

COVID Era Post-CSCST Fellowship in Breast /Endocrine Surgery 2021

Applications for a COVID Era Post CSCST Fellow in Breast Endocrine Surgery are now open

The National University of Ireland Galway and University College Hospital Galway are offering a one-year, fully funded, COVID surgical fellowship to surgeons who desire further experience in breast and endocrine surgical oncology and the surgical management of benign breast and endocrine disease.

This fellowship provides a unique combination of clinical and research opportunities. The fellowship is dedicated exclusively to breast and endocrine disease. Fellows will have the opportunity not only to participate in surgical care but will also have ring-fenced non-operative time spent in multidisciplinary clinics for complex patients and the opportunity for ring-fenced sessions in the areas of medical endocrinology, medical oncology, radiology (including mammography, ultrasound, MRI, and image-guided percutaneous biopsy techniques), radiation oncology, pathology, and plastic surgery (including microvascular breast reconstruction).

Details on the Fellowship are outlined below

Fellowship Information:	
Fellowship Title:	Covid Era Post CSCST Fellowship in Breast/Endocrine Surgery
Sub-Specialty area:	Breast/Endocrine Surgery

Duration of Fellowship: (it is expected that most fellowships will be of a 12-month duration, however Fellowship proposals up to 24 months will be considered if funding has been identified)	12 months with BreastCheck funding to extend to 24 months		
Main training site:	University College Hospital Galway/ BreastCheck, Western Unit		
Associated sites:	Bons Secours Hospital, Galway; Galway Clinic		
Category:	Surgery		
Clinical Component:	70%		
Non-Clinical Component:	30%		
Title of Primary Clinical Lead	Mr		
Surname:	Sweeney		
First:	Karl		
Mobile telephone number:		Other telephone number:	
E-mail address:	Karlj.sweeney@hse.ie		
OTHER CONSULTANT TRAINERS WHO WILL TEACH OR SUPERVISE THE FELLOW (e.g. Assigned Supervisor)			
Title of Consultant Trainer 1:	Mr		
Surname:	Sweeney		
First name:	Karl		
E-mail address:	Karlj.sweeney@hse.ie		
Title of Consultant Trainer 2	Professor		
Surname:	Lowery		
First name:	Aoife		
Title of Consultant Trainer 3	Professor		

Surname:	Kerin
First name:	Michael
OTHE RELEVANT CONTACT DETAILS	

BACKGROUND AND RATIONALE FOR THE FELLOWSHIP POST

Please outline the rational to the fellowship post, See Sections 1.7, 1.9, 2.2.1, 2.2.3 on the Criteria and Standards document.

The Covid Era Post CSCST Fellowship in Breast/Endocrine Surgery at Saolta Hospital Group/Galway University Hospital Breast and Endocrine Surgery Fellowship is a 12 month/24 month clinical fellowship that will train surgeons who are likely to be future leaders in Breast and Endocrine Surgery. This fellowship will provide extensive experience in the diagnostic and operative management of patients with breast and endocrine surgical conditions in addition to training in the multidisciplinary aspects of management including plastic and reconstructive surgery, medical oncology, radiation oncology, endocrinology, specialized imaging techniques, pathology, genetics and high risk hereditary breast and endocrine conditions. We aim also to promote scientific, translational and clinical research in the field of surgical oncology and endocrinology and will provide fellowship training that balances extensive clinical exposure with a strong research ethos that will allow fellows to refine their surgical and clinical skills while maintaining and further developing their research interests.

AIMS, CURRICULUM AND LEARNING OUTCOMES

Please outline the aims, curriculum and learning outcomes of the fellowship, See Sections 1.2, 1.3, 1.4, 1.11, 1.12, 1.13, 2.2.5, and 2.4 on the Criteria and Standards document.

Galway University Hospital (GUH) is a Model 4 Hospital, tertiary referral centre and designated as one of 8 cancer centres in Ireland under the National Cancer Control Programme (NCCP). GUH is the largest hospital within the Saolta Healthcare Network, which consists of a network of teaching hospitals with an academic partnership with National University of Ireland Galway (NUIG). The ethos of this hospital is to provide high quality care based on excellence in clinical practice, teaching and research.

The Breast and Endocrine Surgery Unit is a high volume tertiary referral service with a large geographical catchment area representing >30% of the geographical area of the Republic of Ireland, serving a population of >710,000.

