



Wake Forest University School of Medicine Graduate Medical Education

# COMPLEX GENERAL SURGICAL ONCOLOGY



**Wake Forest University**  
**School of Medicine**

## Welcome

The Complex General Surgical Oncology Fellowship is a two-year program focused on clinical and operative skills in surgical oncology, while emphasizing complex surgical procedures for problems seen in a tertiary referral center.



## Complex General Surgical Oncology Program

Surgical Oncology is a key component of the Comprehensive Cancer Center and the Department of General Surgery. The overarching goals of the Surgical Oncology Service are to provide exemplary state-of-the-art care in a setting linked to research and education at all levels. The service is extensively involved in multimodality consultations for the care of patients with melanoma, sarcoma, endocrine tumors and diseases of the breast, as well as the full spectrum of gastrointestinal malignancy from esophagus to anus. The service serves as a referral source for the region's cancer patients. This leads to a very busy clinical service with approximately 2,000 major operative cases and more than 10,000 outpatient visits per year.

Faculty members of Surgical Oncology are dedicated to teaching the next generation of physicians to care for those with oncologic diseases. Trainees on service are part of a team that brings considerable clinical expertise to caring for patients who require cancer staging, treatment and follow-up due to primary, recurrent or metastatic malignancy. A substantial portion of clinical effort is also devoted to the resection of metastatic disease, including that of the liver, lung, peritoneum and lymph nodes. Extensive clinical experience in a tertiary referral setting also provides the surgical know-how for dealing with rare and unusual neoplasms.

### **Fellowship highlights include:**

- Oncology
- Surgical Pathology
- Medical Oncology
- Radiation Oncology
- Involvement in research and academic endeavors

### **Subspecialties include:**

- Breast Care Center
- Hyperthermic Intraperitoneal Chemotherapy (HIPEC)
- Hepatobiliary & Pancreatic Surgery
- Endocrine Surgery
- Melanoma/Sarcoma Surgery

### **Our rotations include:**

- Surgical Oncology
- Endocrine
- Breast
- Radiation Oncology
- Gynecologic Oncology
- Medical Oncology
- Thoracic Surgical Oncology
- Colorectal Surgery
- Palliative Care

## Subspecialties

### BREAST CARE CENTER

The Breast Care Center offers a full spectrum of services to improve breast health. Services include screening and diagnostics, breast cancer treatment for both benign and malignant breast disease and prevention and survivor programs. Atrium Health Wake Forest Baptist was also first in the region to be granted full accreditation by the National Accreditation Program for Breast Centers, administered by the American College of Surgeons. We are also an accredited Breast Imaging Center of Excellence through the American College of Radiology.

#### Resources include:

A **Breast Imaging Center of Excellence** incorporating mammography, ultrasound, MR and image-guided biopsy staffed by experts in breast imaging.

**Multidisciplinary care.** We have developed a system that streamlines breast cancer diagnosis, treatment and follow-up of our patients. In addition, our surgical oncologists and plastic surgeons work in tandem to plan and perform breast reconstructions.

**Specialists who are experts at breast cancer treatment.** Our physicians, who are all fellowship-trained, work collaboratively to identify the most effective treatment options for each breast cancer patient.

**Personalized breast cancer treatment plans.** Most patients get the opportunity to meet with multiple physicians in a single day and leave with a treatment plan in place.

**Clinical trials and basic research.** By combining laboratory and clinical research, we provide our patients with the latest advances in breast cancer diagnosis and treatment, including: sentinel lymph-node mapping, breast-conserving surgery, immediate breast reconstruction and radiation therapy implants.

