VCU Parkinson’s Disease Center

2010-11 annual report

A year in motion

Virginia Commonwealth University
The Center continues to build its team of clinicians and specialists to complement the movement disorder neurologists and clinical neuropsychologists currently on staff.

Sarah Lageman, Ph.D., and I began evaluating clients at the new site on June 1, with Will Maragos, Ph.D., joining us in mid-July. In the first 12 weeks of operation, 81 individuals have received services. On July 1, Leslie Cloud, M.D., our third movement disorder neurologist, joined the group and is now seeing clients regularly. Cloud’s major research interest is in gastrointestinal motility disorders in Parkinson’s disease. She will soon begin recruiting participants for her research program.

In early September, Claudia Testa, M.D., Bonnie Sachs, Ph.D., and Fern Cohen will join our group. Testa will be the fourth movement disorder neurologist in the group and has additional clinical expertise in Huntington’s disease (as does Maragos) and research/clinical expertise in the genetics of essential tremor. Sachs is a talented clinical neuropsychologist trained in neurodegenerative diseases and Cohen is a highly experienced speech-language pathologist. In late fall, Jeff Hoder, D.P.T., a kinesiologist/physical therapist with particular interests and skills in Parkinson’s, will also join us. At this time our entire group will be together and will be able to offer a novel approach to evaluating, treating and investigating the complex disease problems caused by Parkinson’s and related movement disorders.

With an operational clinical evaluation site, the Center is now able to begin recruitment for several clinical research projects in addition to client evaluation and treatment. Clinical research is necessary for the development of new treatments for Parkinson’s and is an integral program within the Center.

Our laboratory research continues at a rapid, productive pace. Patricia Trimmer, Ph.D., continues her original research to bring long-wave laser light therapy to a clinical study program at our Center. We are hopeful that this program, initiated by Trimmer, can begin in early 2012. We have also discovered that Parkinson’s brains, “divorcing” and attempting to rid themselves of their mitochondria, the energy factories on which they so much depend. We are developing therapies that reverse this process.

Thank you for your continued support in making the Center a reality, thus allowing it to bring hope to the Parkinson’s community. As we continue to build and grow, we become ever more dependent on your assistance as donors. Clinical revenues and external grant funding support only a small fraction of what we provide to the Parkinson’s community.

From the director

The past year has been one of substantial achievement for the Virginia Commonwealth University Parkinson’s Disease Center. As a result of dedicated collaboration between Center staff members and others from various departments within VCU, we opened the Center’s Clinical Evaluation site at Reynolds Crossing. We can now provide multidisciplinary evaluation and treatment services to individuals and families affected by Parkinson’s and related movement disorders.
Distinctive clinical services

The Center will offer distinctive multidisciplinary (multi-D) evaluation and treatment services, with clinicians available for both primary diagnosis of movement disorders as well as second opinions. Our multi-D team will collaborate and communicate in a face-to-face setting to offer a client-focused multi-D evaluation to address various motor and non-motor symptoms of Parkinson’s and related movement disorders. This type of multi-D care, with all clinicians available in the same location, will be the only one of this kind available for people with Parkinson’s and related movement disorders in Virginia.

All evaluations will take place in our Clinical Evaluation Center, located in the Billy Reynolds Jr. Building in the Reynolds Crossing development on Forest Avenue near West Broad Street in Richmond. This location is easily accessible to people with movement disorders, is conveniently located near interstate I-64 and has ample surface parking. This ideal location will allow the Center to provide unique multidisciplinary evaluation and treatment services to the community. Our services are available to all, regardless of insurance status or ability to pay.

The multi-D evaluation will include assessments by:

- Movement disorder neurologist
- Clinical neuropsychologist
- Speech language pathologist
- Sleep medicine neurologist
- Gastrointestinal physiologist
- Kinesiologist-physical therapist (available January 2012)

The team will comprehensively evaluate each client as a unique person and create individualized treatment recommendations, which will be reviewed with the client. The Center will offer treatments and/or provide referrals, and provide ongoing evaluation, if the client chooses.

At this time most members of the team are available for clinical evaluations. We anticipate fully offering this novel approach by January 2012.

