

9th NASCE Scientific Meeting

Ghent, Belgium | 8–9 October 2026

The 9th NASCE Scientific Meeting, hosted in Ghent by ORSI Academy in collaboration with ITICIT, brought together leading experts, educators, clinicians, and trainees from across Europe and beyond to reflect on current developments in simulation-based surgical education.

Day 1 – 8 October 2026

Opening Session

The meeting was formally opened by Dr. Emin Aksoy, President of NASCE, together with Dr. Wouter Willaert and Dr. Eva Vanderstraten, who welcomed participants to Ghent and to the 9th edition of the NASCE Scientific Meeting.

In his remarks, Dr. Wouter Willaert underlined the significance of the event as an important milestone for NASCE and for simulation-based education more broadly. He paid tribute to Eva Vanderstraten, Project Manager for Education at ORSI Academy, for her central role in the organization of the meeting. He also noted that both ORSI Academy and ITICIT, based in Belgium, are NASCE-accredited centers, and emphasized the value of their joint efforts in organizing the meeting in close collaboration with Belgian surgeons and several national surgical societies.

Dr. Willaert further stressed that the initiative extended beyond NASCE itself, bringing together senior experts, junior colleagues, and a wide range of institutional partners in support of a shared educational mission. He concluded by thanking all participants for their presence and by reaffirming the importance of simulation in healthcare, highlighting the inspiration provided by seeing leading organizations from across Europe united in advancing the field.

Dr. Emin Aksoy also referred to the forthcoming 10th NASCE meeting, observing that the present gathering in Ghent marks an important step in NASCE's continued development and prepares the ground for the organization's next major milestone.

Welcome Address

Eva Vanderstraten, Project Manager of the Education Team at ORSI Academy, expressed her pleasure and honor in hosting the meeting and offered participants an overview of the Academy's mission, educational philosophy, and commitment to high-quality training and accreditation.

She recalled that ORSI Academy was founded in 2010 by Professor Alex Mottrie as a pioneering training center in robotic surgery. Since then, it has grown into an internationally recognized center for surgical innovation and minimally invasive training, serving healthcare professionals, academic researchers, and the medical device industry worldwide.

She highlighted ORSI's vision: to shape the future of surgery through education, innovation, and collaboration. By integrating advanced technology with structured, high-quality training, the Academy aims

to support surgeons in reaching their full potential and thereby contribute to improved patient outcomes globally.

Reflecting on ORSI's development, she noted that its training activities were initially focused largely on urology before expanding across multiple specialties. Today, ORSI trains surgeons in a wide range of disciplines, with an increasingly international audience.

A central pillar of ORSI's approach is Proficiency-Based Progression (PBP). This methodology requires trainees to progress only after demonstrating measurable proficiency at each stage of learning. The model promotes effective skill acquisition and enhances patient safety.

Simulation-based training was presented as essential to the successful implementation of PBP. ORSI offers a safe, learner-centered environment in which surgeons can develop technical skills across all levels of complexity using virtual reality simulators, low- and high-fidelity models, and fully equipped robotic laboratories designed to replicate real operating conditions.

She also emphasized the importance of accreditation, noting that quality in surgical education must be demonstrated rather than assumed. ORSI therefore places value on international accreditation, including NASCE accreditation, as a mark of excellence and accountability.

Looking ahead, she referred to ongoing developments at the Academy, including the integration of artificial intelligence into training programs, the expansion of international partnerships, and continued investment in facilities and infrastructure. She concluded by observing that ORSI is not only training surgeons but also helping to shape the surgical teams of tomorrow.

Her address ended with the quote: "Some see things as they are and ask why. Others dream things that never were and ask why not."

Plenary Session 1: Training and Assessment

The first plenary session opened with a brief apology for earlier technical difficulties, accompanied by thanks to the audience for its patience and understanding. As the program was running slightly behind schedule, speakers were asked to adhere closely to their allocated 10-minute presentations, followed by 3 minutes of discussion.

The session focused on training and assessment in surgical education and brought together speakers from a range of backgrounds in simulation, education, and clinical practice.

Training "The Robotic Surgeon" – Proficiency-Based Technical Training by Niki Rashidan

Niki Rashidian, consultant surgeon and Co-Director of Research and Skill Development at RCSI, addressed the need for structured, proficiency-based training in robotic surgery.

She began by situating technical training within the broader process of surgical skill acquisition, which involves the development of cognitive, psychomotor, and affective competencies. Her presentation focused specifically on psychomotor and technical skill development.

