

QUALITY ENHANCEMENT UNIT



*QUALITY REVIEW
PEER REVIEW PANEL REPORT
ASSERT CENTRE*

Dates: 19-21 January 2021

“By embedding a strong quality-enhancement ethos, we will use our quality processes to ensure a culture and experience of best practice in the delivery of our academic mission, demonstrating our commitment to continuous evolution and improvement”

(UCC's Strategic Plan 2017 – 2022, p.23)

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List of Panel Members

Refer to Appendix A for detailed panel profiles.

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Part 1 - Overall Analysis

1.1 Context

Application of Science to Simulation in Education, Research and *Technology* in medicine Centre, known by its acronym, ASSERT Centre, is one of the College of Medicine and Health's RICU centres and is hosted in a new two-thousand-square-metre building, located within the Brookfield Health Sciences Campus, a few minutes away from the main University campus. The acronym, which originally stood for Application of Science to Simulation, Education, Research and *Training*, was changed in 2020, as part of an effort to re-ignite its emphasis on the technology and simulation-based synergy of education, research and innovation through the triangulation of academics, businesses/industry and medical clinicians.

Officially opened in 2015 and specifically established for pursuing technology-led learning (TEL henceforth), research and innovation, it has a state-of-the-art simulation facility, equipped with a

high-tech surgical skills lab, a dry skills lab, two high fidelity simulation suites and one endovascular suite, a mock medical ward and, finally, a conference room equipped with advanced audio-visual technologies. Apart from the advanced high-fidelity simulation facility and equipment, one of its selling points is the licenced use of frozen cadaveric specimens for which it is unique in Ireland.

Since its opening, ASSERT has undergone frequent leadership and staffing changeovers, resulting in significant shifts in its core strategic orientation and activities, from an initial prioritisation of its research and innovation domain (early years) to a greater emphasis since 2018 on the delivery of training and education outputs for public and private, industry-based sectors. The post of Director of Research, initially funded for a five-year period, was discontinued in 2018 and, then, absorbed into the role of Director of Education and Research. Additionally, key positions are currently vacant (i.e. Business Manager and Technical Officer), as well as the role of Simulation Nurse.

The Centre's activities are focused on two domains: education & training and research & innovation. In terms of education and training, ASSERT provides single TEL surgical/simulation and virtual reality-based experiential education and training sessions to the University's fifth year medical students (average of 24 UG sessions per year) and medical interns (average of 14 PG sessions per year). It also provides a range of customised courses (including UCC CDPs), trainings and workshops to public and private healthcare professionals, Med-Tech engineers, charities and other clients, upon request. Since the ASSERT Centre does not run its own UG/PG programmes, it does not provide numbers of enrolled students or have a staff to student ratio (SSR).

With regards to its innovation and research domain, it mostly supports industry partners' training for their engineers and trialling, evaluation and optimisation of new medical devices and equipment. It does this by providing opportunities for product testing and enhancement via strategic partnerships with medical specialists, key Med-Tech businesses and industry. ASSERT's collaborative research activities resumed in 2020, with some successful inter- and transdisciplinary innovative and technology-based research projects, such as the CREWS Covid-19 response pilot project and the SAMANAGH project (see commendations, p. 12).

Despite this, the Centre's high-fidelity simulation facility appears to have much greater capacity and potential for high-end, cutting-edge innovative activities in both education and training and research and innovation than is evidenced by its current outputs. Similarly, there appears to be potential for increasing and reviving collaborations with other Schools and units within the College of Medicine and Health (e.g. School of Medicine, School of Clinical Therapies, School of Nursing and Midwifery, School of Dentistry, School of Public Health), as well as with the College of Science, Engineering and Food Science (e.g., the School of Computer Science) and beyond, for example with Cork University Hospital, the Health Service Executive and the South and South West Hospital Group (SSWHG).

With regards to its community engagement, ASSERT has been recently involved in a few community engagement activities, in partnership with the Irish Health Foundation and An Garda Síochána, as well as being engaged with UCC student societies, such as the Medical Society and the Medical Research and Tech Society through a range of student-led training and research collaborations.

According to the Self-Evaluation Report, in the A.Y. 2019/20 the Centre had eight staff members (four Full-Time and four Part-Time) for a total of 5.14 FTE, including its Director (0.20 FTE) and the Director of Research and Education (1 FTE), who are on secondment from the School of Medicine and Health. The remaining staff are divided into professional services (1.54 FTE), technical (2.2 FTE) and clinical (0.2 FTE – expired in Feb 2020) categories. ASSERT also relies on the support of the School of Medicine, especially the Department of Anatomy, and part-time (hourly occasional) staff for carrying out its educational and training activities.

The Centre was initially set up with an operational business model, according to which its costs would be covered by the income generated through its education and training and research and innovation activities. However, ASSERT has not generated the substantial profit that had been projected at its outset, whereas its operational and facility maintenance and upgrading costs are substantial and constantly increasing. Currently, its expenditure for core staffing and infrastructural maintenance and upgrade is financially subsidised by the College of Medicine and Health. This situation has been exacerbated by the break-out of the Covid-19 pandemic in March 2020, when ASSERT suspended all its *in-situ* training and services with a loss of a significant portion of its projected income for the year.

1.2 Review Methodology and Site Visit (Covid19-emergency adaptation)

Due to the onset of the Covid-19 pandemic, the original Review site visit, which had been scheduled to take place in the academic year 2019/20, had to be deferred. To enable completion of the Quality Review under the prevailing public health restrictions a model for conducting site visits virtually was developed, to ensure continuity in the operation and delivery of quality review and enhancement activities. Development of the revised model was informed by emerging practices for quality review nationally and internationally under Covid-19 arrangements. Core principles which guided the redesign were the need to:

- Achieve completion of the Review process whilst recognising the significant impact of Covid-19 adaptations for teaching, learning and assessment for academic units;
- Uphold the overall integrity of the Review process and maintain comparability by ensuring that the objectives for Review could be achieved under adapted circumstances;
- Coordinate the sequence of the site visit to ensure coherence and retain all the relevant meetings with staff, students and stakeholders;
- Manage the process of Review Team establishment and working ethos.