The Breast Service treats over 500 new breast cancers per year, including both symptomatic and screen-detected malignancies. The unit has a high volume workload; the symptomatic service runs triple assessment clinics daily, with over 6500 new and 7000 review patients seen at these clinics annually (1). Additionally, there are specialised multidisciplinary reconstruction clinics, family history and high risk genetic assessment clinics. The screening service (Breastcheck Western Unit) plays a central role in the diagnosis and management of breast cancer, providing a mammographic screening service

to women aged 50 -70 years. Both the symptomatic and screening units at GUH have been purpose built with consulting rooms adjacent to radiology suites and clinics are overseen by specialist breast surgeons and radiologists, with the assistance of specialised breast care nurses. There is a significant operative workload (up to 5 full day operative lists weekly) with regular oncoplastic and reconstructive lists; our immediate postmastectomy reconstruction rate is >50% and this service is provided by both oncoplastic and plastic surgeons with a full range of reconstructive approaches including free flaps requiring microvascular anastomosis (2). There is a multidisciplinary approach to breast cancer management with 2 dedicated breast cancer Multidisciplinary Meetings (MDM) per week (symptomatic and screening).

Galway university Hospital provides a regional endocrine surgical service and is a tertiary referral centre for complex adult endocrine surgery in the region. This is a high volume centre with >120 thyroidectomies, >50 parathyroidectomies and >15 adrenalectomies performed annually. Minimal access approaches represent a significant proportion of the practice including minimally invasive parathyroidectomy, video-assisted thyroidectomy and retroperitoneoscopic adrenalectomy. GUH was the first centre in Ireland to introduce retroperitoneoscopic adrenalectomy and Professor Lowery has trained in this procedure directly with Professor Martin Walz, the German Surgeon who invented and pioneered this approach to adrenal surgery which has been adopted into surgical practice internationally (3,4). There is a dynamic endocrinology service in GUH with 6 endocrinologists, including those with a subspecialist interest in thyroid cancer and in adrenal disease resulting in ample exposure to complex familial endocrine disease. There is an endocrine surgery MDM fortnightly and an additional adrenal and hypertension MDM 3 weekly to discuss complex adrenal pathology. Both of these MDMs are attended by a multidisciplinary team encompassing endocrine surgeons, endocrinologists, nephrologists, biochemists, radiologists and nuclear imaging, pathologists and medical and radiation oncologists.

From both a breast and endocrine surgery perspective, the volume and complexity of surgery more than fulfils the criteria for recognition as a fellowship training centre as per the European Society of Surgical Oncology (ESSO) and the European Union of Medical Specialists Section of Surgery and European Board of Surgery (<https://www.essoweb.org/fellowships/esso-fellowship-breast-surgery>).

UNIQUE LEARNING OPPORTUNITIES

Please provide details of how the fellowship will protect/prioritise the unique learning requirements of the fellow (marks):

This fellowship is designed to train outstanding Breast and Endocrine Surgeons in the interdisciplinary management of breast and endocrine disease, with a clinical/surgical component focused on breast and endocrine surgery (12 months), discipline-specific rotations (6 months) and requirements for research. Each of the trainers are internationally trained with experience in fellowship training and sit at the cutting edge of breast cancer care in Ireland. They are leaders in teaching and research and are actively involved in the development of the subspeciality of breast surgery within the RCSI.

The training centre and curriculum is in line with the recommendations of the European Union of Medical Specialists Section of Surgery and European Board of Surgery (<https://www.uemssurg.org/divisions>) and also satisfies the recommendations of the British Association of Endocrine and Thyroid Surgeons (BAETS) and Association of Breast Surgeons (ABS) in relation to specialist/fellowship training in Endocrine, Breast and Oncoplastic surgery.

The curriculum, outlined below, will be structured to provide the fellow with graded independence as they progress through the 12/24 months, functioning with increasing independence and increasing responsibility for staffing operative cases, participating in multidisciplinary clinics, trainee and medical student education and clinical research.

The following curriculum is intended to provide the fellow with a sophisticated, in-depth knowledge of the diagnosis and treatment of patients with breast and endocrine disease. It will be evaluated annually by the fellow and the program director for relevance and currency.

DETAILS OF THE CLINICAL COMPONENT

Please provide full details of the clinical components of this post. See Section 1.4 on the Criteria and Standards document.

The fellow will have the opportunity to work with all 3 surgeons in both the symptomatic and screening breast cancer services over the 12 month clinical period of the fellowship. This will include evaluation of patients at triple assessment and breast cancer review clinics, and management of patients with benign and malignant breast disease. The fellow will be expected to thoroughly assess patients and formulate recommendations for treatment, and if appropriate plan for operation. The fellow will then participate in the pre-operative evaluation, surgery (as operator or first assistant) and immediate post-operative care of these patients.