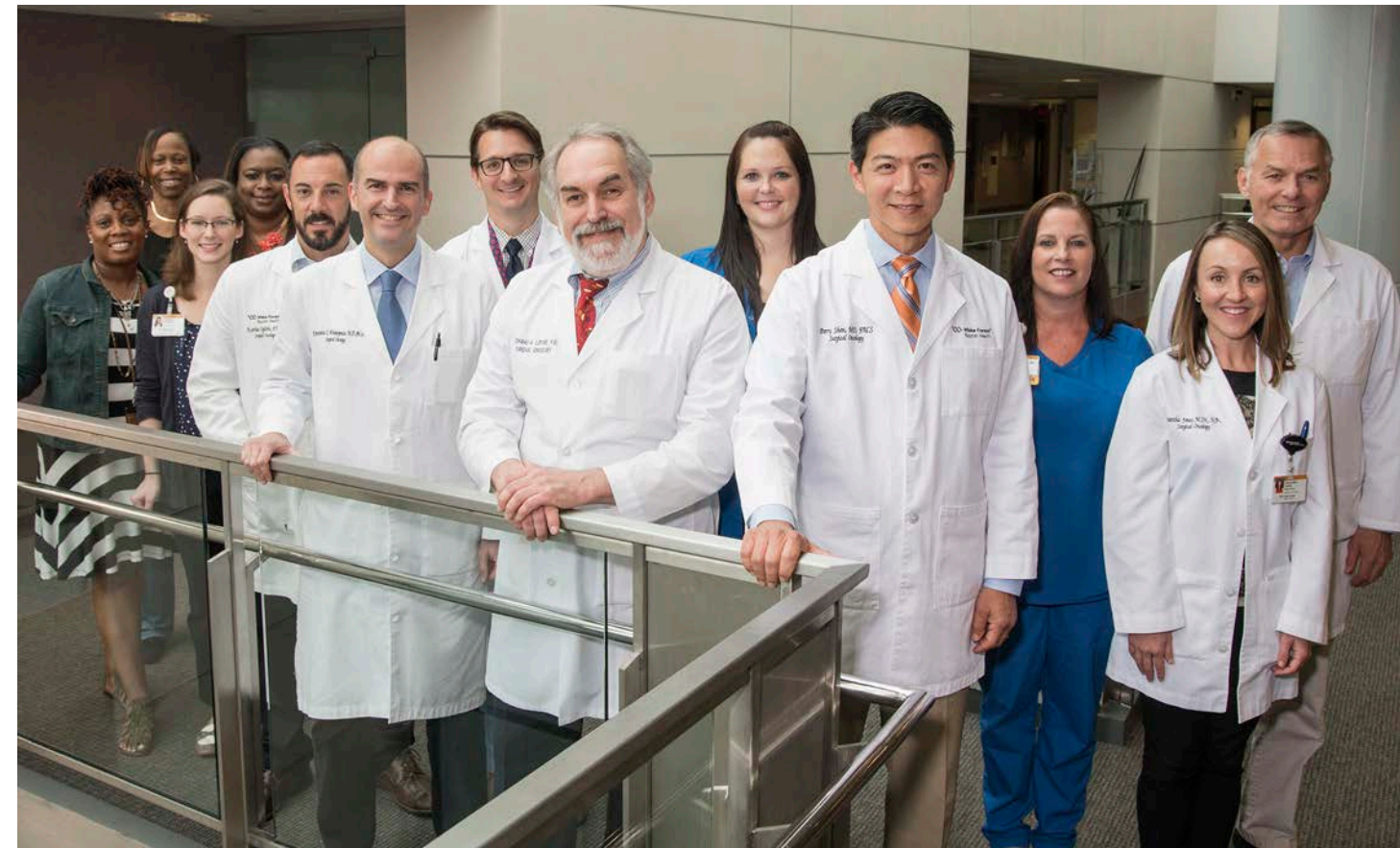
**Genetic screening** is offered by the Genetic Counseling Program for a variety of cancers including breast, colorectal, ovarian and melanoma. Our genetic counselors work with us in clinic and support genotyping in appropriate patients prior to operative interventions.

### HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY (HIPEC)

We've offered this promising and innovative therapy to patients since 1991. Currently, there are only a handful of experienced centers and surgeons across the country. Our world-class expertise in HIPEC draws patients from all over the United States for both established treatments and clinical trials. The logic behind the procedure is that delivering antineoplastic agents into the peritoneal cavity after maximal cytoreduction has a substantial pharmacokinetic dosing advantage over even the most aggressive systemic therapies. During the procedure, the surgeon removes all visible growth from the patient's abdomen, inserts cannulas through the abdominal wall and temporarily closes the incision. The cannulas are attached to a pump which completes a circuit that moves

a heated anti-cancer drug fluid into the abdominal cavity and then back out for a constant flow. The hyperthermia improves the drug's effectiveness, particularly in patients for whom there was previously no hope. This approach can add years of life for patients, and has led to hope and even cures of patients thought to be untreatable elsewhere.

Our team has been honored with numerous prestigious medical publications and has trained surgeons performing the procedure at other leading institutions. The Surgical Oncology Service has performed over 1,900 of these procedures, representing one of the most experienced teams worldwide.



## HEPATOBIILIARY & PANCREATIC SURGERY (HPB)

HPB surgery consists of the general surgical treatment for benign and malignant diseases of the liver, pancreas, gallbladder and bile ducts. These are among the most challenging and complex surgical procedures performed in General Surgery and require a high degree of expertise and skill.

We have a dedicated multidisciplinary team committed to the diagnosis and treatment of complex diseases of the liver bile duct, gallbladder and pancreas. Our team specializes in minimally invasive approaches including laparoscopic, robotic and endoscopic techniques. We are a National Pancreas Foundation-accredited center for pancreatic cancer.

Our center is one of only 40 programs in the country offering hepatic arterial infusion regional chemotherapy for colorectal liver metastases. This specialized treatment delivers high-dose chemotherapy to the liver to downsize unresectable disease and improve survival after surgical treatment.

## ROBOTIC SURGERY

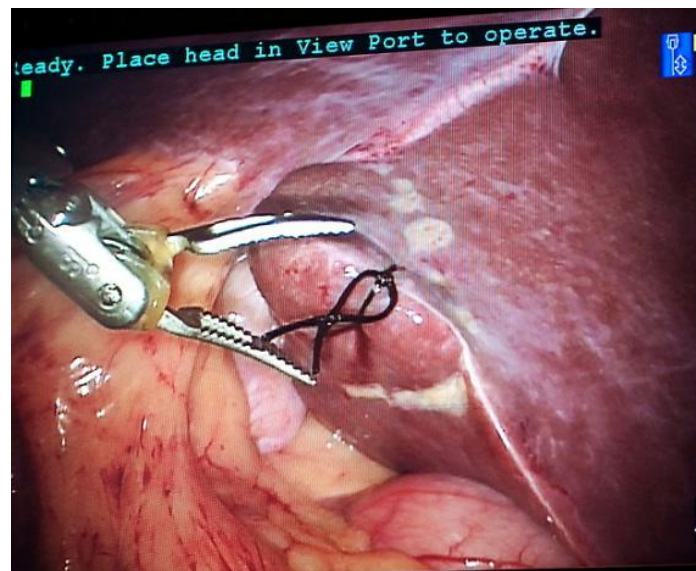
We currently have three DaVinci Robotic Surgical Systems – three Xi (one with training console) systems in the operating room. There is dedicated robotic OR time for General Surgical Oncology and fellows are expected to receive full credentialing in robotic surgery if they have not already done so in residency.

## CLINICAL TRIALS

Our Surgical Oncology research program has about 30 trials open.

