

Surgical Oncology Fellowship

Patient Care and Medical Knowledge Curriculum Outline

Based on the Surgical Council on Resident Education (SCORE) General
Surgery Curriculum

Classification System

Diseases/Conditions

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- **BROAD-** A graduate of the Surgical Oncology training program should be able to care for all aspects of disease or and provide comprehensive management. When referring to a discipline of training (e.g. research or community outreach), the graduate should be able to carry out the endeavor from its conception through completion.
- **FOCUSED-** A graduate of the Surgical Oncology training program should be able to make the diagnosis, provide initial management, but will not be expected to be able to provide comprehensive management. For disciplines of training, the graduate should be able to implement and participate in the activity, but would not be expected to complete it on own.

Operations/Procedures

- **ESSENTIAL-COMMON-** Frequently performed operations, procedures, or endeavors for a surgical oncologist; specific procedure competency is required by end of training and should be attainable primarily by case volume or active participation in the activity/endeavor.
- **ESSENTIAL-UNCOMMON-** Uncommon operations, procedures, or endeavors for a surgical oncologist in practice and not typically done in significant numbers by trainees; specific procedure competency required by end of training, but cannot be attained by case volume or participation in the activity/endeavor alone.

- **COMPLEX-** Not consistently performed by a surgical oncologist in training and not typically performed in surgical oncology practice. Generic experience in complex procedures or endeavors in training is required, but not competence in individual procedures/endeavors.

This curriculum is designed to be completed over the course of a 24 month Surgical Oncology Training Program and represents core education in Advanced Surgical Oncology.

Yellow highlighted text denotes rare tumors or uncommon management of common tumors that would be considered within the scope of Surgical Oncology practice and training.

UPPER GI MALIGNANCIES

Diseases/Conditions

BROAD

- Gastric adenocarcinoma
- Gastrointestinal stomal tumors (GIST)
- Small bowel adenocarcinoma
- Neuroendocrine neoplasm (carcinoid tumors)
 - Gastric Carcinoid
 - Type I
 - Type II
 - Type III
 - Duodenal NET
- Hereditary Diffuse Gastric Cancer (HDGC)
- Surgery for intra-abdominal desmoids tumors
- Splenectomy of hematologic malignancy

FOCUSED

- Lymphoma
 - Diagnosis of systemic lymphoma
 - Diagnosis and medical management of MALT
- Familial Adenomatous Polyposis
 - Diagnosis and surgical treatment of UGI tract polyposis
- Management of sporadic UGI tract polyps

Operations/Procedures

ESSENTIAL-COMMON

- Staging laparoscopy
- Peritoneal washings/cytology
- Open distal subtotal gastrectomy
- Open total gastrectomy
- Open D1/D2 lymphadenectomy
- Open or laparoscopic partial gastrectomy (“wedge” resection)
- Open radical small bowel resection with regional lymphadenectomy
- Laparoscopic small bowel resection
- Prophylactic open total gastrectomy

ESSENTIAL-UNCOMMON

- Open radical duodenal (pancreatic-preserving) resection
- Open or laparoscopic splenectomy
- Laparoscopic subtotal gastrectomy
- Laparoscopic total gastrectomy
- Laparoscopic D2 lymphadenectomy

COMPLEX

LIVER

Diseases/Conditions

BROAD

- Liver Mass – evaluation
- Hepatic adenoma
- Focal nodular hyperplasia
- Hemangioma
- Hepatocellular carcinoma
- Cholangiocarcinoma
- Klatskin tumor
- Metastatic tumors
- Miscellaneous hepatic neoplasms

FOCUSED

- Transplantation for primary hepatic neoplasms

Operations/Procedures

ESSENTIAL-COMMON

- Open liver biopsy
- Laparoscopic liver biopsy
- Complex anatomic hepatic or biliary procedure
 - Open segmentectomy/lobectomy
 - Laparoscopic segmentectomy/lobectomy
 - Defined as major hepatic resection of 2-7 segments +/- bile duct reconstruction
- Ablation of liver lesion (open, laparoscopic, percutaneous)
- Intraoperative ultrasound