During the course of the fellowship, the fellow should achieve specific knowledge, skills and competence in the following:

- Evaluate and manage common benign and malignant breast conditions.
- Assess the indications and contraindications for, and demonstrate experience in the performance and interpretation of the results of common procedures, including but not limited to cyst aspiration, fine needle aspiration, percutaneous core biopsy with and without image guidance, punch biopsy of skin.
- ***Breast cancer: incidence, aetiology and risk factors***
 - Evaluate breast cancer risk in an individual woman
 - Counsel for breast cancer risk and how to decrease the risk by lifestyle changes
 - Counsel moderate and high risk women about management options
 - Conduct risk reducing breast surgery, surveillance and chemoprevention
 - Counsel high risk patients about their risk of other malignancies (eg. ovarian cancer)
 - Counsel for risk and management of borderline and high risk lesions
 - Conservative and surgical management of borderline and high risk lesions
- ***Breast cancer: staging, biology, and prognosis***
 - Counsel for prognostic and predictive factors
 - Counsel for preoperative and postoperative staging by imaging including indications, and limitations.
 - Counsel for surgical staging of axilla: advantages, sensitivity, methods, associated morbidity
 - Plan and perform surgical staging and treatment of breast cancer in the context of multidisciplinary treatment
- ***Surgical Anatomy of Breast & Axilla***
 - Plan surgical treatment with excellent knowledge of surgical anatomy of the breast and axilla to minimize the risk of surgical complications: for example nerve damage or skin envelope necrosis

- Perform mastectomy avoiding skin envelope necrosis or leaving excess breast tissue behind - Perform sentinel node biopsy minimize false negative findings without damage to the intercostobrachial nerves
- Perform axillary lymph node dissection without leaving residual disease without damage to long thoracic nerve, pectoral nerve and vessels, thoracodorsal nerve and vessels and axillary plexus

- ***Surgical treatment of invasive and non-invasive breast cancer***

- ***A. Breast conservation***

- Evaluate feasibility of breast conservation in individual patients, including those who have received neoadjuvant treatment: risk of local recurrences, survival, aesthetic outcome, feasibility for radiotherapy
 - Counsel for breast conservation: feasibility, possibility of second surgeries, aesthetic outcome, symmetry procedures, local recurrences, survival
 - Perform wide local excision with sufficient margins, but without removing healthy tissue in excess- both for palpable and nonpalpable tumours
 - Perform level I and level II oncoplastic resections

- ***B. Mastectomy and total breast reconstruction***

- Evaluate feasibility of skin or nipple-areola complex sparing mastectomy and different reconstructive methods in individual patients
- Counsel for advantages and disadvantages of mastectomy over breast conservation
- Counselling for breast reconstruction: feasibility, methods and complications and expected aesthetic outcome
- Counselling for breast reconstruction: radiotherapy
- Perform non-skin paring, skin-sparing and nipple-areola complex sparing mastectomies
- Perform implant-based +/-pedicled flap immediate breast reconstruction

- ***C. Axillary surgery***

- Evaluate the need and the method of axillary surgery
- Counsel for the aim and need of axillary staging
- Counsel for sentinel node biopsy: what means, how this is performed, the sensitivity, axillary recurrences after negative sentinel node biopsy, morbidity
- Counsel for: positive sentinel node: treatment options, their advantages and disadvantages
- Counsel for morbidity after axillary lymph node dissection
- Perform sentinel lymph node biopsy
- Perform axillary lymph node dissection

- ***D. Treatment of local and regional recurrences after breast cancer surgery***

- Plan treatment
- Counsel: surgical treatment, radiotherapy, systemic therapy
- Perform surgery for local and regional recurrences. (Reconstructive methods after

extensive surgery, for extensive local recurrence after mastectomy may be performed in collaboration with plastic surgeon

E. Treatment of locally advanced and disseminated (stage IV) breast cancer

- Evaluate and plan treatment for locally advanced breast cancer evaluation
- Counsel patient with locally advanced breast cancer
- Counsel patient with disseminated breast cancer regarding the role of palliative surgery and the elective removal of the primary tumour (mastectomy, wide local excision)

- **Breast cancer in young women**

- Counsel for prognosis and treatment modalities
- Evaluate and counsel the need for genetic counselling
- Counsel for preserving fertility, pregnancy and contraception

