollat builds Gunpla model kits on the live-streaming video platform Twitch under the moniker of **Badgunpla**. Gunpla originates from Japanese anime and manga, and is the hobby of assembling and painting plastic snap-fit models from the fictional Gundam multiverse.

In his very first fundraising effort, Jason ran a **24-hour stream** in May where he built a challenging Mechanicore Zerstore model nonstop and broadcast the build live on Twitch, with all donations to benefit CureAlz. His goal was \$500. Much to his surprise—and ours—Jason's viewers donated nearly \$9,200! Many thanks to Jason and the folks at **NewType** for its \$1,000 match.

"Alzheimer's has been a part of my life as long as I can remember, with my grandmother succumbing to the disease when I was very young, my grandfather suffering the same fate [in] early 2018, and my aunt battling it currently," Jason said. "After doing my research, I found Cure Alzheimer's Fund to be an extremely reputable and direct charity, supporting great work to end this terrible affliction."

Heroes Spotlight

Noah Luskus held the Spike Away Alzheimer's Tournament in Cumming, Georgia, in June, with CureAlz receiving all fees from the combination volleyball and four square sporting event. ■ **Nanci Schiman** celebrated her birthday by holding a Facebook fundraiser in memory of her mother, Joan Fleming Anders, who had Alzheimer's and passed away in March. Thank you for raising \$1,125 for CureAlz. ■ Stonebridge at Burlington, a **Northbridge Senior Living Community** in Massachusetts, held a Summer Solstice Cookout and Crafts Fair in June, with proceeds going to CureAlz. ■ **Stefan Schnabl**

participated this summer in his first Ironman 70.3 Triathlon in honor of his Uncle Gustav, "who had a self-driven life and is now suddenly lost to Alzheimer's disease"; he donated all funds raised to Cure Alzheimer's Fund. ■ This summer, **Alexa Burton** ran her third half-marathon in Kennebunkport, Maine, in honor of her grandmother, Diane Aeschliman. For every \$150 donated to CureAlz, Alexa's family donated a Jellycat stuffed animal to give comfort to a late-stage Alzheimer's patient. ■ **Gabrielle Stern** set out in July to raise \$1 for every foot she climbed to the Matterhorn summit (14,692 feet)

in honor of her mom. Though adverse weather conditions forced Gabrielle to turn back just 750 feet short of her goal, she is already planning a second attempt to summit in 2020. ■ **Birthday Bash Apocalypse** has evolved from a few high school friends putting on a birthday party into an annual reunion where attendees dress to the nines and raise money for a different charity each year. This year the shindig raised \$6,000 for CureAlz. ■ **Skylar Reed** and friends from Bellevue, Ohio, held a carnival in May for her leadership class, with a portion of the proceeds benefiting CureAlz.

ERIKSON FAMILY HOLDS A PARTY WITH A PURPOSE

Thirty-one years after Searle Erikson lost her battle with Alzheimer's, the disease has returned to the family with her oldest daughter, Barbara, receiving the same diagnosis. A former public defender in Washington, D.C., the 71-year-old mother of five adult children and grandmother of two was told she had Alzheimer's in the fall of 2018. Barbara is hopeful the insidious disease will not affect another generation of the Erikson family.

Inspired by her sister-in-law Barbara, **Beth Erikson** and her daughter, **Emily Fitzgerald**, welcomed close to 100 friends to Beth's Canton, Massachusetts, home for "Care, Cope, Cure: A Discussion About Alzheimer's Disease." Attendees heard from award-winning investigative journalist Greg O'Brien, who was diagnosed with early-onset Alzheimer's at age 59, and President and CEO of Cure Alzheimer's Fund Tim Armour. We are enormously grateful to the Erikson family for hosting this event and for helping to bring additional awareness about Alzheimer's disease.



MUSIC AND MEMORIES

Xinyu (Simon) Wu is the founder and president of **Music for Awakening**, a nonprofit student group that performs music at many Alzheimer's care centers in Shanghai, China. An accomplished pianist, Simon uses his music to awaken precious memories in people with Alzheimer's and bring smiles to their faces. Simon has raised more than \$2,500 in donations from local school districts through his efforts. Thank you!



Photo by Marian Stanton

An Evening of Art & Science

Conversations two decades ago with his grandfather, who had dementia, led photographer **Joe Wallace** on a path to chronicle the stories of other such patients in the hope it would make the idea of dementia much less frightening.

The result was the photographic and narrative exhibit "**Beginning at the End: Portraits of Dementia**," an arresting project showing people affected by Alzheimer's and dementia, and challenging the viewer to consider the subject and their entire lifetime of experience. Joe photographed each person and paired the portrait with a second photograph from the subject's youth, then presented the paired photos with a story from the subject's past. In all, 25 portraits were part of an exhibit at The Umbrella Community Arts Center in Concord, Massachusetts, in May and June.