The Self-Evaluation Report and Case Study of Good Practice submitted for the Quality Review process was supplemented by a short Covid-19 SER Addendum. The purpose of the Addendum was to outline and reflect on the unit's response to the Covid-19 pandemic, including challenges, learnings and unforeseen opportunities faced by the Centre, as a result of the sudden adaptation to remote teaching, learning and assessment. This addition served to make the context of the unit as current as possible for the Review Panel.

In place of the usual physical site visit at the University, the virtual visit was configured to take place remotely for three days during one week in January 2021. Microsoft Teams was used as the virtual platform to enable meetings of the Peer Review Panel with the School. The timeframe of the site visit retained all the relevant meetings with staff, students and stakeholders and so it ensured that the objectives of quality review would be fulfilled. The sequencing of meetings was organised so as to ensure coherence and progression in the conduct of the site visit, from the strategic orientation meetings through to the detailed discussions with staff, students, internal and external stakeholders.

The timetable was comprehensive and enabled consultation with key stakeholders, including the Head of College, senior management of the University and other key internal stakeholders (School of Medicine and Health and Tyndall Institute), undergraduate medical students, intern trainees and local, national and international external stakeholders. There was engagement with the Director of the Centre, the Director of Education and Research, course organisers and facilitators, key industry partners, staff from the School and ASSERT's Advisory Board's members. The timetable for the remote site visit is included in Appendix B.

To support the establishment of the Review Panel and facilitate effective engagement throughout the site visit, additional guidance and support was provided by staff of the Quality Enhancement Unit. This

included technical support, as well as briefing and advisory support prior to and throughout the site visit.

The Panel brought together national and international peer reviewers. Internal reviewers provided knowledge of institutional and organisational structures within UCC, with the external Panel members contributing their peer expertise in the area of technology- and simulation-led healthcare innovation, education, research and clinical practice. All review panels at UCC also include a student representative as a full panel member, who brought valuable insights and perspectives on student issues. Despite the remote modalities of the site visit, which prevented the Panel from directly viewing the Centre's high-end simulation facilities, the Panel reached positive synergy and engaged constructively with the Centre staff and participants in the site visit meetings throughout. At the end of the site visit, the Panel presented its initial findings, both commendations and recommendations, to the School.

Review coordination was provided throughout by a Quality Enhancement Advisor from the Quality Enhancement Unit (QEU) to facilitate the review process and to support the Peer Review Panel in formulating and agreeing the final Panel's Report. The Report was compiled collaboratively with the entire Panel contributing to the production of the final Report.

1.3 Objectives of the Quality Review

The overarching objectives of academic quality review at UCC are to enable Schools, through evidence-based self-evaluation, to:

1. Reflect on and promote the strategic enhancement of their academic activities to ensure an outstanding learning experience for all students (enhancement dimension);
2. Evaluate the effectiveness of their processes for assuring academic standards and provision, in line with the University's academic mission and strategy (assurance dimension).

Thus, peer review goes beyond quality assurance to also embrace continuous quality enhancement. The Peer Review Panel's report reflects these objectives in the recommendations and commendations outlined to support the ASSERT Centre in reviewing its strategic priorities, reconfiguring its governance and operations and optimising its activities, in the pursuit of the fulfilment of its potential and raising of its profile and reputation, by contributing in significant ways to better healthcare outcomes for patients in Ireland and in the world through its research, innovation and research-led teaching and training.

1.4 Overall Analysis of Self-Evaluation Process

1.4.1 Self-Evaluation Report (SER)

Since ASSERT's establishment, the self-evaluation process provided the first opportunity for the Centre to undertake a reflective appraisal of its developmental path, achievements and areas for consideration. This was timely and welcome, considering the significant changeovers in leadership and strategic direction that the Unit underwent over a relatively short period of time. These circumstances and challenges, which were partly reflected in the Centre's Self-Evaluation Report, were further explored with the Panel during the virtual Site Visit. It was evident to the Panel that the Centre undertook an open self-evaluation exercise and embraced a quality enhancement ethos throughout, identifying a number of priorities going forward. A coordinating committee was established, consisting of the Director of Education and Research and a Professional Services staff member, to facilitate the self-evaluation process and to coordinate the drafting of the Self-Evaluation Report (SER). The Centre used the opportunity for self-evaluation to engage in a review of its activities through consultation with staff and benchmarking exercises, while also drawing on data from past student/trainee surveys

compiled at the end of the provided training sessions and advice provided by the Centre's Advisory Board. However, the latter do not seem to have been subsumed within the identified priorities for ASSERT.

The Centre identified priorities for strategic planning concerning its infrastructure and staffing, pursuit of external and internal funding sources (including philanthropy), as well as its key domains of education and training and research and innovation. These include: the continuing expansion, upgrading and maintenance of its simulation facilities and equipment; the appointment of key vacant roles and staff consolidation; the pursuit of accreditation with the Society for Simulation in Europe (SESAM). It also addressed an expansion of its education and training programmes in areas such as endoscopy, robotic surgery, Immersive Virtual Reality Room, Paediatric Anaesthesia and further expansion of its already established collaborations with industry partners and community engagement initiatives. A plan for the collaborative establishment of a National Simulation Centre of Ireland was also considered, together with the pursuit of triangulated healthcare research to support the design, development, trial and marketing of innovative simulation technology and disruptive healthcare solutions.

Notwithstanding the SER's openness and identification of key areas for development in the future, the inclusion of a more systematic analysis of the key risks faced by the Unit and possible solutions would have been informative. This could have been accompanied by a more specifically defined strategic vision, underpinning the consolidation and expansion of the Centre's Education & Training and Research & Innovation activities, the accomplishment of the identified priorities through the development of a time-bound and target-specific strategic plan. Similarly, the identification of concrete and actionable details for implementing the SER's recommendations would have been useful. Pragmatic consideration of both, the risks associated with maintaining a cost-intensive high-end simulation centre of this type and the substantial opportunities existing for the ASSERT Centre to pursue excellence in niche areas of healthcare simulation specialisms, would have been contextually relevant and timely.

1.4.2 SWOC

The Centre undertook a SWOC (i.e. Strengths, Weaknesses, Opportunities and Challenges) consultation with the Unit's staff. The outcomes of the workshop identified its main strengths as its staff's commitment, experience and knowledge, together with the Centre's state-of-the-art facilities and unique selling point (use of frozen cadaveric specimens), in combination with its vision, mission and values. The affiliation with UCC, especially the College of Medicine and Health, and location in Cork are also considered to be assets, as well as its many partnerships with public and private healthcare bodies and providers, and, finally, the great esteem for staff, facilities and courses expressed by external users/attendees and colleagues.

