Revealed how organic mercury can interfere with vision
http://www.lightsource.ca/news/scihi_the_eyes_have_it.php

Developed drug carriers to deliver ibuprofen to the site of injury

Discovered link between airway liquid secretion and bacteria in Cystic Fibrosis

Developed innovative was to use nanosilver to combat bacterial infections

Explored the human microbiome for better nutrition and health
The microbial community of the human gut, the microbiota, is critical to human nutrition and health. Different diets are associated with different populations of microbiota. A study has appeared in Nature that explores the adaptation of the microbiota to yeast domestication in the human diet. Yeasts have been an important component of the diet for millenia, through such foods as yeast-leavened breads, fermented beverages and such food products as soy sauce. In this detailed study using multiple techniques, including structural data from the CLS, components of yeast (α-mannans) are shown to be an important food source for Bacteroidetes, a dominant member of the microbiota. These specialized bacteria use a mechanism to break down α-mannans by limited cleavage on the surface, generating large oligosaccharides that are subsequently broken down to mannose by periplasmic enzymes, a process that minimizes nutrient loss.

Used synchrotron techniques to image and treat prostate cancer

Studied more sensitive techniques for early arthritis detection
Osteoarthritis is the most common form of arthritis, affecting millions of people worldwide. It occurs when the articular cartilage on the ends of your bones wears down over time. It is hard to characterize articular cartilage using clinical imaging techniques which means osteoarthritis is clinically diagnosed only after significant patient symptoms exist and irreversible joint damaged has occurred. Phase contrast-imaging can be used instead of clinical imaging techniques like MRI to better see osteoarthritis at its source. Phase contrast-imaging provides a 10 fold resolution advantage over MRI. This advantage allows scientists to accurately characterize articular cartilage and early deterioration of articular cartilage. Eventually, with this new technology, osteoarthritis could be diagnosed in its earlier stages and provide preventative capabilities for patients.

Created technique to track bone growth in 3D at a cellular level
Bone is in a constant process of rebuilding and remodelling, and when that cycle is interrupted, it results in diseases like osteoporosis and osteoarthritis. Cellular-level of the bone’s mineralizing and building process is an invaluable tool in understanding and treating these diseases, but it’s difficult to get a clear, detailed picture of these process. Bone researchers are overcoming these difficulties by using synchrotron imaging techniques to produce 3-D maps of calcium in the bone in early building phases—a first in the field.
Investigated historical health problems using bones from 1800

Made progress towards blocking the detrimental aftermath of strokes

Imaged embryonic teeth to prevent problems later in life

Developed method to track chemical changes in breast cancer before it grows

Produced protein to convert blood to a universal blood type

Uncovered infection mechanism of toxoplasmosis during pregnancy

Developed better cryogenic techniques to preserve genetic diversity

Illuminated skin health and mineral distribution at every sublevel
http://www.lightsource.ca/news/enews/newsletter_apr2013.php (Number 4)

Blocked common staphylococcus bacteria to fight hospital-acquired infections
Methicillin-resistant Staphylococcus aureus (MRSA) infections now represent a majority of hospital-acquired infections. These infections result in an annual death toll in the United States exceeding that of AIDS. A recent study by researchers from the University of British Columbia, the Vancouver Prostate Centre, and Simon Fraser University resulted in the identification of a structure in the MRSA bacterium which has no human counterpart. This discovery was later applied in the development of MRSA inhibitors with much improved antimicrobial properties. This is an important step forward in the fight against MRSA infections.

Investigated cell structures to develop novel antibiotics