From the President

It has been an earth-shattering eight months as COVID-19 upended our lives. Despite these circumstances, I feel great hope and optimism. Our dedicated CurePSP staff met these challenges head-on, pivoting quickly to serve our communities in imaginative and effective new ways.

CurePSP’s new Inclusion and Diversity Committee, chaired by board member Maggie Orseth, is an example of this commitment. This initiative has the goal of connecting underserved communities—Black, Hispanic, rural poor, and others—with CurePSP’s resources.

Although in-person events have temporarily ceased, world-renowned PSP neurologist Lawrence I. Golbe, MD, has stepped in to provide expert guidance in our ongoing webinars called Ask The Doctor. Joanna Teters, our community outreach & resource manager, is an engaging moderator and fields questions from the audience. Registration for the last two sessions topped 450 people and raised $1,091.

Ask the Scientist, another live webinar, is led by Dr. Kristophe Diaz, vice president of scientific affairs, and features the latest findings from researchers funded by CurePSP, thanks to the generosity of our donors. Other webinars include Minimizing Caregiver Fatigue by CurePSP volunteer and former board member Janet Edmunson, M.Ed.

Our 70 support groups have continued to convene using the Zoom online platform. Gregg Felice, LCSW-R, director of patient and carepartner advocacy, facilitates more than five monthly support groups.

Sabrina Da Rocha, director of marketing and communications, and Denise Forero, marketing and social media manager, have ramped up CurePSP’s social media efforts and marketing, sometimes pulling an all-nighter from their home offices to keep the momentum going.

Our donors and our volunteers continue to be our rock. Their ongoing, vibrant support, despite the hardships of COVID-19 and a weakening economy, fill me with gratitude and hope.

2020 is a momentous year for CurePSP as we celebrate our 30th anniversary. Although we can’t party in person, Jaclyn Zendrian, vice president of events, together with Kelsey Woods, events and community outreach coordinator, are creating an online Academy Awards-style show to mark 30 years of hope, history, and accomplishment.

During this worldwide crisis, CurePSP will take the long view. We will wait for research and clinical trials to resume. But we will never stop. We will continue to raise awareness and money to fight PSP and similar diseases. And, we will be diligent despite the new obstacles. Frankly, over the past few months, I’m pretty sure that’s what we’ve done—with a heavy lift from a fantastic team of staff, volunteers, donors, and the CurePSP board.

With gratitude,

David Kemp | 802-734-1185 | kemp@cure PSP.org
Join us on Monday, December 7, from 7:00–8:00 p.m. ET to celebrate three decades of CurePSP’s fight against PSP and neurodegeneration. It’ll be a night to remember as we honor the leaders, scientists, supporters, patients, families, caregivers and volunteers whose vision and perseverance have impacted the lives of so many.

A dazzling Academy Awards-style online show
An admirable thank you to our amazing CurePSP Anniversary Celebration Committee for their tireless work creating an online event starring Tony Dokoupil, co-host of “CBS This Morning,” as Master of Ceremonies. Enjoy renowned speakers, dynamic musical entertainment, a silent auction, and awards during the show. Hear from PSP luminaries in PSP patient care and research. Reflect on how CurePSP's vision and mission have been a catalyst for neurodegenerative research around the world.

Awards and gratitude for our volunteers and visionaries
Jaclyn Zendrian, Vice President – Events, Kelsey Woods, Events and Community Outreach Coordinator, Rich Spain, Committee Volunteer, and CurePSP Board Members: Amy Branch, Ileen McFarland, Larry Levien.

Become part of the CurePSP legacy
• Order a curated two-person “Party in Place” keepsake box with an engraved 8-piece stainless steel flatware set, red monogrammed fabric napkins, engraved wine glasses, and PSP-branded cotton face masks.
• Upload special personal photos to social media with the hashtag #CurePSP30, or text them to the phone number 201-754-5274, starting November 7. Our digital team will create a spectacular online photo mosaic presented at the end of the livestream.
• Tout your organizational brand with mentions in our event email blasts.
• Tickets are free! To purchase a “Party in Place” box or a virtual cocktail table, please visit curepsp30.eventbrite.com.
• Bid in a silent online mobile auction during the event. Great gifts to bid on include sports memorabilia and tech devices. To contribute to the silent auction, please visit www.psp.org/auction30
• Support Fund-A-Need donations to fulfill CurePSP’s mission of care, consciousness, and cure.
• Buy an ad in the online Anniversary album.

Share your strategy and current plans with CurePSP, and we can work with you to develop custom programs aligned to your individual needs. Any budget is welcome, and the above are examples of the potential opportunities available. There’s something for everyone!

Visit curepsp30.eventbrite.com for tickets, tables, donations, to bid in the silent auction, and much more! We can’t wait to have you join us online in December!
When Gregg Felice joined CurePSP as the director of patient and carepartner advocacy last winter, he had tons of brilliant ideas to enhance connectivity and advocacy for PSP patients and families.