Among the identified issues for development, administrative and technical staffing sustainability (coupled with limited FT/PT faculty staff) is a priority and one, which is regarded as impacting on the delivery of the Centre's activities, consolidation and expansion. ASSERT's current business operating model within a university environment is regarded as also the main challenge for ASSERT. Other issues identified were: securing accreditation with internationally recognised bodies for simulation in healthcare training; the need for research funding by national funding bodies such as the Health Research Board or Science Foundation Ireland and other external bodies; and, finally, the need for a digital archive for its educational and training resources.

On the other hand, the SER regarded ASSERT's Cork-base as a great opportunity for becoming the main partnered training centre for the SSWHG. This group includes the Health Service Executive, Health Information and Quality Authority, Irish Medical Council, Emergency and Military Services. It

also considered its potential for establishing reciprocally beneficial synergies with other simulation centres in Ireland (e.g. RCSI, NUIG, UL). Other opportunities were identified, which relate to further expansion within the domain of education and training offerings (inclusive of UG/PG programmes), as well as innovation and research. Finally, other relevant areas for consideration were identified, such as the need for governmental approval of the Centre's training courses, together with ongoing funding issues and the emergence of competitors within the national landscape.

1.4.3 Benchmarking

The ASSERT Centre carried out a four-step approach (i.e. Plan, Do, Check and Act) to aspirational and thematic benchmarking against three similar academic centres, with the purpose of learning about new practices that could be adopted and also appraising its existing good practices. Six centres were initially selected: three for desk-based benchmarking and the other three for onsite visit. The latter were Saint Thomas House SaIL Centre, the Scottish Centre for Simulation and Clinical Human Factors and Dundee Institute for Healthcare Simulation (in the University of Dundee), whereas the identified themes were organisational structure, resources, funding sources, sustainability and training/academic outputs.

This section of the SER was mostly descriptive, including the similarities and differences - advantages and disadvantages - between ASSERT and the centres benchmarked against. However, it did not include in-depth analysis of the implications of these differences nor drew explicit comprehensive and systematic conclusions from this exercise in terms of practices to adopt and/or develop.

Nonetheless, the benchmarking seems to have produced some insights on aspects which warrant change in relation to staffing numbers, adopted funding model, accreditation and official endorsement from governmental healthcare and/or training/education bodies.

1.4.4 Developments since last review

This is the first quality review process for the ASSERT Centre since its establishment and, hence, this section does not apply.

1.5 Good Practice Case Study

The case study included in the SER, entitled 'Competitive Learning in Medical Education', was carried out as a pilot study in the academic year 2018/19. It highlighted the pedagogical benefits arising from a recently designed and implemented bespoke training in Emergency Care for medical students, which was piloted by the ASSERT faculty staff, in response to a request for support made by the Emergency Care Student Society.

More specifically, the document outlined the support the Centre provided to students in preparation for their participation to the 'SimWars Ireland Competition', an inter-university simulation-based challenge for medical students with a special interest in Emergency Medicine. ASSERT assembled a bespoke interdisciplinary training devising a range of simulated emergency care scenarios, using high-fidelity technology, facilitated by a range of healthcare and emergency professionals, in order to actively engage student participants in the resolute delivery of emergency care in each of these specific scenarios.

The curricular contents of this training included entry points to key generative topics, taught by means of TEL approaches (e.g., simulated patient scenarios and structured recorded debriefs) within a social competitive classroom learning space. This specific need-based event elicited further reflection on behalf of ASSERT's interdisciplinary faculty on the value the social competitive learning space as an innovative form of learning and teaching with many beneficial outcomes for students.

While the case study provided details of the context, motivations and reflective learning for faculty staff derived from this initiative, it did not include details on how competitive aspects were practically implemented within the sessions, the received student feedback and the actual or potential downfalls of competitive approaches.

Significantly, the discussion of the case study did not include an indication of the actual follow up from this pilot project or a consideration of how the learning could be subsumed within the overarching vision underpinning the Centre's activities. It would be relevant to gain information on potential and/or actual plans for the standardisation of both, this bespoke experiential, simulation-based competitive training in Emergency Care, and the application of a competitive pedagogical TEL approach to learning and teaching for a wide range of courses/training designed and delivered by ASSERT faculty staff for medical students and/or other clients, together with a broad consideration of how they would fit within the Centre's strategic vision and embraced pedagogical approaches.

Another example of an extra-curricular project for enhancing the student learning experience was also presented to the Panel during the site visit. It outlined undergraduate students' voluntary involvement in the *CLEAR Project*, whose acronym stands for Combining Leadership and patient Empowerment through intelligent data Access and Remote consultations. In response to the request of the Student Medical Research and Technology Society, six students, succeeding in developing research projects of concrete relevance for the CLEAR project, under the joint supervision/mentorship of both, ASSERT and the Malawi e-Health Research Centre's faculty. As a result, the uptake of this initiative subsequently increased to involve a group of twenty undergraduate medical students in 2020/21.

The Panel was positive about the ASSERT Centre's responsiveness to student societies' calls for collaboration and support, as well as about the visible and enthusiastic commitment to, and engagement in activities for, progressing global justice and providing better patient healthcare outcomes world-wide. However, it also noted that, going forward, it is paramount that the Centre's initiatives for enhancing the student learning experience are part of a broader and strategically reviewed rationale, vision and mission, so that they coherently reflect and reassert ASSERT's own distinctive identity, culture and approach, as the ASSERT's 'added value' to any activity.

1.4 Collaborative partnerships (e.g. joint programmes)

The Panel welcomed ASSERT's effective collaboration with the School of Medicine in relation to the facilitation and hosting of effective training sessions for UG medical students and PG medical interns, as well as its recent collaboration with the School of Public Health in relation to the design and delivery of the SAMANAGH training programme. ASSERT's proactive engagement with the UCC Centre for Continuing Professional Development in order to oversee the governance and certification of its CPD courses was also noted during the Panel's site visit.