ESSENTIAL-UNCOMMON

COMPLEX

- Placement hepatic artery infusion pump
- Transcatheter arterial chemoembolization (TACE)
- Radiolabeled spheres
- Isolated liver perfusion/infusion

PANCREAS

Diseases/Conditions

BROAD

- Ductal adenocarcinoma
- Acinar cell carcinoma
- Cystic neoplasms
- Intraductal papillary mucinous neoplasms
- Other periampullary neoplasms
- Gastrinoma and Z-E syndrome
- Insulinoma
- VIPoma
- Glucagonoma
- Somatostatinoma
- Nonfunctional endocrine tumors
- Pancreas/periampullary neoplasms
 - Resectable – 3
 - Locally advanced- 3

FOCUSED

- Metastatic pancreas/periampullary neoplasms
- Lymphoma of pancreas
- Metastatic disease to the pancreas

Operations/Procedures

ESSENTIAL-COMMON

- Pancreaticoduodenectomy (including pylorus preserving)
- Distal pancreatectomy+/- splenectomy
 - Laparoscopic or open
- Enucleation of neuroendocrine tumors
- Intraoperative assessment
 - IOUS
 - Laparoscopy
- Palliative management for inoperable gastric or pancreatic cancers
 - Gastrojejunostomy
 - G- tube
 - Feeding jejunostomy
 - Biliary bypass

ESSENTIAL-UNCOMMON

- Total pancreatectomy
- PV resection/reconstruction
- Ampullary resection for tumor

COMPLEX

- ERCP or drainage procedure

BILIARY

DISEASES/CONDITIONS

BROAD

- gallbladder cancer
- cholangiocarcinoma
- choledochal cyst

OPERATIONS/PROCEDURES

ESSENTIAL-COMMON

- resection for gallbladder cancer (including liver resection)
- resection cholangiocarcinoma (including hepaticojejunostomy)
- resection choledochal cyst
- porta hepatis lymphadenectomy

ESSENTIAL-UNCOMMON

COMPLEX

COLORECTAL/ANAL MALIGNANCIES

Diseases/Conditions

BROAD

- Colon adenocarcinoma
- Rectal adenocarcinoma
- Anal squamous cell carcinoma
- Recurrent anal squamous cell carcinoma (surgical salvage)
- Surgical management of colorectal cancer syndromes
- Neuroendocrine neoplasm (Carcinoid tumors)

FOCUSED

- Locally advanced rectal cancer
- Surveillance of colorectal cancer syndromes
 - Familial Adenomatous Polyposis (FAP)
 - Classic FAP
 - Attenuated FAP
 - Hereditary Non-polyposis Colorectal Cancer
 - Lynch I
 - Lynch II
 - Miscellaneous cancer syndromes
 - Muir-Torre syndrome
 - Turcot syndrome
 - Gardner's syndrome
 - MYH associated adenomatous polyposis (MAP)
 - Peutz-Jeghers syndrome (PJS)
 - Polyposis Coli
 - Familial Polyposis Coli (FPC)
 - Juvenile Polyposis Coli (JPC)

Operations/Procedures

ESSENTIAL-COMMON

- Open or laparoscopic partial colectomy
- Open subtotal colectomy with ileorectal anastomosis
- Open proctocolectomy with ileoanal anastomosis (low anterior resection)
- Creation of ileostomy
- Creation of colostomy
- Closure of ileostomy
- Abdominoperineal resection
- Transanal excision of rectal cancer
- Wide excision anal cancer
- Ilioinguinal lymph node dissection

ESSENTIAL-UNCOMMON

- Pelvic exenteration
- Laparoscopic subtotal colectomy with ileorectal anastomosis
- Laparoscopic proctocolectomy with ileoanal anastomosis

COMPLEX

- Proctectomy (posterior approach)
- Transanal excision/microsurgery (TEMS)
- Transanal ultrasonography
- Photodynamic therapy (PDT)