Graciously, Joe partnered with Cure Alzheimer's Fund to support the message of scientific research, as CureAlz Senior Vice President of Research Management Meg Smith joined Joe for "An Evening of Art & Science." She spoke about current research into Alzheimer's disease at a special gallery reception on June 5th.

Joe's work and unique storytelling perspective was featured in [The Boston Globe](#) and on the television show "[Chronicle](#)."

"My hope is that each one of their stories will be an opportunity for someone to see themselves or their own struggle reflected back at them," he told The Boston Globe. "I'm trying to use empathy to build connection and to start a conversation."

News In Brief

A Brainy Day at the Movies

The [American Brain Coalition](#) and Cure Alzheimer's Fund, in cooperation with the [Congressional Neuroscience Caucus](#), hosted "A Brainy Look at the Movie 'Inside Out,'" a reception and ice cream social that used the popular Disney Pixar animated film to educate the audience of more than 100 congressional staffers and nonprofit organizations on mental health and neuroscience.

At the July event held in Washington, D.C., moderator Phil Cronin, representing CureAlz, posed questions on the important themes within the film to a panel of esteemed neuroscience experts: Dr. Jane Flinn of George Mason University, Dr. Tamar Mendelson of the Johns Hopkins Bloomberg School of Public Health, and Dr. Adam P. Spira of the Johns Hopkins Center on Aging and Health.

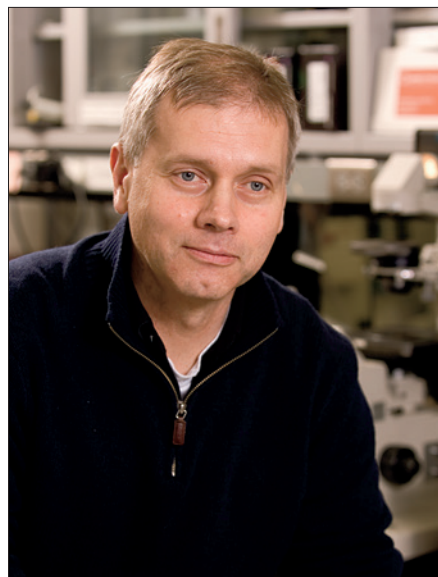
The discussion covered a variety of brain-related topics, including memory repression, sleep, the role of epigenetic factors in emotional and cognitive development, and adolescent mental health and impulsive action.

Dr. Paul Aravich of Eastern Virginia Medical School rounded out the program by bringing brains for guests to interact

with, allowing for a deeper look into the effects of several brain disorders.

Colonna Elected to the National Academy of Sciences

Marco Colonna, M.D., of Washington University and a member of the Cure Alzheimer's Fund Research Leadership Group, has been elected to the National Academy of Sciences, considered one of the highest honors awarded to a U.S. scientist or engineer. Dr. Colonna was among 100 new members elected in April 2019 for his outstanding contributions to research.



Dr. Colonna's laboratory researches how the immune system plays a role in inflammatory diseases like Alzheimer's disease. He discovered that immune cells without a working copy of the gene TREM2 are unable to limit the spread of plaques of amyloid beta, a sticky brain protein associated with neurodegeneration. The findings explain why people with certain variants of the TREM2 gene have a five-fold increase in the risk of developing Alzheimer's disease, and could lead to a strategy to target TREM2 to prevent or treat the disease.

"Marco Colonna is an extraordinary scientist whose insights into the innate immune system, and in particular his discoveries about the microglia regulator protein TREM, have made him a valuable member of the Cure Alzheimer's Fund Research Leadership Group," said Meg Smith, Senior Vice President of Research Management. "We are pleased but not at all surprised to see his many accomplishments recognized by the National Academy of Sciences."

Established in 1863, the [National Academy of Sciences](#) is a private, nonprofit society of distinguished scholars charged with providing independent, objective advice to the nation on matters related to science and technology.

SHIELD: 6 Steps You Can Take Now for Brain Health *(continued from page 2)*

LEARN NEW THINGS

In addition to physical exercise, mental exercise is a factor in delaying cognitive decline. Learning new things as we age can keep us mentally sharp and builds our neural networks. For example, reading books, learning a new language or new field of knowledge, practicing memorizing lists or engaging in a new hobby helps keep the brain stimulated.

The more challenging and complex, the greater the benefit. "The more synapses you make, the more you can lose before you lose it," Dr. Tanzi says.