### This program features:

- Cooperative group oncology trials
- Investigator-initiated trials
- Database-driven retrospective trials (HIPEC, liver, breast, esophagus, melanoma and pancreas)
- Collaborative data-sharing studies
- Tissue procurement infrastructure
- Quality of life/outcome trials

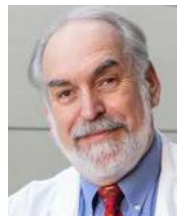


## Publications and Presentations

The surgical oncology research program led to 66 authorships for faculty in **41 individual peer reviewed manuscripts in 2023**. Further, our efforts to make research available to trainees has borne fruit, as **20+ resident and fellows were co-authors on our manuscripts in 2023**. Our clinical research was highlighted by a publication in the New England Journal of Medicine (co-authored by Dr. Levine) on the practice

changing MSLT-2 trial, which showed that complete lymphadenectomy is not routinely required for melanoma metastatic to sentinel lymph nodes. We were also well represented at major surgical conferences including six presentations at the Society of Surgical Oncology meeting in March, and major presentations at national and international HIPEC symposia, and GI-ASCO

## Faculty



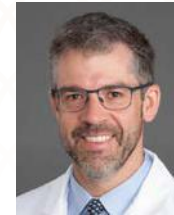
**Edward Levine, MD**  
**Chief, Surgical Oncology**  
**Professor, Surgical Sciences – Oncology**  
**Tumor Bank Core Director, Comprehensive Cancer Center**  
**Senior Advisor to the Center Director, Comprehensive Cancer Center**

Medical School: Finch University of Health Sciences – Chicago Medical School  
 Residency: Michael Reese Hospital and Medical Center  
 Fellowship: University of Illinois



**Perry Shen, MD**  
**Professor, Surgical Sciences – Oncology**  
**Program Director, Complex General Surgical Oncology Fellowship**  
**Director, Liver and Pancreas Surgery Program**

Medical School: University of Southern California School of Medicine  
 Residency: University of Southern California Affiliated Hospitals  
 Fellowship: John Wayne Cancer Institute



**Clancy Clark, MD**  
**Associate Professor, Surgical Sciences – Oncology**

Medical School: Ohio State University College of Medicine  
 Residency: Virginia Mason Medical Center  
 Fellowship: Surgical Research, Virginia Mason Medical Center  
 Hepatobiliary and Pancreatic Surgery, Mayo Clinic



**Russell Howerton, MD**  
**Professor, Surgical Sciences – Oncology**

Medical School: Vanderbilt University School of Medicine  
 Residency: Tufts-New England Medical Center  
 Fellowship: Mt. Sinai Hospital of Cleveland  
 London Hammersmith Hospital – United Kingdom



**Charity Glass, MD**  
**Assistant Professor, General Surgery – Oncology**

Medical School: Harvard Medical School  
 Residency: Beth Israel Medical Center  
 Fellowship: Brigham and Women's Hospital



**Reese W. Randle, MD**  
**Associate Professor, Surgical Sciences – Oncology**  
**Program Director, General Surgery Residency**

Medical School: University of Texas – Houston  
 Residency: Wake Forest Baptist Medical Center  
 Fellowship: Endocrine Surgery – University of Wisconsin



**Marissa Howard-McNatt, MD**  
**Professor, Surgical Sciences – Oncology**  
**Director, Breast Care Center**

Medical School: Harvard Medical School  
 Residency: West Virginia University Hospital  
 Fellowship: Massachusetts General Hospital



**Konstantinos Votanopoulos, MD**  
**Professor, Surgical Sciences – Oncology**  
**Director Wake Forest Organoid Research Center (WFORCE)**

Medical School: Aristotle University School of Medicine – Greece  
 PhD: Aristotle University School of Medicine – Greece  
 Residency: Baylor College of Medicine  
 Fellowship: Roswell Park Cancer Institute



## Atrium Health Wake Forest Baptist Facts

### QUICK FACTS

- Total Licensed Beds: **1,551**
- Inpatient Admissions: **59,493**
- Emergency Department Visits: **237,663**
- Other Outpatient Visits: **1.42 million**
- Total Research Awards: **\$319 million**
- School of Medicine Faculty: **2,376**
- Total Physicians: More than **1,531**
- Registered Nurses: **4,293**
- Medical Students: **573**
- Total Workforce: **21,581**
- **\$540 million** in estimated unreimbursed care
- **\$52.5 million in financial assistance**
- **\$179.4 million** in education, unfunded research and community health initiatives, operations, programs and donations