APPENDICEAL TUMORS

Diseases/Conditions

BROAD

- adenocarcinoma
- carcinoid
- disseminated peritoneal adenomucinosis (DPAM or pseudomyxoma peritoneii)

Operations/Procedures

ESSENTIAL-COMMON

- Appendectomy
- Right hemicolectomy
- Palliative debulking

ESSENTIAL-UNCOMMON

- Cytoreduction/hyperthermic intraperitoneal chemoperfusion (HIPEC)

COMPLEX

MELANOMA

Diseases/Conditions

BROAD

- Primary melanoma
- Desmoplastic variant
- Acral Lentiginous
- Subungual
- Anal and vaginal melanoma
- Microscopic nodal metastasis
- Bulky nodal metastatic disease in common nodal basins (ilioinguinal, axillary, neck)
- Nodal disease in atypical nodal basins (popliteal and epitrochlear)
- Isolated in transit disease

FOCUSED

- Adjuvant therapy
- Non-surgical treatment distant metastatic disease

Operations/Procedures

ESSENTIAL-COMMON

- Wide excision/primary closure
- Sentinel lymph node biopsy
- Complex skin closure (skin graft, local rotation flap)
- Inguinal lymph node dissection (including sartorius rotation flap)
- Ilioinguinal lymph node dissection (with or without superficial node dissection)
- Levels I/II/III axillary lymph node dissection
- Selective neck dissection

ESSENTIAL-UNCOMMON

- Epitrochlear lymph node dissection
- Popliteal lymph node dissection
- Transanal excision
- Isolated regional therapy for extremity in-transit disease
 - Isolated limb perfusion (ILP)
 - Isolated limb infusion (ILI)

COMPLEX

- Intralesional injection (BCG, interferon)

BREAST DISEASES/CONDITIONS

BROAD

Benign Breast:

- Breast imaging abnormality
- Breast mass
- Nipple discharge
- Breast pain
- Fibroadenoma
- Intraductal papilloma
- Radial Scar or sclerosing papillary lesion
- Breast cyst
- Granulomatous mastitis, mastitis and abscess
- Mondor disease
- Fat necrosis
- Galactocoele
- Atypical ductal/lobular hyperplasia
- High risk for breast cancer
- BRCA patient

Breast Cancer

- Ductal carcinoma in situ
- Lobular carcinoma in situ – pleomorphic and non-pleomorphic
- Invasive ductal carcinoma
- Invasive lobular carcinoma
- Hormone receptor positive breast cancer versus triple negative breast cancer
- Paget's disease of the nipple
- Inflammatory breast cancer
- Locally advanced breast cancer
- Cystosarcoma phyllodes
- Breast cancer during pregnancy and lactation
- Occult breast cancer with axillary metastasis
- Male breast cancer
- Hereditary breast cancer
- Indications for breast radiation
- Choices of Radiation – Partial Breast, Whole Breast, Canadian Fractionation
- Understanding indications for Oncotype or Mammaprint testing and the role these tests play on chemotherapy recommendations

FOCUSED

- Metastatic disease to the breast – lymphoma, melanoma
- Sarcoma of the breast
- Miscellaneous breast cancer syndromes – Cowden's, P53 mutation

Operations/Procedures

ESSENTIAL-COMMON

- Cyst Aspiration
- FNA of breast mass
- Breast Ultrasonography, diagnostic and biopsy
- Lumpectomy/Partial mastectomy with and without needle localization
- Mastectomy – simple, skin sparing, nipple/areolar sparing
- Sentinel lymph node biopsy with both blue dye and nuclear injection
- Axillary lymph node dissection, completion after SLN positive or clinical disease
- Oncoplastic closure of lumpectomy
- Understand indications for neoadjuvant therapy
- High risk patients and genetic predisposition to breast cancer

ESSENTIAL-UNCOMMON

- Level 3 lymph node dissection
- Radical mastectomy/resection of chest wall disease
- Placement of Mammosite or SAVI parital breast radiation catheter

COMPLEX

- Stereotactic Core Biopsy
- MRI biopsy
- Ductoscopy
- Ductal Lavage
- Implant reconstruction
- Flap reconstruction
- Partial mastectomy via breast reduction/mastopexy
- Intraoperative Radiation Therapy