However, despite the above, the Panel was of the overall view that the ASSERT Centre could play a much more crucial collaborative role, potentially reaching out to the whole University. In this sense, it noted that there is a significant untapped potential for increasing and reviving interdisciplinary collaborations around teaching, innovation and research not only with other units within the College of Medicine and Health, but also with those within the College of Science, Engineering and Food Science (especially but not exclusively the School of Computer Science), and beyond, with other Research and Innovation institutions, such as the UCC Tyndall Institute, public health services such as Cork University Hospital, the HSE and the SSWHG.

Specifically, the Panel remarked that the context of the Covid-19 pandemic, with its resulting physical restrictions and remote attendance measures, created unprecedented opportunities for ASSERT to exploit its extraordinary simulation facilities and equipment and play a central role in responding to the now urgent needs for remote innovative healthcare practice education, training and research solutions locally, regionally, nationally and internationally. The Panel concluded that ASSERT's future collaborative partnerships and trajectories in education, training, research and innovation should be carefully considered, planned and implemented as part of a reviewed, renewed and refocused strategic vision, mission and rationale for the Centre going forward (see recommendations at pp.12-13).

1.5 Tour of the Facilities

The Panel regrets it did not have a chance to conduct a physical tour of the ASSERT Centre's facilities and equipment at the Brookfield Health Sciences Complex, due to the remote format of the completed site visit. However, on the basis of its consideration of the submitted School's SER documentation, promotional video of the facilities and e-brochure, together with its consultation with the Unit's staff, students and external stakeholders during the relevant meetings, the Panel was satisfied that it is hosted in an excellent physical environment. The internal Review Panel members were also able to provide further information on the quality and range of facilities housed in the above mentioned building, one of the newest on the Western Campus and adjacent to the School of Medicine, the School of Nursing & Midwifery, the School of Clinical Therapies and the INFANT Centre.

Part 2 – Findings of the Panel

2.1 Centre's Overview

The Panel welcomed the openness and engagement with the quality review process demonstrated by the Centre staff, as well as their evident awareness of key areas for development and frank acknowledgement of the need for visionary leadership and coherent strategic planning. Staff conveyed a strong belief in the great potential of the ASSERT Centre and willingness to continue investing their energy and skills in it, despite the difficulties encountered and this was noted by the Panel.

The consistent praise and esteem expressed by a various range of key stakeholders - students, University colleagues and industry partners - for staff's professionalism, flexibility and commitment during the Unit's remote site visit did not go unnoticed. These groups reiterated their wish for a greater engagement with the ASSERT Centre and use of its resources in the future. In particular, both UG medical students and PG trainee doctors insisted on ASSERT's centrality to student education and training and stated that earlier and more regular practice-based and skill-development learning opportunities with the ASSERT Centre would be extremely valuable.

Notwithstanding this, the Panel is of the view that the Centre has now reached a critical juncture in its operations. Its achievements to date and its potential for the future need careful and thorough strategic appraisal. This appraisal will require the engagement, support and direction of the College of Medicine and Health, to frame the necessary strategic pathway for future viability and development of ASSERT. The Centre's consolidation and enhancement could be realised within the College's plan of realising an 'Innovation Corridor' for Cork, as well as within similar strategic R&D avenues.

Accordingly, the Panel strongly believes that ASSERT needs to undergo a strategic reconfiguration process to unlock its potential, aligning its education & training and/or research & innovation outputs with the cutting-edge eco-system it inhabits. In this way it could become a beacon for students, academics, clinicians and industry, significantly enhancing its profile, operations and reputation, while

also balancing out the considerable financial investment constantly required for its necessary maintenance, upgrading and expansion.

The Panel believes that a short-term Strategic Advisory Review Group would support ASSERT's Directors and the College of Medicine and Health in identifying a clear, grounded and sustainable developmental trajectory for the Centre, considering a range of essential aspects, such as the definition of its *raison d'être*, aims, objectives, remit, scope, values, mission, vision and identity; the reconfiguration of its governance structures and processes; and the formulation of a three-year strategy with an accompanying S.M.A.R.T. Business Plan and an effective communications, marketing and PR Strategy.

As part of this process, the Panel encourages ASSERT and the College of Medicine and Health to also thoroughly consider leadership requirements to drive the ASSERT Centre forward in the effective formulation and implementation of the deliverables outlined in the Centre's Business Plan. This should include working towards establishing strong and durable links with the HSE and the SSWHG, as well as enhancing the Centre's attraction of and collaboration with research-active professionals. More detailed indications in this regard are provided below in Section 2.3 that exposes the Panel's key recommendations (pp. 12-13).

The Panel is also of the view that the so reconfigured ASSERT Centre would greatly benefit from the guidance of a reconstituted Advisory Board, reflecting the newly embraced strategic direction, with clear remit and reporting lines.

An effectively refocused, reconfigured and energetically led ASSERT Centre would also be in the position to consider pursuit of the plan, indicated in the SER, to establish a National Simulation Centre of Ireland, similar in concept to the Health Innovation Hub Ireland, in collaboration with the other academic centres, having its three initial constituent campuses in Cork (UCC ASSERT), Galway (NUIG) and Dublin (RCPI and RCSI). On the other hand, with regards to its Education and Training domain, it could consider engaging fully with the University's evolving framework of credit-bearing micro-credentials and with the provision of specialized, advanced research-led teaching as ASSERT's own 'added value'.

Finally, while there seem to be high levels of informal collegiality and reciprocal esteem and respect among ASSERT staff members, the Panel noted that there is need for formally embedding staff support mechanisms and professional development opportunities within ASSERT's structures and processes.

Overall, the Panel felt that the Unit has much untapped potential to establish itself as a highly reputed, strategically oriented and coherently reconfigured, internally cohesive and dynamic centre of excellence for education and training and/or research and innovation. It could do so by building on its extraordinary simulation facilities and equipment and its professional, flexible and dedicated staff body. It could consolidate and further expand its already established partnerships with key global industry and business stakeholders and exploit the willingness of key cognate research and innovation entities/institutions to establish fruitful close collaborations with ASSERT (e.g. Tyndall Institute). Furthermore, the abundance of Med Tech manufacturing factories in the region and nationally is another advantageous factor for the Centre, together with the concurring contextual development of an 'Innovation Corridor' in Cork. Finally, the outbreak of the Covid-19 pandemic has caused the emergence of great opportunities for remote, simulated, healthcare education and training provision that the Centre could seize.