She noted that the surgical learning curve is not linear and includes the progressive attainment of competence, proficiency, and ultimately expertise. However, conventional training often stops at competence, whereas robotic surgery demands something more advanced: proficiency.

Robotic surgery introduces distinctive training challenges, including console-based operating, multi-arm coordination, the absence of haptic feedback, unfamiliar ergonomics, and the need to communicate

effectively with the team while physically separated from the operative field. These features make robotic surgery particularly demanding and reinforce the need for a structured training model.

She presented PBP as a robust and evidence-based solution. Within this framework, procedures are broken down into phases and steps, and validated metrics are used to define and assess proficiency. Trainees are required to achieve predefined benchmarks in simulation before progressing to clinical practice.

She identified three core pillars of the approach: infrastructure, a structured curriculum, and assessment with feedback. At RCSI, this is supported by simulation laboratories equipped with multiple robotic platforms and a curriculum that progresses from metric development and e-learning through device-specific instruction, basic skills, and stepwise procedural training. The pathway culminates in independent certification based on objective performance criteria.

She concluded that PBP offers a safe, structured, and validated route from novice to proficient robotic surgeon, grounded in objective assessment and independent certification.

Competency-Based Resident Training in Chest Tube Insertion by Leander de Mol

He presented a study examining how resident competence in chest drain insertion can be measured and improved through a simulation-based training curriculum.

The study aimed to develop a structured training program for junior surgeons using two realistic simulation models. An assessment instrument was created through the Delphi method, dividing the procedure into 17 steps and identifying 16 critical errors. A global rating scale proved more reliable than the error checklist.

Seventeen novice participants were enrolled and divided, after baseline testing, into a control group and an intervention group. The intervention group completed a structured simulation-based pathway involving stepwise progression and feedback.

While both groups improved in theoretical knowledge, technical skill acquisition was significantly greater in the intervention group, where all participants reached proficiency benchmarks. Participants in this group also reported higher confidence and decreasing stress levels over time.

The study concluded that structured, proficiency-based simulation training can significantly improve technical performance in simulated settings, although further work is required to determine how far these gains transfer into clinical practice.

Assessment of Clinical Reasoning and Human Factors in a Simulated Environment by Dieter Vyt

A three-level implementation framework was presented for integrating simulation-based education into a nursing curriculum through a structured and cost-conscious model.

The first level focused on basic skills using low-fidelity simulation and task-based learning supported by e-learning and automated feedback. The second involved procedural simulation through standardized scenarios such as Advanced Life Support. The third employed high-fidelity simulation to train complex clinical scenarios integrating technical skills, communication, and clinical reasoning.

Emphasis was placed on constructive alignment: clearly defined learning objectives, aligned teaching activities, and appropriate assessment methods. A competency framework centered on the nurse-patient relationship, relational capabilities, and professional and clinical skills was developed and supported by a multidisciplinary assessment tool.

The presentation concluded that simulation can be successfully integrated into nursing education when supported by a structured, aligned, and methodologically rigorous educational design.

My Virtual Surgery: Scaling Surgical Training Globally by Paul Sergeant

The “My Virtual Surgery” project seeks to scale surgical training globally through simulation and digital platforms.

The speaker highlighted the limitations of traditional training systems and argued that non-biological simulators provide a practical and scalable alternative to patient-based, animal, or cadaver-based learning.

The project advances the principle of ubiquitous simulation, whereby every surgeon has access to a low-cost, portable simulator. Resources can therefore be directed toward learning rather than travel and logistics.

Structured curricula were developed around transferable fundamental skills, such as vascular anastomosis, and supported through formative assessment using validated instruments such as OSATS. Low-cost simulators combined with a semi-automated digital platform allow learner progress to be tracked, remote training to be delivered, and structured pathways to be followed over time.

The project has already reached substantial scale, with hundreds of webinars, more than 14,000 trainees worldwide, and dozens of training centers.

The My virtual surgery project is a strictest application of science learning, strictest application of business management, proven global scalability, free for scholars and institutions, assesses the surgical process and the s-surgical product. All at the benefit of the patient.

AI in healthcare- The missing link between simulation and assessment by Wouter Bogaert

He addressed the role of artificial intelligence in bridging the gap between simulation and assessment in surgical education. He identified two major challenges in current training systems: the increasing demand for training and the limited availability of faculty time and financial resources.