SOFT TISSUE SARCOMAS/TUMORS

Diseases/Conditions

BROAD

- Soft tissue sarcoma
 - Extremity
 - Truncal
- Retroperitoneal sarcoma
- Intraabdominal sarcoma
- Gastrointestinal stromal tumors (GIST)
- Desmoids/aggressive fibromatosis
- Dermatofibrosarcoma protuberans (DFSP)
- Extraskelatal Ewing's/PNET/non-osteogenic osteosarcoma
- Post breast cancer angiosarcoma
- Benign neurogenic tumors (neurofibroma and schwannoma)
- Intramuscular atypical lipomatous tumors
- Intramuscular hemangioma
- Resectable metastatic sarcoma
- Sarcomatosis

FOCUSED

- Treatment of distant metastatic disease

Operations/Procedures

ESSENTIAL-COMMON

- Limb salvage extremity sarcoma resection
- Resection for intraabdominal/retroperitoneal sarcoma
- Multivisceral resection for intraabdominal/retroperitoneal sarcoma

ESSENTIAL-UNCOMMON

- Radical amputations (forequarter, hip disarticulation, hemipelvectomy)
- Isolated regional therapy for extremity tumors
 - Isolated limb infusion (ILI)
 - Isolated limb perfusion (ILP)

COMPLEX

- Brachycatheter placement
- Intraoperative radiation therapy
- Pulmonary metastasectomy

BONE TUMORS

Diseases/Conditions

BROAD

FOCUSED

- Osteogenic sarcoma
- Ewing sarcoma
- Chondrosarcoma

Operations/Procedures

ESSENTIAL-COMMON

ESSENTIAL-UNCOMMON

COMPLEX

- Major bone resection/joint
- Reconstruction after bone/joint resection

RARE SKIN TUMORS

Diseases/Conditions

BROAD

- Merkel cell
- Aggressive invasive squamous cell carcinoma
- Eccrine carcinoma
- Sebaceous carcinoma
- Extramammary Paget's disease
- Bowen's disease

Operations/Procedures

ESSENTIAL-COMMON

- Wide local excision for rare skin tumors
- Sentinel lymph node biopsy for rare skin tumors

ESSENTIAL-UNCOMMON

COMPLEX

- isolated regional therapy (ILI and ILP) for extremity tumors

PERITONEAL SURFACE MALIGNANCIES

Diseases/Conditions

BROAD

- carcinomatosis
- mesothelioma
- metastatic ovarian cancer
- desmoplastic small round cell tumor (DSRCT)
- disseminated peritoneal adenomucinosis (DPAM or pseudomyxoma peritoneii)

Operations/Procedures

ESSENTIAL-COMMON

- palliative surgery

ESSENTIAL-UNCOMMON

- cytoreduction/hyperthermic intraperitoneal chemoperfusion (HIPEC)

COMPLEX

ENDOCRINE

Diseases/Conditions

BROAD

- Thyroid nodule(s)
- Papillary carcinoma
- Follicular carcinoma
- Primary hyperparathyroidism
- Hypothyroidism (postoperative)
- Medullary carcinoma
- Hurthle cell tumors
- Anaplastic carcinoma
- Secondary hyperparathyroidism
- Parathyroid carcinoma
- Multiple endocrine neoplasia type I
- Multiple endocrine neoplasia type IIA
- Multiple endocrine neoplasia type IIB
- Incidental adrenal mass
- Pheochromocytoma
- Adrenal myelolipoma
- Adrenocortical carcinoma
- Insulinoma

FOCUSED

- Tertiary hyperparathyroidism
- Cushing's disease
- Primary hyperaldosteronism
- Cushing's syndrome

Operations/Procedures

ESSENTIAL-COMMON

- Partial or total thyroidectomy with or without lymphadenectomy
- Minimally invasive parathyroidectomy
- Traditional four gland exploration
- Adrenalectomy (open or laparoscopic)

