

North Carolina: developing devices to meet global health needs

From medical engineering labs to global manufacturers of medical devices, North Carolina is rich in breakthrough technologies for diagnosing and treating medical conditions.

Drawing upon North Carolina's outstanding academic base, its world-renowned workforce, its welcoming business climate and a unique history of partnership and collaboration, NCBiotech has led the state's life science growth trajectory for well over three decades. And North Carolina's medical device companies have become an increasingly important part of the state's globally leading life science ecosystem.

Throughout North Carolina, medical device companies are leveraging the state's strong research universities and entrepreneurial ecosystem to develop technologies and tools for surgery, disease detection and improved healthcare effectiveness. Everything from nano-scale medical devices that can transport and deposit therapeutic molecules to large robotic systems that help surgeons create big changes through small incisions.

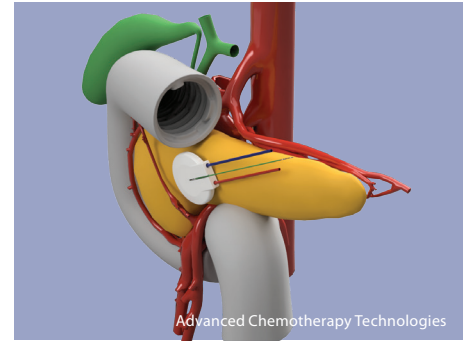
Our medical device industry includes large global enterprises such as **Cook Medical**, which employs 640 people at its growing endoscopy unit in Winston-Salem. The family-owned business founded in 1963 in Bloomington, Ind., sells minimally invasive medical devices in 41 medical specialties. The company makes 16,000 products that serve 13 hospital lines in 135 countries. Cook has 12,000 employees worldwide.

Durham-based hearing technology company **MED-EL USA** has become a global leader in hearing technology with its BONEBRIDGE bone conduction hearing implant system. It's the world's first and only active bone conduction hearing implant, widely considered a breakthrough in bone conduction technology. The device, first introduced in Europe in 2012, is for people 12 years and older who have been diagnosed with conductive hearing loss, mixed hearing loss, or single-sided deafness.

TransEnterix, based in Morrisville, develops robotics to improve minimally invasive surgery. The company's multi-port robotic system combines the advantages of robotic surgery with innovative surgical technology such as haptic feedback and eye-sensing camera control. In 2018, President and CEO Todd M. Pope was named one of Time magazine's 50 Most Influential People in Health Care.

TransEnterix was founded in 2006 by Synecor, a Chapel Hill business accelerator that spun out of **Duke University** in 2001 to commercialize medical device inventions.

North Carolina: building a diverse and exciting medical device ecosystem



Morrisville airway products company **Circassia** specializes in innovative asthma management products that are marketed directly to physician specialists. Recently, insurance provider AETNA deemed one of Circassia's key asthma products "medically necessary." The British company moved its U.S. headquarters to the Triangle with support from NCBiotech and other partners.

UVision360, in Raleigh, is changing the way gynecologists examine patients with its all-in-one gynecological system LUMINELLE DTx Hysteroscopy System. This system is a complete office-based system that allows for both diagnostic and operative hysteroscopy.

Durham-based **410 Medical** is attracting investors as it commercializes a new hand-operated device called LifeFlow, that allows health care providers to deliver fluids quickly and efficiently, improving care for patients with life-threatening conditions such as shock and sepsis. The product, conceived by WakeMed physician Mark Piehl, received FDA clearance for human use in 2016.

InnAVasc Medical of Durham is using a \$250,000 loan from NCBiotech to support a U.S.-based clinical study of its hemodialysis graft required for FDA and European Union

approval. The device, co-developed by a physician assistant and a vascular surgeon at Duke University, is an immediate-access graft that assures error-free cannulation (needle insertion) and reduces bleeding and perforation risks for hemodialysis patients.

Raleigh's **Advanced Chemotherapy Technologies** hopes to change the poor prognosis for pancreatic cancer patients by developing an implantable device to infuse chemotherapy drugs directly into the organ, targeting difficult-to-reach tumors while largely sparing surrounding tissues, organs and blood vessels. Scientists at the UNC School of Medicine are preparing the device for human trials.

Durham's **NeuroTronik** is a medical device company developing a novel neuromodulation therapy for patients suffering from acute decompensated heart failure.

Then there's **URO-1 Medical** of Winston-Salem. When the company needed help commercializing its device that works with endoscopes to allow precise injections of Botox into the bladder wall to treat overactive bladder, it received a \$250,000 NCBiotech loan and turned to **Novex Innovations**. The local contract development and manufacturing organization will test market, manufacture and ship the product, Repris, when it is fully commercialized in 2019.

*North Carolina's growing medical device sector is changing healthcare around the world.
The right location, in a strong ecosystem with skilled talent, can pay big dividends over time.
Let NCBiotech help you find the perfect place to transform your company.*

North Carolina Biotechnology Center

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