AI offers solutions in two principal ways. First, automated assessment can provide objective, real-time performance evaluation by detecting errors and delivering immediate feedback. Second, AI-driven training systems can support learning directly by offering real-time guidance and helping trainees improve technical as well as cognitive performance.

He also introduced the concept of AI as a training assistant. Through vision-language models, AI can interpret surgical scenes and generate natural-language feedback, enabling learners to ask questions and receive guidance much like they would from a human tutor.

Plenary Session 2: Training, Time, Tutors... Is What We Need

The second plenary session turned to the future of surgical training, with a particular focus on younger generations, institutional support, and the conditions necessary to support talent development and innovation.

Get to Know Junior ORSI

Marie Huys and Olivia Corthals presented the Junior ORSI Academy, a fast-growing, student-led organization dedicated to inspiring and supporting future healthcare professionals.

Managed by a 13-member board composed primarily of medical students, the organization has grown from 240 members before the COVID-19 pandemic to almost 500 members today.

The Academy organizes approximately 13 events each year across four principal tracks: innovation, engineering, medical, and research. These activities combine lectures, hands-on workshops, and interactive educational experiences.

The speakers also highlighted international opportunities offered through Junior ORSI, including fully funded fellowships, participation in global competitions, and a summer school in robotic surgery developed in collaboration with international partners.

Challenges and Opportunities in Surgical formation by Cedric Schraepen

Reflected on current challenges and opportunities in surgical training, emphasizing the need to invest meaningfully in the next generation of surgeons.

Drawing on his work with the Belgian Association of Surgical Trainees, he stressed the need for stronger advocacy for trainees, greater investment in training infrastructure, and closer dialogue between trainees and trainers.

He also raised the issue of the limited presence of trainees at scientific meetings and called for attention to the structural barriers that may limit participation.

Successful Integration of Simulation-Based Training in Daily Practice by Gilles Soenens

Gilles Soenens presented the integration of simulation-based training into daily surgical practice, focusing particularly on vascular surgery.

He presented the PROSPECT (**PRO**iciency-based **SteP**wise **Endo**vascular **C**urricular **T**rainig) program, a proficiency-based curriculum combining e-learning with virtual reality simulation and structured progression through four modules.

The results showed that trainees who completed the program acquired technical skills more effectively and performed better in clinical practice than those trained via conventional methods. At the same time, he noted that sustained implementation requires leadership support, infrastructure, and protected time.

Stress responses of surgical trainees during simulation-based training courses in laparoscopic surgical skills by Maria Suong Tjonnas

She presented research on stress responses of surgical trainees during simulation-based laparoscopic training, examining how stress manifests across different levels of experience. First, she addressed why stress is an important component of simulation-based training. Trainees reported that exposure to stress in a controlled environment helps them better understand how to respond during technical procedures, anticipate their performance under pressure in real clinical settings, and develop effective stress management strategies.

Using a mixed-methods approach including heart rate variability, cortisol measurements, self-reported stress ratings, and qualitative interviews, the study demonstrated that stress levels increased not only when participants acted as primary surgeons, but also when they took on assisting roles. This highlights that stress is inherent to the broader surgical team dynamic, not just the lead operator.

Importantly, the findings showed that elevated physiological stress during virtual reality simulation was not always perceived negatively. Many trainees interpreted these responses as excitement, engagement, or productive challenge, suggesting that stress can play a constructive role in learning when appropriately framed.

Building Competent Simulation Educators: The SimNext Approach to Lifelong Learning by Uli Strauch

Uli Strauch presented the SimNext initiative, designed to support structured lifelong learning for simulation educators.

A national collaboration in the Netherlands developed a competency framework spanning needs analysis, curriculum design, simulation delivery, evaluation, and continuous professional development.

He concluded that simulation is fundamentally about education rather than technology, and that the quality of simulation-based learning depends as much on educator development as on facilities and equipment.

Assessing Artificial Intelligence as a Diagnostic Support Tool for Surgical Admissions in the Emergency Department by Tom McIntyre

This presentation examined the potential role of artificial intelligence, specifically large language models, as diagnostic support tools for surgical admissions in the emergency department.

Using structured handover documents from 100 retrospective surgical admissions, the study compared the diagnostic performance of GPT-4 with that of junior doctors and found similar levels of accuracy.

The findings suggest that AI may serve as a useful second opinion for junior clinicians, particularly in on-call settings, although it cannot replace clinical judgement because it lacks the ability to examine the patient directly.