2.2 Commendations to the ASSERT Centre

In an ethos of quality enhancement, whereby good practice is identified, acknowledged and disseminated, the Peer Review Panel noted the following areas for commendation, which demonstrate the positive engagement, dedication and commitment of its staff, regardless of the identified areas for immediate consideration and development for the ASSERT Centre:

- Detailed and well-presented SER documents with good layout and evidence of reflective, open and honest engagement by the staff with the quality review process during the site visit and commitment to quality enhancement in the activities of the Centre going forward;
- State-of-the-art, high-tech healthcare simulation facility, providing a range of experiential training in healthcare education and clinical practice, highly valued by UG and PG medical students/trainees and faculty, with great potential for expansion in collaborative education, research and innovation across the University and with key external stakeholders including the HSE and the SSWHG and other research centres and institutes;
- Only Centre in Ireland licensed to use fresh frozen cadaveric specimens for its surgical-based training;
- Dedicated, collegial, flexible and accommodating core staff, enjoying great esteem by the Centre's internal and external stakeholders, industry partners, students and University colleagues;
- Broad and constantly expanding range of TEL experiential training in simulated settings, with bespoke designs adapted to clinical/business/industry/healthcare professionals' demands and needs;
- UCC Centre for Continuing Professional Development's approval of ASSERT's surgical skills courses (e.g. CDP1644 'Anatomy of Complications Workshops'; CDP1703 'Fresh Cadaveric Surgery'; CDP1704 'TaTME Course');
- Instances of involvement in the design of innovative online degree programmes, such as the currently ongoing international collaboration on a new pilot programme entitled 'Teaching Tele-Health Consultation Skills to Healthcare Professionals';
- Adaptable and agile resumption of *in situ* training delivery in full compliance with the Covid-19-related return to work guidelines for the Academic Year 2020/21;
- Recent re-launching of its research arm with some inter- and transdisciplinary collaborative projects at institutional, local, national and international level, such as the CREWS pilot Project (Covid-19 Remote Early Warning System), contributing to national Covid-19 containment efforts;
- Proactive engagement with external industry and business partners re training outputs, medical prototypes trial and validation (see SER, p.9-10);
- Instances of engagement with Medical Student Societies, resulting in the introduction of innovative pedagogical approaches to learning (e.g. competitive learning approaches and the 'SimWars' project/initiative) and facilitation of student research-led learning initiatives (students' extra-curricular involvement and contribution to the CLEAR project);
- Instances of community engagement (e.g., public initiatives in partnership with Heart Foundation Ireland – '*Hands for life*' – and An Garda Síochána – '*Serious Incident Escalation Simulation Project*');
- Instances of demonstrated commitment to global access to healthcare and patient empowerment through the CLEAR Project (i.e., Combining Leadership and patient Empowerment through intelligent data Access and Remote consultations).

2.3 Recommendations to the Centre

Following the considerations outlined in Section 2.1, the Panel strongly recommends the ASSERT Centre's Director and Director of Education and Research promptly engages with the Head of the

College of Medicine and Health and the College Executive, in order to commence a thorough and strategic appraisal of its operations, achievements to date and potential developments for the future. In doing so, the Panel acknowledges that the responsibility for this process lies beyond the sole remit of the ASSERT Centre's current directors.

The following issues should be central to that strategic appraisal:

- Identification, in conjunction with the College of Medicine and Health, of a clear developmental trajectory for the Centre, which addresses questions of an appropriate reconfiguration, a route to competitive distinction and future sustainability, based on its potential in its two closely interconnected operational domains - education and training and research and innovation, and aligned with recent innovation developments within the region. As part of this, due consideration should be given to establishing what is the 'added value' that the ASSERT Centre wishes to attach to its unique approach to any activity and/or collaboration it pursues;
- Establishment, in conjunction with the College of Medicine and Health, of a Strategic Advisory Review Group to report indicatively within three months and composed of national and international experts in the field (including Tyndall counterparts) along with representatives from the College Executive and University's UMT to identify and clearly define a framework for:
 - The ASSERT Centre's *raison d'être*, correlated with a clear formulation of its core aims, objectives, remit and scope (deciding the balance between its two foci – education & training and research & innovation);
 - Clear and focused values, mission and vision, anchored on a clearly defined identity;
 - A sustainable three-year plan, aligned with the University's Strategic Pivot UCC 2022 and accompanied by a S.M.A.R.T. (Specific, Measurable Achievable Realistic Timely) business plan with agreed deliverables;
 - Appropriate structures and processes of governance, with clearly defined roles, responsibilities and reporting lines;
- As part of this appraisal, the Strategic Advisory Review Group should give consideration to leadership requirements to drive the ASSERT Centre forward in the effective formulation and implementation of the deliverables included in the Centre's Business Plan. In particular, it is likely that this will require the identification and appointment of a full-time focused Executive to complement the existing team, proactively leading the outreach along both axes of a revitalised plan. This person is seen by the Panel as business oriented, proactive, with credible gravitas and filling the role of Director of Strategic Development, as part of the triumvirate with the two existing directors. Ultimately, if successful, such a person, given her/his full-time focus, would subsume responsibility for the Centre's continuing operations, as they evolve and morph in line with the future strategy for the ASSERT Centre.
- Should the decision be to embrace a strong research and innovation focus, then the Strategic Advisory Review Group should consider identifying and attracting a leading PI or world-class clinician, to be associated with ASSERT, with a strong research background and perhaps formally situated within the College of Medicine and Health.
- Key objectives for the ASSERT Centre in the next three years should include:
 - Working towards establishing strong and durable links with the HSE and the SSWHG, as well as enhancing the Centre's attraction of and collaboration with research-active professionals, including those based in Tyndall Institute, proactively outreaching to existing and future collaborators and clients.

