

which information by itself or in combination is most sensitive to predicting disease processes.”

Already, Wong’s group has identified 310 proteins in saliva. They expect to find 1500 to 2000 before they are through. Once they have the full list, Wong and his colleagues will be identifying the protein signatures of ten high-impact systemic diseases that might be detectable in saliva, starting with oral cancer, breast cancer, and adult-onset diabetes.

When the project is complete, a web-based Salivary Proteome Knowledge Base will contain the researchers’ proteomic data along with annotations of protein function and links to other databases.

In the long run, Wong expects that

people will spit into a vial to be tested for oral cancer, breast cancer, or other diseases. “It’s not that far away,” Wong says. “The proof of concept is there.” Biotech companies are now interested in the possibility of saliva diagnostics. “Our guess—in a year there will be a commercially available system for specific selected diseases and, eventually, many more,” Wong says. “And the test will be painless.”

Extra! Extra! Read All About It

The field of biomedical computation is increasingly seen as a hot topic worthy of coverage in publications other than *Biomedical Computation Review*.

In June 2005, *The Scientist* will publish a special issue on digital biology. The publication features a “vision” piece by a working group that includes Nina Fedoroff of the Huck Institutes of the Life Sciences at Penn State and Jeff Shrager from the Carnegie Institution of Washington’s Plant Biology Department, located at Stanford. They propose a hypothesis browser—HyBrow—that would “collect the hypotheses that survive experimental testing in a new kind of knowledge base comprising models with all their supporting and contradicting data and knowledge, indexed by the hypotheses themselves.”

That issue of *The Scientist* also includes a story about housing and maintaining data storage centers. The writer

Other publications
are recognizing that
digital biomedicine
is a hot topic.

visits the server farms at Sanger Labs and interviews individuals at NCBI, CERN, and even Google, which boasts a whopping 2 petabytes (about 2 million gigabytes) in their server farm. On May 23, 2005, *The Scientist* also ran a vision piece by Lincoln Stein of Cold Spring Harbor; and on June 20, 2005, they will publish a story about open source software.

The Scientist isn’t the only publication that’s taking a growing interest in the field. In February, *Communications of the ACM* ran a series of five features called “Medical Image Modeling Tools and Applications,” guest edited by Dimitris Metaxas. The stories explore the development of a surgical simulator for minimally invasive surgery; a computer-graphics alternative to optical colonoscopy; 3-D modeling and analysis of heart motion from MRI-tagged data; efforts to develop computer-based methods for teaching anatomy; and recent efforts to develop open source image-processing tools. □

© PHOTOGRAPHER: RODOLFO ARPIA / AGENCY: DREAMSTIME.COM

