US Endoscopy is proud to sponsor a Biomimicry Fellow in University of Akron's Integrated Bioscience PhD Program.

US Endoscopy, a division of STERIS plc, is a world leader in endoscopy device design and manufacturing, serving the U.S. and International gastrointestinal endoscopy markets. We live our tagline of "listening, and delivering solutions," providing healthcare professionals worldwide with innovative, solution-oriented products that address the complex clinical challenges they face. Our culture of mutual respect, trust and collaboration is our foundation. For more information about US Endoscopy, please visit our website at www.usendoscopy.com.

The position will be sponsored by US Endoscopy's Research and Development (R&D) department and will be located at the US Endoscopy Tech Center in Mentor, OH. The student will report directly to the Vice President of Technical Innovations and will work to incorporate biomimicry principles into US Endoscopy's design and development process.

US Endoscopy is a market leader in new product development, constantly searching out novel ways to improve clinical outcomes. The New Product Development staff has examined the way nature addresses challenges and incorporated these principles to improve device performance. One example of this approach is US Endoscopy's Talon ® Grasping Device. The New Product Development team noted that existing grasping devices on the market did not perform very well. During the Talon® Grasping Device design process, the team looked to raptors to inform the design. Nature has uniquely adapted these birds to grasp and hold their prey. It was noted that there were several differences between the commercially available wire graspers and the operational characteristics of these birds. The commercially available graspers utilized three points of contact and were designed to meet at the center. The talons of raptors, however, had four claws that were staggered or offset as they collapsed on their target prey, but still were able to create significant pinching power. Incorporating these features into the Talon ® Grasping Device not only proved advantageous when it came to grasping and maintaining control of the foreign object, but also made it easier to house the graspers into the tubing for transportation to the site.

While we have had a few isolated successes with biomimicry, to date our searches in nature have been narrowly focused around specialized and arguably predictable applications. It is our belief that having someone with a depth of knowledge in biomimicry can lead us to the nuances and specifics that have been overlooked and/or undervalued.

We are looking for a highly-motivated, collaborative PhD student who is interested in the field of biomimicry and its applications in medical device design and development. This student will work closely with R&D and Advanced Engineering on overarching projects or specific subset features and component challenges that can be optimized by an approach that investigates how nature deals with these types of issues. This student will also work with Cross Functional Teams to integrate the prototyping and evaluation of these directives to demonstrate their feasibility and effectiveness.

The responsibilities will include, but are not limited to:

- Performing analysis of project needs with an eye toward Biomimicry integration
- Participating in scheduled Biomimicry Events where general challenges (i.e. surface lubricity, locomotion, tissue acquisition, hemostasis, biocompatible materials, etc.) are discussed with engineers and designers
- Identifying and documenting approaches that can be assisted by biomimicry principles
- Working with New Product Development Staff to ensure that the device fabrication based on biomimicry is appropriate and addresses the critical issues
- Cooperating with New Product Development Staff to ensure that the proper testing is performed and valuable
- Assessing differences with respect to commercially available products to help document and justify results
- Assisting in the final integration of these principles into product offerings

This is an exciting opportunity for a student to gain medical device experience and make a difference while completing a graduate degree. If you are interested, please apply to this program.

For more information about the Biomimicry Fellowship Program, in general, contact Emily Kennedy (ekennedy@uakron.edu). For more information about the US Endoscopy Biomimicry Fellowship, specifically, contact Chris Kaye (ckaye@usendoscopy.com), copying Emily Kennedy (ekennedy@uakron.edu). For more information about University of Akron's partnering organization, Great Lakes Biomimicry, who co-designed and co-implements the Biomimicry Fellowship Program, visit their website at www.glbiomimicry.org.