- **Breast cancer in elderly**

- Counsel for treatment modalities and prognosis
- Tailor surgery according to co-morbidities and patient preference

- **Male breast cancer**

- Counsel for treatment modalities and prognosis
- Evaluate and counsel the need for genetic counselling

- **Adjuvant and neoadjuvant treatment in breast cancer**

- Counsel for indications and contraindications, influence on local and regional recurrences and survival
- Counsel for common side effects and their management

- **The role of Multidisciplinary Team meeting in breast cancer**

- Work as an effective member of the MDT

Endocrine Surgery

The endocrine surgery component of this fellowship will provide specialist training in Endocrine Surgery at a level III standard. The fellow will have the opportunity to work with two surgeons who perform a high volume of endocrine surgery as a significant component of their practice. This will encompass training in thyroid, parathyroid and adrenal surgery including:

- development of a clear understanding and working knowledge on the management of benign and malignant endocrine disease
- development of an understanding of the principles of endocrine investigation (including history, clinical examination and biochemical, radiological, isotopic, cytological and histological investigations and the current limitations of each.
- **Thyroid Disease**
 - Clinical presentation and workup of surgically managed thyroid disease including solitary thyroid nodule, goitre, hyperthyroidism, thyroiditis, well differentiated thyroid cancer, Medullary thyroid cancer, undifferentiated thyroid cancer.
 - Classification of thyroid tumors, FNA & current limitations, TNM staging
 - Genetics of hereditary thyroid malignancies & implications for management

- Pre-operative preparation- medical therapy of hyperthyroidism, laryngoscopy
 - Surgical Indications & alternative medical or radioisotope therapies
 - Operative Techniques: thyroid lobectomy, total thyroidectomy, lymphadenectomy (central/lateral), techniques for preservation of the recurrent laryngeal nerve/external branch of the superior laryngeal nerve and parathyroid function
 - Management of complications (recurrent laryngeal nerve palsy, post-operative hypoparathyroidism, post-operative haemorrhage)
 - Surgical approaches for retrosternal goitre
 - Minimally invasive surgical techniques
 - Management and operative strategies for recurrent disease.
- **Parathyroid Disease**
 - Understanding of the metabolism of calcium, magnesium and of phosphate. Activity of PTH on kidney, gut and bone. D Vitamins and its function.
 - Understanding of embryological development and anatomy of parathyroid glands (including ectopic locations)
 - Biochemical work-up of suspected primary hyperparathyroidism (pHPT)
 - Genetics of familial forms of (pHPT)
 - Indications for surgery in primary and tertiary HPT
 - Workup of recurrent HPT
 - Radiological investigations including nuclear medicine
 - Perioperative management including hypercalcaemic crisis, vitamin D replacement, post-operative supplementation
 - Operative techniques: minimally invasive focused and open/bilateral exploration; management of parathyroid carcinoma, and operative strategy for recurrent HPT
 - Principles of intraoperative PTH monitoring and interpretation of its results, role of frozen section.
 - Post operative complications and management, including hypocalcaemia & hungry bone syndrome
 - **Adrenal Disease**
 - Understanding of physiology and pathophysiology of adrenal cortex & medulla
 - Classification of adrenal tumours
 - Classification of adrenocortical carcinoma
 - Genetics of familial adrenal disease (MEN1, MEN2, VHL, SDHB, NF1)
 - Workup & management of adrenal incidentalomas including tests of adrenal function and adrenal responsiveness, diagnostic imaging, specific radionuclide imaging, adrenal venous sampling
 - Peri-operative management including pre-operative preparation of patients with hyperaldosteronism or pheochromocytoma and perioperative steroid management in patients with hypercortisolism
 - Operative techniques including retroperitoneoscopic/laparoscopic adrenalectomy and open adrenalectomy; concepts of subtotal adrenalectomy, bilateral adrenalectomy
 - Post-operative management and complications including adrenal insufficiency

Multidisciplinary/Subspecialty Component

The development of a well-trained surgical specialist in the care of benign or malignant breast or endocrine disease mandates an interdisciplinary approach. The Breast/Endocrine Service at Galway University Hospital runs a number of Multidisciplinary outpatient clinics where the fellow will review patients with the other subspecialists involved in their care.

