Syringomyelia involves an abnormal collection of fluid inside the tissue of the spinal cord (known as a syrinx). While the majority of cases are associated with Chiari, syringomyelia can also be caused by spinal cord injury, inflammation, and in some cases has no readily apparent cause. Often, if left untreated, a syrinx will grow over time and as it grows can damage nerves at the root and nerve pathways going to the brain. This can result in neuropathic pain, muscle atrophy, loss of nerve function, and even paralysis. There have been many theories over the decades about how Chiari leads to a syrinx, but there have been problems with each of them, and none have been proven to be correct. For Chiari associated syrinxes, a successful decompression surgery will stop the progression of the syrinx, and hopefully reduce its size, but they do not always disappear completely. And of course, nerve damage can be permanent. In an ongoing project, researchers at the CCRC are studying this tissue damage at the cellular level in hope of developing therapies that can reduce the damage and improve patient outcomes.