- Establishing a new configuration to enable implementation of the agreed objectives, direction and business priorities of the Centre, such as an effective communication, marketing and PR Strategy to ensure it projects a coherent identity, with a clearly recognisable brand, and communicates a consistent message on its added value, reaching out to the various, actual or potential, internal and external stakeholders, locally, nationally and internationally and raising awareness of the Centre's activities, achievements, projects, collaborative opportunities, while ensuring its profile and reputation are raised.
- Re-constituting the Unit's current Advisory Board, in order to reflect the newly embraced strategic direction, with clear remit and reporting lines.
- Fully exploring the idea of establishing a National Simulation Centre of Ireland, as outlined in the SER, similar in concept to the Health Innovation Hub Ireland, in collaboration with the other relevant academic centres. This exploration should also detail the strategic opportunities, benefits and challenges that such development could present.
- Engaging fully with the University's evolving micro-credentials framework, as well as with the possibility of pursuing specialized, advanced and research-led teaching as the main output of the Centre within its education & training domain.

Staffing

- The Centre should prioritise professional career development of its staff and, in this context, the Director should ensure that the periodic Staff Performance Management and Development review is utilized effectively to ensure that staff are aware of the criteria and avail of guidance in developing their professional development and career.

2.4 Observations to the College of Medicine and Health

- The Panel strongly encourages the Head of the College of Medicine and Health and the College Executive to work with the ASSERT Centre's directors, in order to make concerted strategic decisions concerning the Unit's future. This process, conducted with the support of a bespoke Strategic Advisory Review Group, should include the identification of a clear developmental trajectory, which can guarantee the Centre's sustainability and the fulfilment of its potential in its two pertinent and closely interconnected operational domains - education and training and research and innovation.

Appendix A – Panel Profiles

Panel Profiles – Quality Review of the ASSERT Centre, UCC

<p>Mr David Collins</p>	<p>Mr Collins is a final year student at the College of Arts, Celtic Studies and Social Sciences, where he is currently studying a Bachelor's Degree in Government and Political Science.</p> <p>Mr Collins has also played an active role in UCC Societies and served in various student representation functions. He was elected as chairperson of the UCC Horse Racing Society for 2018/19 and as vice-chair in 2019/20 and 2020/21. He has also been on the committee of the UCC Government and Politics Society as an Ordinary Committee Member. These roles have often involved running and reviewing large-scale events such as the Cork Student Race Day and the UCC Government and Politics Ball, as well as identifying ways in which they can be improved each year. Additionally, he has been elected as Academic Class Rep for Government and Political Science in 2019/20 and 2020/21. In this role he has identified and addressed any academic issues with the Department and represented his year group at the Students Union Council meetings.</p> <p>Thanks to these experiences with the School's academic representation structures and University's Societies, Mr Collins has gained valuable insights into student needs, expectations and the operations of the University, which will assist him in performing the role of Student Reviewer for the Quality Review of ASSERT.</p>
<p>Dr Niamh Connolly</p>	<p>Dr Niamh Connolly is Director, Projects, President's Office, UCC. She previously worked as Expert Advisor and Associate Vice Provost to the President of Nanyang Technological University (Singapore) (NTU; QS ranked 12th globally). From 2002-2009, she was Head of the European Marine Board (Strasbourg and Brussels) during which time she initiated and implemented government level pan-European funding policies and programmes. She has chaired and been a member of several pan-European funding and research policy programmes and authored in excess of 15 policy foresight publications that informed funding programmes.</p> <p>Dr Connolly has over 25 years' experience as both lead coordinator and evaluator of EC Framework Programme funded research. She was expert rapporteur of the EC's retrospective assessment of its €1.89 billion euro investment in FP 7 Environment and Climate research programme, its €85 million Earth Observation programme, and a mid-term review of €60m Horizon 2020 marine research programmes. She has also been an evaluator advising on the establishment of European Parliament Article 169 /185 funding initiatives.</p> <p>While working in UCC in the late 1990s (personally secured over 15% of UCC research funding; established a team of 20+ marine researchers), Dr Connolly was responsible with then VP Research Professor Brian Harvey for securing IR£22 million from the HEA for</p>

	<p>the establishment of UCC's Environment Research Institute at sites on both the Lee Road and Ringaskiddy (in association with CIT and Irish Naval Service), while also securing funding from Mr Lewis Glucksman of IR£3 million.</p>
Dr Simon Edgar	<p>Simon Edgar [MBChB FRCA MSc FAcadMed] is by profession a consultant anaesthetist living and working in Edinburgh. As a clinician educator, he has a Master's degree in Medical Education from Edinburgh University and has held a number of roles in University, Deanery and Health board with an education focus.</p> <p>As Director of Medical Education for NHS Lothian, he has a broad ranging input into high quality clinical education for Undergraduate students and Postgraduate Drs in training and has academic interests in simulation for learning, systems improvement, and development of faculty, alongside a key focus on the well-being and engagement of the Healthcare workforce.</p> <p>Dr Edgar was a permanent faculty member and Educational Coordinator in the National Simulation centre for Scotland at (SCSCHF) where he took a lead role in Faculty development both internally and in the wider Scottish context. He also contributes to the development of a body of experience in Non-technical skills and Human factors training relating to healthcare.</p> <p>He is a graduate of the Intermountain Healthcare Advanced training programme in Leadership for Healthcare Delivery Improvement [ATP]. He set up the Lothian Improvement Academy and mentored the first cohort through this Leadership programme.</p> <p>He believes passionately in the power of relationships; in the development of individuals to maximally achieve; the strength of effective team working and finding joy in our work.</p>
Professor Gerry Gormley	<p>Professor Gerry Gormley is a clinical Professor in Simulation at Queen's University Belfast (QUB) and a practicing GP in the greater Belfast area. He was appointed in 2018 as the inaugural chair in simulation at QUB. Prior to this appointment, he led one of the largest health profession education PhD programmes in the UK at QUB. Professor Gormley has a track record of publications in scientific journals and book chapters relating to simulation. He has an international recognition as an expert qualitative research methodologist. He has won a number of awards for his research into simulation, most notably winning a prestigious HEA National Teaching Fellowship Award. Professor Gormley has three main programmes of simulation-based research. Firstly, understanding how students navigate, and manage, complexity and uncertainty in simulation. His second programme of work relates to a pedagogy of discomfort in simulation and how learners manage challenging conversations and interprofessional relationships. Lastly, he has a keen interest in human factors, with a long-standing fascination into laterality errors.</p>
Professor Dan Maher	<p>Dan Maher is an Adjunct Associate Professor in the School of Medicine, TCD, focused on the school's Diploma in Healthcare Innovation and advisor to the national Health Innovation Hub.</p> <p>Prior to this he has held senior roles across a wide range of medical and information technology companies including Biomedical</p>