### OUR HISTORY

- **1902** Wake Forest College Medical School is founded as a two-year program on the campus of Wake Forest College in Wake Forest, North Carolina.
- **1923** North Carolina Baptist Hospital opens in Winston-Salem as an 88-bed facility with a School of Nursing.
- **1939** A trust fund of \$750,000 established in the will of Bowman Gray Sr. is pledged to relocate the Wake Forest Medical School to Winston-Salem and expand its program to four years.
- **1941** Bowman Gray School of Medicine opens in Winston-Salem with 75 students.
- **1942** First General Surgery residency program graduate.

- **1957** The Medical Center becomes the first in the state to use cobalt to treat cancer patients.
- **1964** The first hand re-implantation in the United States is performed by Jesse Meredith, MD.
- **1969** The Medical Center is the first in the nation to use ultrasound to detect prostate cancer.
- **1974** Cancer Center is accredited by the NCI.
- **1978** Commission on Cancer accreditation by the American College of Surgeons.
- **1990** Cancer Center is designated as a "Comprehensive" Cancer Center.
- **1991** First HIPEC procedure performed at Wake Forest.
- **1998** Breast cancer sentinel node mapping program initiated.
- **2000** Multimodality Breast Care Clinic opens.
- **2004** Outpatient Cancer Center Building opens containing Surgical Oncology Clinics.
- **2009** Surgical Oncology Fellowship initiated.
- **2009** National Accreditation Program for Breast Cancer (NAPBC) approval.
- **2013** An addition to the Comprehensive Cancer Center nearly doubles its size and brings inpatient and outpatient services under one roof.
- **2014** Surgical Oncology accreditation granted by ACGME and American Board of Surgery.
- **2020** Wake Forest Organoid Research Center (WFORCE), a joint effort between the Wake Forest Institute for Regenerative Medicine and the Comprehensive Cancer Center, is established.
- **2023** Atrium Health Levine Cancer is formed, becoming the largest cancer program in the Carolinas. It is fueled by the research and innovation of the Comprehensive Cancer Center.

## Winston-Salem, North Carolina

Winston-Salem, a city of about 250,000 people, is located in Forsyth County in the Piedmont Area of North Carolina.

It has been named among America's most livable cities, and features low traffic, a low cost of living, a low crime rate and four distinct, yet temperate seasons.

The city's vibrant downtown area includes the Stevens Center for the Performing Arts, the Milton Rhodes Center for the Arts and BB&T Ballpark, home of the minor-league Winston-Salem Dash baseball team, as well as a growing number of apartments, condominiums, lofts, craft bars and restaurants. The Downtown Arts District, centered on Trade Street, is home to an ever-expanding lineup of unique galleries and shops.

Ten miles west, just off Interstate 40, is Forsyth County's Tanglewood Park, with its PGA championship golf courses, tennis courts, swimming pool, picnic grounds, horseback riding, paddle boats and playing fields. There are more than 30 local golf courses.

Winston-Salem is about an hour away from Hanging Rock and Pilot Mountain state parks and the Blue Ridge Parkway. Driving time to the Carolina beaches varies from four to five hours. North Carolina is a home to a burgeoning number of local wineries, many of which are within short drives of Winston-Salem.

The city is home to the University of North Carolina School of the Arts, the only state-supported school for the arts in the nation. Also in the city are the Winston-Salem Orchestra, Piedmont Opera, the Southeastern Center for Contemporary Art (SECCA), Reynolda House with its gardens and American art collection, the museum of Early Southern Decorative Arts (MESDA) and Old Salem, the site of the Moravian town founded in 1766, from which the present city grew.

For more information about the region, go to [visitwinstonsalem.com](http://visitwinstonsalem.com).









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