ESSENTIAL-UNCOMMON

- Head & neck ultrasonography
- Pancreatic resection for endocrine neoplasms
- Modified radical neck dissection for thyroid carcinoma

COMPLEX

- None

HEAD AND NECK

Diseases/Conditions

BROAD

- Cervical lymphadenopathy

FOCUSED

- Mucosal cancers of the oral cavity
- Mucosal cancers of the pharynx
- Mucosal cancers of the larynx
- Parotid gland tumors
- Submandibular gland tumors

Operations/Procedures

ESSENTIAL-COMMON

- Tracheostomy
- Cervical lymph node biopsy

ESSENTIAL-UNCOMMON

- Head & neck tumors exclusive of endocrine and melanoma
- Modified radical neck dissection

COMPLEX

- Resection of lip/tongue lesion
- Parotidectomy

THORACIC MALIGNANCIES

Diseases/Conditions

BROAD

- Esophageal cancer
 - Adenocarcinoma
 - Squamous cell carcinoma
 - GIST
- Non-small cell lung cancer
- Diagnosis and staging of bronchoalveolar carcinoma
- Pulmonary metastases
 - Colorectal
 - Sarcoma
 - Germ cell tumors
- Malignant pleural effusion

FOCUSED

- Barrett's esophagus
- Locally-advanced, unresectable esophageal cancer
- Mediastinal or pericardial tumors

Operations/Procedures

ESSENTIAL-UNCOMMON

- Chest thoracostomy tube placement
- Diagnostic thoracostomy/thoracotomy
- Radical esophagectomy
 - Transhiatal esophagectomy
 - Ivor-Lewis esophagectomy
- Open or thoracoscopic resection of NSCLC or pulmonary metastatic disease for diagnosis and/or definitive treatment with appropriate lymphadenectomy
 - Bronchoscopy
 - Mediastinoscopy
 - Pulmonary wedge resection
 - Segmentectomy
 - Lobectomy
- Thoracoabdominal resection of esophageal or GEJ malignancies

COMPLEX

- Laparoscopic radical esophagectomy (Ivor Lewis type resection) with mediastinal lymphadenectomy
- Open or thoracoscopic pneumonectomy
- Cervical esophagectomy
- Colonic interposition
- Diagnosis and management of Barrett's esophagus or superficial (T1) esophageal cancers
 - Endoscopic mucosal resection
 - Endoscopic submucosal dissection
 - Photodynamic therapy
 - Radiofrequency ablative therapies
 - Argon beam coagulation therapy
 - Laser therapy (Nd:YAG or equivalent)
- Palliative management of locally-advanced, unresectable esophageal cancer
 - Chemoradiotherapy
 - Endoscopic stent placement
 - Local therapies (see above)
- Excision of mediastinal or pericardial tumors

GENITOURINARY

Diseases/Conditions

BROAD

FOCUSED

- Renal cell carcinoma
- Testicular cancer
- Prostate cancer
- Bladder cancer

Operations/Procedures

ESSENTIAL-COMMON

ESSENTIAL-UNCOMMON

- Pelvic exenteration
- Simple nephrectomy
- Partial cystectomy

COMPLEX

- Prostatectomy
- Partial nephrectomy
- Radical nephrectomy
- Total cystectomy/ileal conduit
- Ureteral stent placement
- Nephrostomy tube placement
- Retroperitoneal lymph node dissection
- Ureteroureterostomy

PLASTIC AND RECONSTRUCTIVE SURGERY

Diseases/Conditions

BROAD

- Wide local excision digits, foot, hand
- Acquired surgical defects secondary to wide local excision melanoma and other skin cancer
- Acquired surgical defects secondary to wide local excision sarcoma or other soft tissue tumors
- Surgical defects secondary to radical resection or amputation sarcoma
- Partial breast defects

FOCUSED

- Oral cancers requiring loss of mandibular support, oral cavity or tongue
- Acquired absence of the breast post mastectomy
- Breast asymmetry after breast conservation
- Chest wall defects created by locally advanced breast cancer, sarcoma or previously radiated patient
- Perineal/pelvic floor defects created by APR after anal cancer recurrence/radiation or posterior exenteration
- Vaginal/perineal defects created by anterior exenteration
- Significant abdominal hernia secondary to previous oncologic surgery, requiring components separation and biologic agents