DIET

The Mediterranean diet has been shown to benefit your brain the most. That diet emphasizes eating more fruits and vegetables, nuts, olive oil and fish, and

reducing consumption of red meat. "The Mediterranean diet is best for your brain," says Dr. Tanzi, adding that your diet has an effect on your microbiome and neuroinflammation.

Dr. Tanzi stresses that making small changes every day can help the health of your brain. "And," he points out, "these are all things you can do now." ■

Financial Update

MARCH 2019 – JUNE 2019

Numbers shown are preliminary for the period and are rounded to the nearest \$100,000.

| | This period | YTD | Inception to Date |
|---|-------------|---------|-------------------|
| Contributions received | \$4.4M | \$9.1M | \$123.8 M |
| Operating expenses paid by the board | \$1.7M | \$2.4M | \$24.6M |
| Research funded | \$4.1M | \$5.9 M | \$92.6M |

Research Projects

| | Distribution Amount |
|---|---------------------|
| PEGASUS Clinical Study of AMX0035 in Alzheimer's Disease Amylyx | \$150,000 |
| In Vitro and In Vivo Analysis of APP Variant Sangram S. Sisodia, Ph.D., University of Chicago | \$200,000 |
| Therapeutic Modulation of TREM2 Activity Christian Haass, Ph.D., DZNE Munich | \$150,000 |
| Development and Breeding of Mice Models for Genes to Therapies™ Research Projects Taconic | \$1,364,973 |
| Imaging Microglial Homeostasis and Disruption: P2Y12R Radiotracer Development Jacob M. Hooker, Ph.D., and Michael Placzek, Ph.D., Massachusetts General Hospital | \$172,500 |
| Regulation of Microglial Lysosome Acidification Frederick R. Maxfield, Ph.D., Weill Medical College of Cornell University | \$150,000 |
| Cerebrovascular Dysfunction in Alzheimer's Disease: Targeting the Mechanisms of Vascular Activation Paula Grammas, Ph.D., University of Rhode Island | \$56,404 |
| Understanding Molecular Biomarker Changes in Alzheimer's Disease Using Mouse Models Mathias Jucker, Ph.D., and Stephan Kaeser, Ph.D., University of Tübingen, Germany | \$172,500 |
| Mechanisms for Alzheimer's Disease-associated SORLA Mutations in Microglia and Neurons in AD Pathogenesis Huaxi Xu, Ph.D., and Timothy Huang, Ph.D., Sanford Burnham Prebys Medical Discovery Institute | \$172,500 |
| The Role of MGnD-neurodegenerative Clec7a+ Microglia in an Alzheimer's Disease Mouse Model Oleg Butovsky, Ph.D., Brigham and Women's Hospital | \$172,500 |
| VGF, a Novel Therapeutic Effector of Alzheimer's Disease Pathogenesis and Progression Michelle E. Ehrlich, M.D., and Stephen R. Salton, M.D., Ph.D., Icahn School of Medicine at Mount Sinai | \$150,000 |
| PEGASUS Clinical Study of AMX0035 in Alzheimer's Disease Amylyx | \$300,000 |
| A Novel APOE Mimetic Therapeutic Peptide CN-105 Attenuates Alzheimer's Disease Pathology and Improves Functional Outcomes in a Murine Model of Alzheimer's Disease Daniel Laskowitz, M.D., M.H.S., Duke University School of Medicine | \$91,687 |
| Treating with Gamma-Secretase Modulators to Prevent Neurodegeneration in Mouse Models of Down Syndrome and Alzheimer's Disease William C. Mobley, M.D., Ph.D., and Steven L. Wagner, Ph.D., University of California, San Diego | \$150,000 |
| Biochemical Mapping of the GSM Binding Site of Novel Pyridazine-Derived Small Molecule Gamma-Secretase Modulators Steven L. Wagner, Ph.D., University of California, San Diego, and Yueming Li, Ph.D., Memorial Sloan Kettering Cancer Center | \$300,000 |
| Rejuvenation of Microglia in Brain Aging and Neurodegeneration Tony Wyss-Coray, Ph.D., Stanford University | \$172,500 |
| Genetic Targets to Block Tau Propagation: Test Knockdown of Heparan Sulfate Proteoglycan Genes In Vivo Marc Diamond, M.D., University of Texas Southwestern Medical Center | \$172,500 |

SAVE THE DATES FOR THESE UPCOMING EVENTS

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NOVEMBER 13

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LISA GENOVA
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Author of 'Still Alice,' a leading expert on
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CURE ALZHEIMER'S FUND SYMPOSIUM

April 29, 2020

Joseph B. Martin Conference Center
Harvard Medical School,
Boston



MISSION:

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CUREALZ UPDATE

LATE SUMMER SEASON 2019

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