Then COVID-19 struck, and in-person events, groups, and support ended almost overnight. For families suffering from neurodegenerative diseases, this lapse was unthinkable. Gregg quickly pivoted and, together with the CurePSP staff and volunteers, created a virtual world of connection and support. Gregg facilitates more than five monthly support groups online and recently created a monthly online bereavement group. He also works closely with Joanna Teters, community outreach & resource manager; together they established a new online Office Hour webinar for volunteer support group leaders and peer supporters.

Gregg is an accomplished clinical social worker. He is also a son who lost his father to PSP. “My mission is to help patients and carepartners maintain the best quality of life—physically, emotionally, financially, and spiritually,” says Gregg. “I know first-hand how hard a struggle it is.”

“We’re currently developing and providing resources that assist patients and families in gaining greater access to and the continuation of quality of life in home healthcare services. This includes helping families expedite Social Security Disability benefits and access and retain in home PT, OT and Speech therapies. Gregg has recently been working with the National Hospice and Palliative Care Organization to build greater awareness and education of PSP, MSA, and CBD to local hospice and palliative service providers. “We need to advocate for access and continuation of hospice and palliative services, which provide quality of life and end of life care for many of these devastated patients and families.” Gregg is also developing our partnerships with the National Organization for Rare Diseases (NORD) and other neurodegenerative organizations. Currently we are looking to create a forum where families can exchange unused or no longer needed medical equipment and devices to other patients in need, by applying for a grant to cover the cost of shipping these medical devices and equipment. “Innovations in care, support, and greater access to benefits and services are always on our radar,” Gregg explains.

“At CurePSP, everyone’s commitment to work for our patients and families is awe-inspiring and life-enhancing. For them and us.”
Over the past year, the scientific community has made real progress toward curing PSP and in the fight to slow or stop its progression.

**Will antibody infusions show therapeutic value?**
An abnormal form of the tau protein is considered the primary driver in the development of PSP. Intravenously infused antibodies directed against tau are good candidates as treatments to slow the ongoing worsening of PSP. Two large, international, double-blind clinical trials of such antibodies started in 2015 and 2016, respectively. Unfortunately, AbbVie in July 2019 and Biogen in December 2019 announced that their trials had failed to slow the ongoing progression of PSP relative to placebo infusions. Still pending are statistical details of the results as well as fine analysis seeking sub-groups of patients who may in fact have responded. However, both companies have discontinued further development of those antibodies for PSP.

But there are some consolations: Neither antibody showed important side effects nor toxicity, a fact that may encourage other drug companies. Both Biogen and AbbVie continue to work on new treatments for PSP. Both trials generated reams of valuable data on the progression of PSP, and a third drug company, UCB, is planning a trial of its own antibody that started in 2020. Where the AbbVie and Biogen antibodies were directed against the tau protein's “N terminal” (the left-most end as depicted in most diagrams of protein structure), the UCB antibody is directed against the “microtubule-binding domain,” which is toward the other end. This provides hope that the trial's result may be different. That trial is slated to start in mid-2021, and its results would be available about three years later.

**Preventing tau tangles with a unique sugar**
Other treatment approaches to PSP are also underway. One promising approach is to prevent tau from misfolding and aggregating in the first place. An unusual sugar called N-acetyl glucosamine normally attaches to the tau protein in our brains and inhibits the tendency of tau to misfold and aggregate under certain stresses. Two new oral medications inhibit the brain enzyme that normally detaches this sugar from tau. The result is less misfolding and aggregation. The drugs have performed well in mouse models, and clinical trials in PSP are likely to start in 2021.

**“Anti-sense” RNA to stop tau production**
Another original treatment idea is to use strands of RNA called “anti-sense oligonucleotides,” which recognize and silence the RNA that encodes the tau protein. This potential treatment is injected directly into the spinal fluid in the lower back, where it circulates into the brain tissue. A therapeutic strategy may be ready for clinical trials in 2021.
A blood test for catching PSP early
Any treatment to slow or stop the progression of PSP would work best if started early in the course of the disease. However, diagnosing PSP at an early stage has proved elusive. But very recently, researchers have discovered that neurofilament light chain (NfL), a protein in the spinal fluid and blood, becomes elevated in PSP but not in Parkinson’s disease. As PSP progresses, NfL levels rise further, making the test potentially useful as a measure of the rate of disease worsening.

The caveat is that NfL levels elevate in other neurodegenerative conditions such as Alzheimer’s disease and multiple system atrophy. So for now, this limits its diagnostic utility in patients for whom these diseases may also be diagnostic possibilities.

A new rating scale for patients and caregivers
Since its publication in 2007, the PSP Rating Scale (PSPRS) has been the world’s standard tool for assessing the severity of the disease. It uses both the neurologist’s examination and reports of symptoms by the caregiver and patient.

Now, the Food and Drug Administration has announced that the measure of benefit in trials of treatment submitted for its approval must rely entirely on reports directly from the patient and caregiver. Furthermore, the data must reflect the patient’s daily disability rather than a physician’s formal neurological exam.

To accomplish this, a group of centers headed by the University of Toronto has developed a self-administered disability checklist useful in both PSP and CBD. It appears to perform well, although the ability of the scale to track progression over the typical clinical trial of 12 months still needs confirmation. The scale is a work in progress but will probably prove useful for ordinary patient care, even in settings where a neurologist familiar with PSP is not available, as well as in formal clinical research.