	<p>Research Limited (Ireland), Hemacon (Düsseldorf & Bangalore), Medinet (New York), Siemens (Munich), and Digital Equipment Corporation (Boston & Sophia Antipolis). He holds two patents in neuromuscular stimulation.</p> <p>In addition, as former Head of Technology Strategy at ACT Venture Capital, he has been a board member in a wide range of early-stage technology companies including cyber security company- AEP Networks Ltd. (Chairman), cardiac stent company- Cappella Inc. (Vice-Chair), image processing company- Amphion Ltd (Director), defibrillation company - Heartsine Inc. (Director) and IOT company- Innovada Ltd. (Chairman). Dan holds an M.Eng.Sc in Electronic Engineering from University College Dublin and an MBA from INSEAD in France.</p>
<p>Professor Paul McSweeney [Chair]</p>	<p>Professor Paul McSweeney is Vice-President for Learning and Teaching in University College Cork. His office coordinates the activities of the University's Centre for the Integration of Research, Teaching and Learning (CIRTL), Adult Continuing Education (ACE), Centre for Digital Education, Skills Centre, Examinations Appeals and the Language Centre, together with responsibility for delivering aspects of the University's Academic Strategy.</p> <p>As Professor of Food Chemistry and former Head of the School of Food and Nutritional Sciences, he has an active research profile in dairy chemistry and cheese science. He is the co-author or co-editor of 15 books and about 275 research papers and reviews with a h-index of 65 with over 20,600 citations (Google Scholar; July 2020). He was awarded the Marschall Danisco International Dairy Science Award of the American Dairy Science Association in 2004 and in 2009 a higher doctorate (DSc) on published work by the National University of Ireland.</p> <p>Since 2009 he has been a member of Academic Board, the senior university standing committee of Academic Council responsible for the formulation of strategy and policy to meet the university's education and research objectives. He has chaired the university's Examinations Appeals Committee and for over five years ADSC, the university's main academic policy committee. He is also a member of the board of the National Forum for the Enhancement of Teaching and Learning in Higher Education.</p> <p>Prof McSweeney has considerable leadership and management experience in higher education. He was vice-head of school, vice-head of the College of Science, Engineering and Food Science, interim Head of College, a governor of the university (2015-2018) and member of its Finance Committee and head of the School of Food and Nutritional Sciences. He was appointed Vice-President for Learning and Teaching in 2018 and acted as Vice-President for External Relations for five months in 2020.</p>
<p>Quality Enhancement Unit Members</p>	
<p>Dr Silvia Brandi (Review Coordinator)</p>	<p>Dr Silvia Brandi has worked in UCC's Quality Enhancement Unit since February 2019. Prior to this, in January 2018, she became a team member of the Student Records and Examinations Office, one of the University's core Professional Services, progressing from her previous post at the Boole Library (since December 2016).</p>

	<p>Having gained her Masters' Degree in Youth and Community Work (2006) and PhD Degree (2013) in Social Policy with UCC's School of Applied Social Studies, Dr Brandi worked as UCC university lecturer within the Higher Diploma in Social Policy programme for nearly four years.</p> <p>While pursuing her postgraduate studies at the UCC School of Applied Social Studies, she acquired other relevant public service experience by working for Cork's social services (HSE South/Tusla) for ten years, where she supported young people out of home and, later, assisted Tusla's Implementation Officer (Cork) with relevant research on contemporary issues in Irish social work.</p> <p>Her undergraduate (Honours) degree in Ancient Classics was awarded by Padua University (Italy) in 2000. During her undergraduate studies she also worked as a free-lance journalist.</p>
<p>Ms Sheila Ronan <i>(IT and Logistics Coordinator)</i></p>	<p>Sheila Ronan has worked in Quality Enhancement since 2010. Prior to joining the University's core Professional Services, Sheila was a Research Archaeologist in the UCC's Cork Archaeological Survey, Archaeology Department, for ten years. Ms Ronan holds a Master's Degree in Archaeology.</p>

Appendix B – Peer Review Panel Remote Site Visit Timetable

QUALITY REVIEW OF THE ASSERT CENTRE

PEER REVIEW PANEL REMOTE SITE VISIT TIMETABLE

In Summary

In advance: The Peer Review Panel’s Chair is briefed by the Quality Review Coordinator, followed by a briefing from the Director of Quality Enhancement and the Review Co-ordinator to the whole Quality Peer Review Panel.

Remote Site Visit: The Panel has online meetings with the Head of the Centre, Senior Management, students and stakeholders. The Panel has online meetings with the Centre’s staff. The Panel commences drafting the report including recommendations and commendations. The Panel has a final meeting with the Head of the Centre, followed by a closing presentation to all staff members of the School.

IN ADVANCE

13 January 2021	
11.30 – 12.30	Chair Briefing with Dr Silvia Brandi, Review Co-ordinator.
15 January 2021	
10.00 – 11.30	Panel’s Strategic Planning Meeting with Ms Elizabeth Noonan, Director of Quality and Dr Silvia Brandi, Review Co-ordinator.

Virtual Site Visit

19 January 2021	
09.00 – 10.00	Convening of Panel members – preparation for day ahead
10.00 – 11.00	Meeting Dr Patrick Henn, Director Research and Education <i>Focus on:</i> - SER: how the Centre undertook its SER; what it learned from the process; what it hopes to gain from the review; Covid19 Addendum to the SER - Centre developments to date, strategic priorities of the Centre and overview of educational/instructional provision