Operations/Procedures

ESSENTIAL-COMMON

- Oncoplastic closure of small breast lumpectomy defects
- STSG for melanoma or other acquired skin defect
- Creation of flaps for skin closure

ESSENTIAL-UNCOMMON

- Local tissue transfer flaps for closure of acquired surgical defect
- Sartorius muscle transposition after inguinal node dissection
- Placement of Alloderm or other biologic in cancer reconstruction

COMPLEX

- Placement of tissue expander

- Pedicle TRAM or latissimus flap for breast reconstruction
- Free or DIEP abdominal flap for breast reconstruction
- Placement of permanent silicone implant
- Mastopexy
- Vaginal/perineal/pelvic reconstruction
- Flap of arm/leg flap for major amputation defects

MEDICAL ONCOLOGY

Diseases/Conditions

BROAD

- Chemotherapy principles and mechanisms of action

FOCUSED

- Management of common complications of chemotherapeutic administration
- Locally advanced breast cancer, neoadjuvant and adjuvant options
- Locally advanced gastric cancer, neoadjuvant and adjuvant options
- Locally advanced pancreatic cancer, neoadjuvant and adjuvant options
- Locally advanced rectal cancer, neoadjuvant and adjuvant options
- Hepatic metastasis with synchronous presentation
- Unresectable hepatic metastasis
- Unresectable primary hepatic tumor, systemic and local therapies
- Peritoneal surface malignancy/carcinomatosis
- Palliative/end of life care, supportive care, cancer pain management
- Esophageal carcinoma, neoadjuvant and adjuvant options
- Immunotherapy/chemotherapy for advanced melanoma
- Recurrent or metastatic GIST
- Surgical management of chemotherapy induced complications
- Directed intraoperative therapy options
- Surgical management of chemotherapy-induced complications

Operations/Procedures

ESSENTIAL-COMMON

- Insertion of indwelling chemotherapy deliverance device
- Lymph node biopsy for hematologic malignancies
- Splenectomy for ITP/TTP

ESSENTIAL-UNCOMMON

COMPLEX

- Evaluation and Management of neutropenic complications
- Evaluation and Management of locally advanced pancreatic cancer
- Evaluation and Management of locally advanced/recurrent rectal cancer
- Evaluation and Management of synchronous hepatic metastases
- Evaluation and Management of locally-advanced primary hepatic malignancies

- Evaluation and Management of unresectable hepatic metastases
- Evaluation and Management of locally advanced breast cancer
- Evaluation and Management of locally advanced gastric cancer
- Evaluation and Management of unresectable primary hepatic tumor
- Evaluation and Management of recurrent/metastatic GIST
- Evaluation and Management of peritoneal surface malignancy/carcinomatosis
- Evaluation and Management of esophageal carcinoma
- Evaluation and Management of management of locally advanced soft-tissue and extremity sarcomas
- Palliative/end of life care, Supportive care and cancer-related pain
- Immunotherapy/chemotherapy for advanced melanoma

RADIATION ONCOLOGY

Diseases/Conditions

BROAD

- Radiation biology principles

FOCUSED

- Management of common radiation complications
- Esophageal carcinoma, neoadjuvant and adjuvant options
- Locally advanced breast cancer, neoadjuvant and adjuvant options
- Locally advanced gastric cancer, neoadjuvant and adjuvant options
- Locally advanced pancreatic cancer, neoadjuvant and adjuvant options
- Locally advanced rectal cancer, neoadjuvant and adjuvant options
- Partial breast radiation
- Radiation therapy for regional and distant metastatic disease
- Radiation simulation/planning

