

# The Software Generation

Powerful computational tools are being used on everything from predicting pandemics to personalizing medicine. Now, in perhaps the most “out-of-the-box” project funded in this cycle of CFIDS Association research grants, renowned computer scientist **Bud Mishra, PhD**, will focus his expertise on CFS, building a large-scale software program with the potential to explain mechanisms and identify possible causes of the illness.

Two decades of biologic and biomedical information on CFS exists, but it’s scattered among many sources and not coordinated or organized in any universal way. For years, many people in the CFS community have wished for a way to bring all these studies together to see what patterns emerge. Mishra, with the help of research associate Eric Aslakson, will tackle that challenge.

“There are multiple hypotheses about the etiology of CFS,” says Mishra. “Sophisticated new computational approaches not only can be useful to analyze massive datasets that have accumulated over decades, they can also present a global view of this illness for the first time.” Mishra believes this universal software platform will be able to help characterize CFS and its effects on the body.

It’s a huge undertaking—one that might normally require massive funding to support the required computer infrastructure alone—but Mishra has become so intrigued with the complexities and information challenges of CFS that he’s interested in doing the work for a fraction of what it might otherwise cost. And as one of the scientific reviewers of Mishra’s grant application put it, “If there’s one guy on the planet who can do this, it’s Bud Mishra.”

Once the software tools Mishra and Aslakson create are complete, they will be made available to other CFS researchers. In this way, they hold great potential for encouraging data-sharing and collaboration among researchers worldwide. In fact, the collaborative element will begin right away by using data gathered from other grant recipients to feed into the system for analysis as it’s being developed.

With this grant, the CFS community gains an extraordinary opportunity to reap the benefits of sophisticated computational biology and the millions of dollars spent on research conducted over the past 20+ years.

**Bud Mishra, PhD**

**Study:** Translate science to a cure for CFS

**Institution:** New York University School of Medicine

**Collaborators:** Eric Aslakson, MS

**Perspective**  
from our scientific director  
Suzanne Vernon, PhD

“There’s a wealth of information that can be harnessed and transformed into knowledge about CFS by experts like Mishra and Aslakson, who see computers as their laboratory tool of choice.

This study also serves to weave other grant recipients’ study findings together, connecting the data gained from individual studies and mining it for greater implications. That’s a big first in the area of CFS science.”

