

Recipe for Discovery

What do you get when you take an energetic chemical engineer who thinks no challenge is too big and a unique “systems biology” approach to science and apply them to studying patients who developed CFS after infectious mononucleosis? You get the work **Gordon Broderick, PhD**, will be doing with the grant he received from the CFIDS Association. You also get a great deal of promise for uncovering biomarkers for postinfectious CFS.

Broderick, an emerging leader in the field of computational biology, will direct a cross-disciplinary team from four institutions to study adolescents who became ill with CFS after contracting infectious mononucleosis, which is caused by Epstein-Barr virus (EBV).

Earlier studies suggest that infection with certain agents such as EBV can trigger CFS, and that the severity of the initial infection is a key predictor of who will develop CFS (see “The Viruses We Live With” on page 14).

Broderick’s study is unique in several ways. First, he’ll look at CFS in a very specific and well-defined group of patients, hoping to reduce some of the confounding variables that age and illness duration can impose. Adolescent patients will be studied through a collaboration with Renee Taylor, PhD, of the University of Illinois at Chicago. Taylor has studied CFS with support from the National Institutes for Health (NIH).

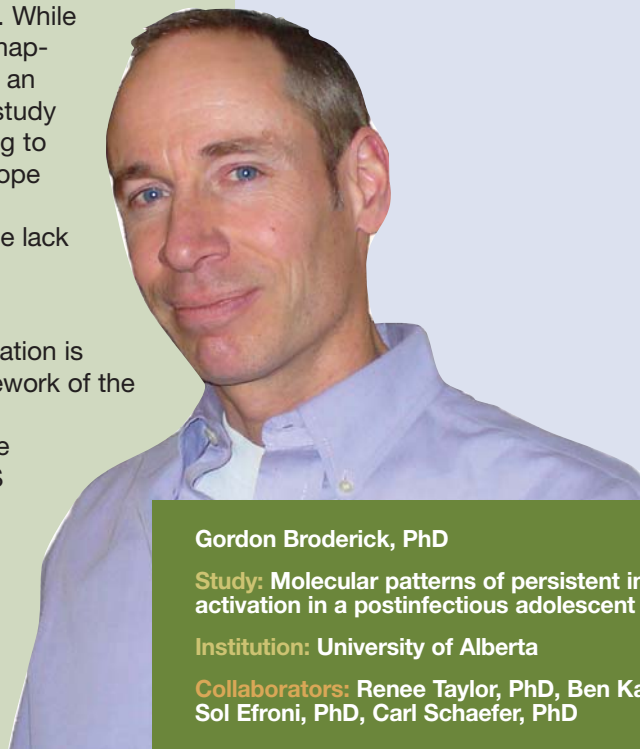
Second, Broderick will investigate the immune and endocrine responses of the study subjects from initial infection through the first 24 months after becoming ill. While most CFS studies look at a single-point-in-time snapshot of the illness, this longer term look provides an exciting opportunity to track the changes in the study subjects as the illness process unfolds. According to Broderick, “By studying patients over time, we hope to identify the series of events that precede disease and the factors responsible for the lack of recovery in the people who develop CFS after mononucleosis.”

Another unique feature of Broderick’s investigation is the approach he’ll employ to “engineer” the framework of the illness through the data he collects. By applying advanced mathematics, he will “map out” how the body’s different systems talk to each other in CFS and how this conversation might differ from the one found in healthy people.

Add to all that Broderick’s striking enthusiasm and energy to tackle any challenge, and you have a potent mix of possibility indeed.

Perspective
from our scientific director
Suzanne Vernon, PhD

“What makes this study exciting is not only the topic of postviral CFS but also the principal investigator. Broderick is adept at using mathematics to analyze chemical and physical processes and using that data to construct the underlying system of an illness. He’s applying that unique expertise to CFS, and the skills and tools he’ll use in this study hold great promise for identifying subtle disruptions in immune and endocrine function that might otherwise go undetected.”



Gordon Broderick, PhD

Study: Molecular patterns of persistent immune activation in a postinfectious adolescent cohort

Institution: University of Alberta

Collaborators: Renee Taylor, PhD, Ben Katz, MD, Sol Efroni, PhD, Carl Schaefer, PhD