Operations/Procedures

ESSENTIAL-COMMON

ESSENTIAL-UNCOMMON

COMPLEX

- Evaluation and Management of locally advanced pancreatic cancer
- Evaluation and Management of locally advanced/recurrent rectal cancer
- Evaluation and Management of locally advanced breast cancer
- Evaluation and Management of locally advanced gastric cancer
- Evaluation and Management of esophageal carcinoma
- Evaluation and Management of management of locally advanced soft-tissue and extremity sarcomas
- External beam radiation
- IMRT
- Brachycatheter placement
- Intraoperative radiation therapy
- Radioisotope therapy (theraspheres,
- Gamma knife

CLINICAL AND BASIC RESEARCH

BROAD - Clinical

- Assessment of Clinical Trial, Defining levels of Evidence/meta analysis
- Selection of primary and secondary endpoints
- Defining study populations, sample size, power
- Basic Survival Analysis
- Protection of Human Subjects
- Inclusion of diverse study populations
- Basic Statistical Analysis
- Institutional Review Board process
- Database management, Retrospective Reviews

BROAD – Basic Science

- Defining Hypothesis and Study Aims
- Evaluation of Study Design
- Cancer Biology/Molecular Oncology Curriculum
 - Signal transduction
 - Apoptosis
 - Angiogenesis
 - Cancer Immunology
 - Metastatic cascade
- Institutional Review Board applications
- Animal rights and protection

FOCUSED

- Assessment of Health Related QOL
- Fundamentals of Health Outcomes Studies
- Grant writing, writing a clinical trial

Application

ESSENTIAL-COMMON

- Participation in a journal club – clinical or science
- Retrospective review study of a database or case study
- Writing, submission and presentation of a cancer-related abstract
- Manuscript preparation, writing and submission
- Identification and Recruitment of patients to a clinical trial – either clinical, translational (medical or surgical oncology)
- Writing an IRB application (clinical or science study, prospective or retrospective)

ESSENTIAL-UNCOMMON

- Participation in a cooperative trial group meeting (CALGB, NSABP, ACOSOG, ECOG, NSABP, SWOG)

- Writing an application for an animal study
- Collection of tissue for tumor banking/research

COMPLEX

- Submission of a grant – clinical or scientific
- Submission of a clinical trial – institutional or multi-institutional

SURGICAL MANAGEMENT/COUNSELING FOR GENETIC SYNDROMES

BROAD

- familial adenomatous polyposis (FAP)
- hereditary non-polyposis colon cancer (HNPCC)
- BRCA1/2
- p53 mutation (Li Fraumeni)
- CDKN2A mutation (p16)
- neurofibromatosis

COMMUNITY OUTREACH AND LEADERSHIP

Diseases/Conditions

BROAD

- Communication with and education of the non-medical community
 - Cancer screening
 - Cancer prevention
 - Cancer diagnosis
 - Cancer treatment
- Communication and interaction with cancer support groups
 - Breast, colon, pancreas, melanoma, palliative care
- Communication with and education of non-oncologic physicians
 - Cancer screening
 - Cancer prevention
 - Cancer diagnosis
 - Cancer treatment
- Communication and interaction with non-oncologic surgeons
 - Clinical trials
 - Multidisciplinary conferences
- Understand disparities in screening, diagnosis, and treatment of cancer
- Presentation skills
 - Slide presentation
 - Public speaking skills
 - Panel discussion skills
- Effective preparation of educational material
 - For general public
 - For patients
 - For families of patients
 - For fellows, residents, students
 - Computer/web-based
 - Print material
- Effective preparation of outreach or screening grants

FOCUSED

- Role of Cancer Liaison Physician and Commission on Cancer
- Role within American Cancer Society, Komen, etc

Operations/Procedures

ESSENTIAL-COMMON

- Lecture/talk to non-medical community
- Attend and participate in cancer-support groups
- Lecture/talk to non-oncologic physicians
- Conference participation with general surgery and subspecialty colleagues

- Participation in American Cancer Society, Komen or similar screening and outreach events
- Lecture/talk to other fellows, residents, medical students

ESSENTIAL-UNCOMMON

- Prepare outreach/screening material
- Prepare outreach/screening grant

COMPLEX

- Attend Commission on Cancer
- Attend other Society/foundation meetings