These clinics include:

- Breast reconstruction clinic: combined clinic with breast and plastic surgeons
- Thyroid Triple Assessment clinic: combined clinic with endocrine surgeon, radiologist and pathologist
- Joint Adrenal clinic: combined clinic with endocrine surgeon and endocrinologist

The fellowship will provide the fellow with significant multidisciplinary training with the opportunity to spend the equivalent of 1 month in associated disciplines. This time will provide the fellow with appropriate knowledge and experience in these fields to take a leadership role in the multidisciplinary team. The fellow will have the opportunity to spend dedicated time in the following specialties where faculty members from various disciplines have outlined educational goals of the discipline, with specific learning objectives:

Radiology/Imaging

The fellow may spend the equivalent of 1 month participating in the activities of specialised breast and endocrine imaging which is relevant to their surgical practice.

The fellow will gain experience in reading and interpreting screening mammograms, with an additional focus on diagnostic mammograms. The fellow will have the opportunity to assist with subsequent imaging including breast ultrasound, stereotactic and ultrasound guided core biopsy and vacuum assisted biopsy under the supervision and direction of the breast radiologist. Indications, benefits and limitations of the various imaging modalities will be emphasized.

The fellow will also gain in depth knowledge about the role and utility of breast MRI, including a familiarity with the indications, limitations, specificity and sensitivity of breast MRI. The fellow will be expected to develop basic skills in the assessment of MRI results and be able to recommend appropriate follow-up studies or procedures.

The fellow will also obtain basic knowledge in the technique and physics of nuclear medicine as they pertain to patients with breast cancer. For sentinel lymph node biopsy, they will develop knowledge in the isotopes used, dosage, injection techniques and potential complications. They will also learn about the indications, interpretation and limitations of FDG-PET scanning for breast cancer.

The fellow will spend time with one of two dedicated radiologists who perform thyroid and parathyroid ultrasound and nuclear imaging at GUH. This will allow the fellow to understand the role and apply the appropriate utilisation of the following imaging and diagnostic studies in the surgical management of endocrine surgical disease:

Ultrasound – the fellow will understand the role and importance of surgeon-performed ultrasound and develop an ability to identify normal structures visualized during ultrasound of the head and neck, and be able to identify thyroid nodules, parathyroid adenomas and adenopathy. They will also be able to utilise ultrasound to identify which features of a thyroid nodule on ultrasound are suspicious for malignancy and perform a fine needle aspiration of the thyroid. This training will be facilitated by the radiologist at the multidisciplinary thyroid and parathyroid “triple assessment” clinics which are staffed by both endocrine surgeon and radiologist.

The fellow will also gain experience in the indications and interpretations of CT, MRI and PET scan for thyroid, parathyroid and adrenal disease.

Additionally, they will have the opportunity to spend time in nuclear medicine focusing on the role of scintigraphy in the investigation of endocrine surgical disease, including meta-iodo benzylguanane [MIBG], sestamibi and Octreotide

scanning. The interventional radiology department at GUH also provide a selective venous sampling service for lateralisation of both parathyroid and adrenal disease, which the fellow will be expected to attend and participate in.

Intraoperative tumor localization is an important surgical adjunct in endocrine surgical disease and the fellow will be trained in intraoperative utilisation of the gamma probe and intra-op ultrasound to identify pathologic glands.

Fellows will be encouraged to gain basic and advanced training in breast and thyroid ultrasound through completion of courses offered by the Association of Breast Surgeons, the British Association of Endocrine and Thyroid Surgeons and the European Society of Endocrine Surgeons. These courses provide both didactic and practical education on the basic physics of ultrasound and allow the fellow to train in the clinical application of breast and thyroid ultrasound in surgical practice.

Clinical Genetics/High-Risk Programs:

The symptomatic breast unit at GUH runs a weekly family history breast clinic in addition to a monthly high risk clinic where patients are seen by a genetic counsellor. The fellow will have the opportunity to attend these clinics and gain experience in the clinical evaluation, risk assessment and management of patients with a high risk of developing breast cancer, including those with known high risk mutations. The fellow will develop expertise in the methods of evaluating high risk women and the intricacies of counselling these patients in relation to their management options, including surveillance, chemoprevention and prophylactic surgery. For patients considering prophylactic breast surgery, the clinic is also attended by both oncoplastic and plastic surgeons who discuss reconstructive options with the patients. The fellow will thus spend time gaining clinical and operative experience in the various methods of breast reconstruction for this cohort of complex patients.

The fellow will also have the opportunity to attend thyroid, parathyroid and adrenal clinics with the medical endocrinologists. At these clinics they will have the opportunity to interact with patients and families with rare hereditary endocrinopathies, including the multiple endocrine neoplasia syndromes.