Bridging the divide through translational research

The Center’s Translational Laboratory-based Research Program focuses on acquiring molecular knowledge about the development of Parkinson’s disease and testing promising new disease-altering therapies in cell and animal models. This kind of new knowledge is essential if the progressive deterioration in Parkinson’s disease brains is to be stopped. The major theme of the Center’s laboratory research relates to understanding how energy production becomes impaired in Parkinson’s disease brain cells and how to correct this deficiency. Our research has shown that Parkinson’s disease brain-energy-producing proteins in mitochondria (energy “factories”) become damaged by oxygen free radicals. Parkinson’s disease brains also shut down signals to produce mitochondrial energy manufacturing proteins, which is paradoxical for a high-energy utilizing tissue like brain tissue. Current projects focus on how to prevent this free radical damage, increase energy production in Parkinson’s disease brain cells and reverse the decrease in mitochondrial signaling. Experimental treatments to correct these problems have been developed in the laboratory and are on track to be tested in humans.

In addition, research led by Patricia Trimmer, Ph.D., has shown that long-wave laser light directly stimulates energy production in cells. She is exploring the molecular mechanisms responsible for these beneficial properties of laser light. Because this kind of laser can penetrate scalp and skull, it holds promise as a safe approach to increasing energy production in brains of Parkinson’s patients. Trimmer is working with an industrial partner to bring this therapy out of the lab and into the clinic.

Realizing the need for experiments using human tissue to validate results obtained from other lines of research, the VCU Brain Tissue Resource Facility has been established and is now able to accept donated tissue. Establishment of this important resource has given researchers the ability to accurately and efficiently advance scientific knowledge about neurodegenerative diseases. Discoveries made possible by donated tissue further the understanding of normal and abnormal workings of the human brain, which mark the
also mentoring psychology graduate students conducting an expressive writing research project for caregivers. Plans are also being made to start testing long-wave transcranial laser light therapy in Parkinson’s disease patients suffering from cognitive impairment or depression. TLT has the interesting properties of being able to pass through skin and skull bone, penetrate into brain tissue and stimulate energy production.

Education: Easing the burden

The Center strives to ease the burden of the complexities of Parkinson’s by providing educational opportunities for individuals and families affected by the disease. The Center sponsored a series of one-hour seminars reviewing various non-motor aspects of Parkinson’s disease, including sleep disorders, thinking and memory skills, caregiving relationships and the history of James Parkinson and the disease named for him. Seminars were developed to address a previously unmet need, with topics selected based on suggestions from the community. The fall 2011 seminar schedule includes presentations on the application process for Social Security benefits, nursing care options, and nutrition and swallowing.

The Center also sponsored an update course intended for healthcare professionals working with people with Parkinson’s disease, however registration was open to all. More than 130 people registered for the course, which covered non-motor symptoms of Parkinson’s disease including mood disorders, mild cognitive impairment and the drug development process. Attendees included physicians specializing in the fields of neurology, internal medicine, family practice and psychiatry; physical therapists, clinical psychologists, social workers and individuals affected by Parkinson’s disease. Evaluation results indicate clinician attendees plan to make changes to their practice based on the information presented, making a positive impact on the care available for people with Parkinson’s.

Center staff and faculty have actively engaged in community outreach through presentations at support groups, Parkinson’s awareness events and health fairs throughout the commonwealth, from Harrisonburg to Virginia Beach. We continue to reach out to the community with several presentations scheduled for the fall and spring.

The Center has established partnerships with other VCU schools and departments in order to best serve clients, including the School of Social Work, the Department of Psychology and the Department of Gerontology. These partnerships have allowed us to engage students in the Center’s programs. The Center has partnered externally with the Hunter Holmes McGuire Veteran’s Affairs Parkinson’s Disease Research, Education and Clinical Center and the Richmond Metro Chapter of the American Parkinson’s Disease Association to support the Annual Parkinson’s Disease Community Education Day. This is an annual daylong course for people and families affected by Parkinson’s, which draws attendees from all areas in Virginia, as well as from West Virginia and North Carolina.

Contributions to date

Goal: $10 million

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Your generous private contributions have supported Center startup costs and endowed two professor chairs, Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine, agreed to match the first $5 million in contributions donated to the Center. These funds are awarded when predetermined fundraising milestones are achieved. The Center would not have become a reality without the continued support of the community. The Center would like to recognize and thank the “Movers and Shakers” for their passion and dedication.