Another scale, called the PSP Clinical Dysfunction Scale, has been devised by neurologists in Germany and will be published in 2020. It is in many ways an abbreviated version of the PSP Rating Scale and, like the PSPRS, requires some examination by a trained examiner. However, it requires about half the time to administer and is nearly as valid in tracking disease progression over time. It may appeal to busy practitioners whose office schedules do not allow time for the 10-minute PSPRS.

At CurePSP, scientific efforts are underway every day to end the devastation of PSP and other prime of life brain diseases. It is our mission—and our promise.
Imagine a world without PSP.

Dr. Ted Dawson is working on it.

Can the devastation of PSP and CBD be stopped? What areas of research hold the most promise for halting these dreaded diseases and the lives they destroy? We asked Ted Dawson, MD, PhD, a world-renowned pioneer in brain cell death, a neurobiologist, movement disorder specialist, and CurePSP Scientific Advisory Board member to give us his take on these issues.

Dr. Dawson explains, “I’m very excited about a recent study in JAMA that demonstrated how an innovative blood test could detect abnormal levels of p-tau217 in the brain—the form of tau associated with Alzheimer’s. The test was so accurate that it predicted the disease 20 years before someone exhibited cognitive symptoms. It’s a potential game-changer for Alzheimer’s disease and other forms of neurodegeneration.”

The challenge now is to modify this specialized immunoassay into an on-the-ground, mass-produced blood test with the highest accuracy and availability. Will similar tests for PSP and CBD be developed? “That is my great hope,” says Dr. Dawson. “The test, together with imaging studies, would give physicians a strong framework for differential diagnosis, tracking disease progression and gauging therapeutic efficacy. In addition, a blood test would enable us to distinguish between a tauopathy, or tau-based disease, and neurodegenerative conditions with similar symptoms, such as multiple system atrophy and Parkinson’s disease.”

Hope based on Dr. Dawson’s groundbreaking work

In 1991, Dr. Dawson, together with his wife, neurobiologist Dr. Valina Dawson, published seminal research on the critical role that nitric oxide (NO) and poly (ADP-ribose) polymerase (PARP) play in brain cell death resulting from a stroke. Their work, with more than 100,000 citations, has been foundational for 30 years in the study of neurodegeneration in Parkinson’s disease, Alzheimer’s disease, cardiac ischemia, and more.

The exploration continues. Dr. Dawson, the CurePSP Scientific Advisory Board, and a global research community are hard at work, exploring why insidious and progressive brain cell death occurs in diseases like PSP and CBD—and finding a way to stop it—dead in its tracks.
Some brains age better than others.

Dr. Jennifer Yokoyama wants to know why.

Why do some people succumb to neurodegenerative diseases while others retain brain health for a lifetime?

“In large part, the answers are written in our genes,” explains Jennifer S. Yokoyama, PhD, founder of the UCSF Neurogenetics in Aging Lab. “An individual's genome, or collection of genes, is a blueprint for how a brain develops, functions, and ages.”

To understand what happens, Dr. Yokoyama’s lab team crunches massive data sets of Alzheimer’s, PSP, and Parkinson’s patients from around the globe—to delineate genetic patterns, mutations, and variants underlying these diseases. “By examining a vast and varied genetic picture, in the greatest detail, we open a pathway for developing therapies to halt or stop these deadly diseases,” says Dr. Yokoyama.

Dr. Yokoyama is one of many brilliant scientists exploring brain genetics. Recently, a study reported in *bioRxiv* from Edwin Jabbari links together genetic risk in alpha-synuclein and tau disorders. This LRRK2 genetic link between Parkinson’s and tau-based disease such as PSP could provide clues on how to modify disease progression.*

*Edwin Jabbari, et al., *bioRxiv* Common variation at the LRRK2 locus is associated with survival in the primary tauopathy progressive supranuclear palsy.

**Rogue microglia**

Dr. Yokoyama’s multifactorial approach to research includes examining microglia and their essential role in the brain’s immune system. “Microglia prowl the brain to rid it of toxic materials, such as PSP tau tangles that may be released from dying neurons. The microglia gobble up the debris and safely degrade it in the brain,” explains Dr. Yokoyama. However, when microglia malfunction, as one hypothesis posits, tau is recycled back into the brain in a still-toxic state. If true, it means that the brain’s immune system is going awry for some reason.

Identifying genetic biomarkers for PSP, CBD, and Alzheimer’s disease would give people at higher risk for these catastrophic illnesses a fighting chance. “I hope that with biomarker identification, we can develop therapies to intercept the disease process well before symptoms show,” Dr. Yokoyama concludes.
CurePSP Resources for COVID-19 Crisis

Throughout this coronavirus crisis, CurePSP continues to remain committed to offering as many opportunities to connect with others in your community who are facing similar hardships, as well as ways to speak with peer supporters, connect on our Smart Patients Forum, and attend an online teleconference support group or one of our new Zoom webinars.

Please find our full network of resources for you and your loved ones during the coronavirus crisis here:

www.psp.org/covidresources