This experience will allow the fellow to develop a sophisticated understanding of the role of genetic counselling, appropriate indications for the recommendation of genetic testing, ethical implications, basic interpretation of genetic testing results and subsequent recommendations.

Pathology

The fellow will have the opportunity to gain experience in breast and endocrine pathology. This will be facilitated by the fellow selecting specific and appropriate surgical cases in which he or she has been involved in the operation/excision and follow the processing and interpretation of the specimen pathology. This experience should be broad and varied and will include benign, atypical and malignant breast and endocrine pathology. In the case of endocrine surgery, the fellow will also perform fine needle aspiration and interpret cytology under the direction of the pathologist.

Medical Oncology

The fellow will have the opportunity to spend time with the medical oncologists and the endocrinologist specialising in thyroid cancer management learning about the evaluation and management of patients with breast and endocrine malignancy. Training will focus on the treatment of the patient with newly diagnosed malignancy including those who are referred for neoadjuvant as well as adjuvant systemic therapy. The fellow will learn the current recommended systemic therapy protocols, alternative regimens, expected outcomes and sequelae. There will be an emphasis on the role of molecular diagnostics in selecting patients for most appropriate therapy and enrolment in clinical trials.

At GUH radioactive iodine therapy (RAI) for thyroid cancer is administered by the specialist endocrinologist who runs a monthly dedicated thyroid cancer clinic. The fellow will attend this clinic and learn about the current recommended protocols and indications for RAI.

Radiation Oncology

Radiation oncology facilities for the West of Ireland are located at GUH and a state-of-the-art radiation oncology facility is currently under construction on the hospital site as part of the National Programme for Radiation Oncology. The fellow will have the opportunity to follow patients diagnosed with breast cancer through the radiation therapy treatment. This will include attendance at the initial evaluation, subsequent simulation and the patient's weekly evaluation by the radiation oncology consultant. An understanding of the evolving indications for adjuvant radiotherapy following breast conservation and mastectomy will be developed in addition to experience in the practical and technical aspects of radiotherapy delivery.

INDICATIVE CASE NUMBERS TO BE COMPLETED DURING THE FELLOWSHIP*

PROCEDURE NAME**	No. As Primary Operator	No. As Secondary Operator
Wide local excision	200	100
Sentinel Lymph Node Biopsy	200	150
Mastectomy	75	75
Axillary Clearance	50	50
Implant Based Reconstruction***	50	50
DIEP Reconstruction	5	25
Breast Reduction Surgery	50	50
Breast Augmentation/Exchange Surgery	25	50
Acute breast surgery	25	25
Total Thyroidectomy	20	50
Thyroid Lobectomy	30	50
Adrenalectomy	5	15-20
Parathyroidectomy		

*Numbers based on a 12-month clinical fellowship

**There is no general surgery commitment during the fellowship

***Including Tissue expander and primary implant reconstruction with mesh operations

ASSESSMENT

Please include details of the assessment framework and methods that will be used to assess the fellow's satisfactory performance in training, including how this will be recorded and fed back to the fellow.

The fellow will meet with the program director at the commencement of fellowship to define clinical and academic aspirations and requirements in addition to a work-plan and schedule that is focused on optimising the fellow's exposure and training in their areas of priority. The unique learning requirements of the fellow will be addressed at this meeting, and

their selection of subspecialty training opportunities from what the fellowship offers will reflect this. Close mentorship from the programme director and consultant trainer will ensure that these learning requirements are protected throughout the duration of the fellowship. Subsequently they will meet on a quarterly basis to assess whether or not personal goals and objectives are being met and to review the evaluations from the previous quarter. If undertaking research, the fellow will meet with the project mentor 2 weekly to go over the research plan, new ideas and any difficulties. These meetings will be one-on-one.

AUDIT & QUALITY IMPROVEMENT OPPORTUNITIES

Please outline any quality improvement opportunities that will be available to the fellow when undertaking the fellowship. (marks)

All fellows are required to attend the weekly conferences and meetings outlined below. The fellow will be asked to participate, prepare and lead these conferences or schedules as requested by the program director or appropriate faculty.