11.00 – 11.30	Break for Panel members
11.30 – 12.15	Meeting with ASSERT's Advisory Board members Dr Coleman Casey, HIHI National Director, UCC Dr Siobhan Cusack, Head, Student Records and Examinations, UCC Mr Declan Fox, Entrepreneurial Business & Technology Professional Dr Paul Galvin, Tyndall
12.15 – 13.00	Professor Stephen Byrne, Interim Registrar <i>Discussion of UCC's Strategic Plan (2017-2022) and Academic Strategy (2018-2022)</i>
13.00 – 13.20	Break for Panel members
13.20 – 13.30	Meeting with External (Industry) Stakeholders Mr David Hanrahan, Smith & Nephew
13.30 – 14.00	Break for Panel members
14.00 – 14.30	Meeting with Senior Officers of the University Professor Anita Maguire, Vice-President for Research and Innovation <i>Discussion of existing opportunities for consolidation and development of ASSERT's activities in the domains of Education & Training and Research & Innovation, as well as of the support and guidance available for the Centre at University level</i>
14.30 – 15.15	Meeting with Professor Helen Whelton, Head of College of Medicine and Health <i>(to be joined by the College Financial Analyst, Ms Áine Foley, at 14.55pm)</i> <i>Panel discuss College strategy and priorities and the links between College/Centre's financial resource allocations process, staffing resources and infrastructure.</i>
15.15 – 15.30	Wrap-up meeting

20 January 2021	
09.00 – 09.30	Meeting with Professor Barry O'Reilly, Director of ASSERT <i>Focus on:</i> <i>- Centre developments to date, strategic priorities of the Centre and overview of educational/instructional provision</i> <i>- Any other arising matters</i>
09.30 – 10.30	Meeting with Centre staff Ms Tracy Ahern Mr Kevin McGuire Ms Jean Scully

	<p><i>Discuss issues such as strategy, communications, research & opportunities, staffing, staff development, etc.</i></p> <p><i>Group discussion:</i></p> <ul style="list-style-type: none"> - <i>What is working well in the Centre?</i> - <i>What has potential? What should be improving?</i> - <i>What is the one thing that needs to change?</i>
10.30 – 11.15	<p>Enhancing the Student Learning Experience</p> <p>Dr Pat Henn, Director of Research and Education, ASSERT Centre - discussing <i>SIM WARS</i> and competitive learning approaches in healthcare education;</p> <p>Dr John O'Donoghue, Director of the Malawi eHealth Research Centre - discussing the CLEAR project and students' involvement in e-Health research projects.</p> <p><i>Opportunity for the Centre to showcase good practice and enhancements to the student learning experience</i></p>
11.15 – 11.45	<p>Break for Panel members</p>
11.45 – 12.30	<p>Meeting with Internal (UCC) Stakeholders</p> <p>Professor Ella Arensman, SPH, SAMAGH Project Dr Declan Herlihy, Faculty, Intern Simulation Sessions Dr Helen Hynes, School of Medicine Dr Dan Mullane, Faculty for Anaesthesia Simulation Courses Ms Katie Sandham, Manager, Centre for Continuing Professional Development Dr Isabela Troya, SPH, SAMAGH Project</p> <p><i>Discussion of matters concerning current professional collaborations with the ASSERT Centre: benefits, areas for improvement and possible future developments</i></p>
12.30 – 13.15	<p>Meeting with External (Industry) Stakeholders</p> <p>Panel members, in pairs, meet individual stakeholders in three rounds of 10 minutes each. The final fifteen minutes are dedicated to collective discussion of gained insights by Panel members.</p> <p>12.30 – 12.40pm Mr Vincent Forde, Gasgon Medical (D. Maher & S. Edgar)</p> <p>12.40 – 12.50pm Mr Patrick Hartnett, B Braun Medical (P. McSweeney & D. Collins) Ms Vera Griffin, Premier Surgical (G. Gormley & N. Connolly) Ms Angela Harrington, Tekno-Surgical (D. Maher & S. Edgar)</p> <p>12.50 – 13.00pm Mr John O'Shea, BD (P. McSweeney & M. O'Regan) Mr Hugh O'Donoghue, Versono Medical (G. Gormley & N. Connolly) Mr Ian McCarthy, Boston Scientific (D. Maher & S. Brandi) Mr Marc Daly, Vodafone (S. Edgar & D. Collins)</p>

	<p>13.00-13.15 Panel's discussion of findings from individual meetings</p> <p><i>Discussion of ASSERT's partnerships with external stakeholders (business partners, NGOs and others): benefits, areas for improvement and auspicated future developments</i></p>
13.15 – 14.00	Break for Panel members
14.00 – 14.30	<p>Meeting with Course organisers and facilitators</p> <p>Ms Sylwia Gomes and Mr Kevin Manley (Senior Director, R&D), Stryker</p> <p><i>Discussion of their involvement in ASSERT's education and training provision: positives, areas for improvement and ideas for future developments</i></p>
14.30 – 15.00	Break for Panel members
15.00 – 15.45	<p>Meeting with Trainees (final medical students, interns and consultant registrars)</p> <p>Mr Ashfaq Afridi, Specialist Anaesthesiology Trainee Mr Bailey Crowley, Intern Rep</p> <p>Ms Aoife Jones Thachuthara, 5th Year Medical Student Mr Cillian Keogh, Orthopaedics JH, Specialist Registrars</p> <p>Mr Colum Keohane, SpR 4 Vascular, Specialist Registrars Ms Christine O'Sullivan, 5th Year Medical Student Mr Aidan Vaughan, Medical Device Engineer, Stryker</p> <p><i>Discussion on the student experience: positives, areas for improvement and ideas for future developments</i></p>
15.45 – 17.00	<p>Panel meeting</p> <p><i>Panel begins to draft the Report's commendations and recommendations.</i></p>

21 January 2021	
08.30 – 09.15	<p>Meeting with Key Representatives from the Tyndall Institute</p> <p>Dr Paul Galvin, Head of the ICT for Health Programmes and Head of the Life Sciences Interface Group, Tyndall Institute Professor Cian O'Mathuna, Head of Micro & Nano Systems Centre, Tyndall Institute</p>
09.15 – 11.00	<p>Convening of the Panel</p> <p><i>Panel meeting to continue drafting the report's recommendations and commendations</i></p>
11.00 – 11.30	Break for Panel members

11.30 – 12.00	Meeting Dr Patrick Henn, Director Research and Education <i>Clarification and discussions of main findings by Panel.</i>
12.00 – 13.00	Panel Meeting <i>Finalisation of Panel's recommendations and commendations</i>
13.00 – 13.45	Break for Panel members
13.45 – 14.30	Panel Meeting <i>Formulation of the closing presentation</i>
14.30 – 15.00	Closing Presentation <i>Closing presentation to all staff, to be made by the Chair or other member(s) of Panel as agreed, summarising the principal findings of the Panel. This presentation is <u>not</u> for discussion at this time.</i>