- Endocrine MDM (Mondays 8am)
- Breast Screening MDM (Mondays 12.30pm)
- Surgical Case Conference (Tuesday 8am)
- Surgical Morbidity & Mortality Conference (monthly Tues 8am)
- Surgical Journal Club (Wednesday 7.30am)
- Adrenal/Hypertension MDM (Wednesday 1.30pm)
- Breast Symptomatic MDM (Thursday 8am)
- Research Meeting (Thursday 3.30pm)
- Hospital Grand Rounds Friday 1pm
- Schwarz Rounds (Monthly, Thursday 1pm)

As part of these activities, fellows would be expected to engage in improvement projects.

TEACHING COMMITMENTS

See Section 2.1.3 on the Criteria and Standards document.

The fellowship is linked with the National University of Ireland, Galway, Division of Surgery through the Professors of surgery and therefore the fellow will be expected to work closely with the university tutors and year leads to provides teaching to undergraduate and postgraduate students. This is a unique opportunity for fellows to enhance their teaching skills in one of the most dynamic and progressive universities in Ireland.

PROPOSED RESEARCH PROJECT

See Section 1.5 and 2.1.3, on the Criteria and Standards document.(marks)

Research is an essential component of this fellowship and is seen as critical to the fellow achieving a leadership role in the field of breast and endocrine surgery. The fellow is expected to actively participate in scholarly activity in the form of design and completion of a clinical research project which can be laboratory based, translational or clinical. The Discipline

of Surgery at NUI Galway (<http://www.nuigalway.ie/medicine-nursing-and-health-sciences/medicine/disciplines/surgery/>) has a track record in high impact basic science, clinical and translational research pertaining to breast and endocrine pathology, and provides state-of-the art resources to facilitate this research.

NUIG has named BioMedical Science as a research priority and the College of Medicine, Nursing & Health Sciences has specifically identified Cancer Biology, Therapeutics and Regenerative Medicine as areas of strategic priority. The research programme in the Discipline of Surgery is housed in the Lambe Institute for Translational Research at NUIG which is co-located with University Hospital Galway and the Health Research Board Clinical Research Facility (HRB-CRF). The Lambe Institute is a purpose build translational research facility, enabled for near patient research, access to clinical trials and is the research arm of the School of Medicine, strengthening the link between hospital clinical activity and the research mission of NUI Galway. This facility is home to the following research groups:

- Breast Cancer Research Laboratory
- Translational Medical Device Lab
- Cardiovascular Research Centre
- Cancer & Inflammatory Disease Research Groups from Disciplines of Surgery, Pathology and Clinical Pharmacology & Therapeutics.

These groups collaborate closely with each other and with other researchers in bioengineering and biomedical science across the university including CURAM and the Regenerative Medicine Institute (REMEDI).

The physical infrastructure at the Lambe Institute includes the “dry lab” desk spaces and “wet lab” experimental areas with specialised lab rooms for Cell Culture, Radiochemistry, Biobank Freezer Storage, Microscopy (housing the Slide Scanning Microscope core facility), Genomics (DNA) and Histology.

The Discipline of Surgery research group have developed a Cancer Biobank which is housed in the research facility and is a vital resource for researchers enabling long term research projects with comprehensive disease follow up.

The fellow will have the opportunity to join the research group within the Discipline of Surgery & Lambe Institute to undertake research in line with their clinical area of interest. At the beginning of the fellowship year, the fellow will meet with the Program Director and undertake a self-assessment of previous experience and future aspiration in relation to research.

Existing Research themes/projects within the discipline with which the Fellow can engage include:

- Personalised Medicine: Cancer Genetics/Risk Assessment.
- Biomarker detection & prediction of response to Therapeutics
- Cellular Interactions within the tumour microenvironment
- Breast Regeneration/ Adipose Derived Stem Cells in Tissue Engineering
- Novel Breast Cancer Imaging Techniques
- Novel therapies using microwave and radiofrequency ablation
- Clinical and Translational Trials

The co-location of the surgical research group with the Translational Medical Device Laboratory (<https://www.tmdl.ie/team>) in the Lambe Institute allows for close collaboration on the development of new low cost and non-invasive medical devices. This research is driven by ongoing clinical engagement and close collaboration with

industry. Through such partnership, the medical devices developed are finely tuned to address unmet clinical needs and ideally placed for subsequent commercialization.

This progressive and collaborative research environment is ideally placed to support a fellow wishing to engage in high impact research which will lead to significant academic output. The research undertaken at the Lambe Institute undoubtedly has the potential to deliver high value intellectual property. With the mentorship and guidance of the consultant trainers on this fellowship, who are themselves active clinician scientists, the fellow will be supported and encouraged to actively engage with the research opportunities available. Additionally the fellow will have significant opportunity to participate in clinical trial recruitment and development as trials are ongoing in almost every specialty and a number of trials are facilitated and run through the HRB-CRF Galway.

If the fellow wishes to undertake formal research training, there are a range of relevant taught programmes available at NUIG including the following:

- Masters in Surgery (MCh) (<https://www.nuigalway.ie/courses/taught-postgraduate-courses/masters-surgery.html>)
- Masters in Cancer Research (MSc) (<https://www.nuigalway.ie/courses/taught-postgraduate-courses/masters-surgery.html>)
- Masters in Clinical Research (MSc) (<https://www.nuigalway.ie/courses/taught-postgraduate-courses/clinical-research.html>)
- Masters in Regenerative Medicine (MSc) (<https://www.nuigalway.ie/courses/taught-postgraduate-courses/regenerative-medicine.html>)

AVAILABLE INFRASTRUCTURE AND SUPPORT SERVICES

See Section 2.1.3, 2.1.7, 2.3.1 on the Criteria and Standards document.

The fellowship will be supported through the combined offices of BreastCheck, Western unit and Division of Surgery, NUI Galway. The fellow will be under the exclusive supervision of the 3 trainers and will have no commitment to any other service within Saolta, NUIG or BreastCheck.

The fellow will be supported in their clinical duties by junior staff including interns and SHOs, in their research by the administration and research staff in the Division of Surgery and in their teaching commitment by the tutors.

The fellow will have protected academic and personal leave time and will be encouraged to explore relevant avenues of learning of their own interest.

OUTLINE HOW THIS POST CSCST Fellowship would provide a quality experience, protected training time & less focus on service delivery commitment (marks)

There are a number of components to this unique fellowship opportunity which will be of significant value to the health service by virtue of training an individual who is expected to take a leadership role in Breast and Endocrine Surgery and Surgical Academia.

The fellow will have the opportunity to train in the highest volume breast cancer centre in the country with exposure to specialist training in all aspects of breast cancer management, including advanced technical training in oncoplastic surgery. Traditionally, Irish Breast Surgeons have felt the need to travel overseas for this standard of training, however the centralisation of breast cancer services in Ireland, in addition to the high quality of internationally trained consultant faculty at GUH and NUIG combine to provide an environment where the quality and opportunity for training in breast surgery is likely to exceed that which has been available at international fellowships. We believe that this is a strength in Irish surgery which should be promoted to our trainees.

The field of Endocrine Surgery is less developed in Ireland than other surgical subspecialties, and indeed is less developed as a specialty than it is in mainland Europe or the US. This is a subspecialty which is rapidly growing with respect to scientific discovery and surgical technology at an international level. This surgical subspecialty encompasses diverse and complex disease states that require specialist operative management and the peri-operative management of endocrinopathies is complex. These patients require multidisciplinary specialist management, with the Endocrine Surgeon functioning as a leader in this setting, and there is a recognised need for advanced post-graduate training in this discipline to ensure that patients within the Irish health service are receiving care that is in line with international best practice, particularly considering the fact that the incidence of endocrine malignancy such as thyroid cancer, for which surgery remains the mainstay of treatment, is increasing in Ireland presenting an increasing workload. The Endocrine Surgery service at GUH is unique in that we have drawn on our own international experience to establish a truly multidisciplinary unit to provide specialist care for patients with complex endocrine disease and endocrine malignancy. There is close collaboration between colleagues in Endocrinology, Renal Medicine, ENT surgery and Anaesthesia which has been prioritised to ensure that this unit can provide tertiary level care. Furthermore, close links with international specialist centres such as that of Professor Martin Walz in Essen will provide the opportunity for international training in specific techniques if desired by the fellow.

The opportunities for academic and research training presented by this fellowship are unparalleled. The outstanding research environment together with the excellent laboratory and scientific facilities at the purpose built translational research facility, in addition to the collaborative opportunities within the institution is the ideal situation for an ambitious and high quality fellow to develop a research project or programme that may continue beyond the term of the fellowship, ultimately generating novel intellectual property and data to assist in the initiation of translational and clinical research that will improve future patient care.

EVALUATION AND FEEDBACK

How do you plan to provide relevant feedback and evaluation of the Fellowship Post to the College?

Trainer and Fellow feedback will be in accordance with the College's requirements to accredit this fellowship. The trainers are all registered RCSI trainers and well experienced in providing feedback on trainees.

Signature of the Clinical Lead/Assigned Supervisor (electronic signature is acceptable)

Karl Sweeney (electronic signature)