Industry Sessions, Lunch Break, and Breakout Sessions

Before lunch, participants were reminded to complete the scoring sheets for the oral presentation sessions.

The organizers expressed gratitude to all contributors to the meeting, including faculty members, organizational teams, and sponsors, whose support made the event possible. Thanks were extended to Aesculap, Surgical Science, Peters Surgical, Medtronic, KARL STORZ, and Johnson & Johnson.

A representative of MicroPort MedBot then introduced the company and its role in developing surgical technology and training, with particular attention to the future of surgical education in the context of telesurgery.

Plenary Session 3: Team Training – Enhancing Competency and Confidence

The third plenary session addressed team training and competency-based education, with a particular emphasis on interprofessional collaboration in complex clinical settings.

Interprofessional Team Training in ECPR (ECMO and Team Training)

This presentation focused on the implementation of interprofessional simulation-based training for extracorporeal cardiopulmonary resuscitation (ECPR), a highly complex and time-critical procedure requiring coordinated action by multidisciplinary teams.

The program aimed to reduce low-flow time while developing technical and non-technical competencies such as communication, coordination, and decision-making. Positive outcomes included reduced low-flow time and improved team collaboration in clinical practice.

Surgical Sabermetrics: Enhancing Operative Team Performance

Calum Arthur presented the concept of surgical sabermetrics and discussed how data-driven methods can be used to improve team performance in the operating theatre.

Drawing on examples from elite sport and the military, he described how video review, physiological monitoring, and team interaction analysis can support decision-making and performance improvement.

Technologies and Innovation for Team Training

Serena Ricci examined the role of emerging technologies in team training for healthcare education, including immersive tools such as virtual, augmented, and mixed reality and AI-supported educational content.

Resilience During Crisis Situations: Lessons from COVID-19

Cecilia Escher reflected on resilience in healthcare during crisis situations, drawing on lessons learned from the COVID-19 pandemic.

She concluded that future crisis preparedness must focus not only on material resources and organizational logistics, but also on the human and relational conditions that allow healthcare teams to remain resilient.

NASCE – 10 Years Young!

A dedicated session marked ten years of NASCE and reflected on the organization's growth and evolution.

Anders Bergenfelz revisited the origins of NASCE, from early discussions held between 2012 and 2013 in Zurich, Malta, and Brussels, to its formal establishment on 19 September 2014 as a joint committee under the UEMS Section of Surgery.

Oscar Traynor emphasized the growing importance of simulation-based education, objective assessment, credentialing, and lifelong learning in a rapidly evolving surgical environment.

NASCE – Train the Trainer Programme

Dara O'Keeffe presented the development and impact of the Train the Trainer programme, a two-day multidisciplinary course designed for simulation educators at all levels.

Since its launch in 2016, the programme has expanded internationally and has trained more than 100 participants from over 18 countries and from a wide range of healthcare professions.

Day 2 – 9 October 2026

Welcome and Summary of Day 1

The second day of the NASCE Annual Meeting began with a welcome and a summary of the first day's principal themes and discussions.

Plenary Session 4

Simulation School of Nancy and the Surgical Simulation Programme in France

Nicolas Berte presented the simulation programme developed at the Virtual Hospital of Nancy, focusing on a structured curriculum for fundamental robotic surgery skills.

Designed as an intensive five-day course, the programme combines theoretical teaching, simulation, dry lab and wet lab sessions, and hands-on training, amounting to approximately 42 hours of structured learning.

The presenter reported measurable improvements in performance and efficiency over time, together with very positive participant feedback.

Patient-Specific Preoperative Simulation Based on AI 3D Modelling

Luc Soler presented on the use of artificial intelligence-based 3D modelling and virtual reality for patient-specific simulation in surgical training and clinical care.

He concluded that patient-specific 3D modelling, combined with AI and immersive technologies, offers major potential for both education and clinical decision-making.

Improving Non-Technical Skills (NOTECHS) in Surgical Crises: The Impact of Team Simulation

Jean-Marc Baste addressed the development of non-technical skills in surgical crisis management through simulation-based team training.

He concluded that the successful management of surgical crises depends not only on technical competence, but also on strong teamwork and communication, both of which can be substantially improved through regular simulation-based practice.

Coaching the Surgeon

Calum Arthur explored the concept of coaching in surgical education, drawing on lessons from sport and military performance.

He concluded that coaching represents a valuable complement to more traditional training models and can play an important role in supporting performance development in surgery.

Prize Session: Proficiency-Based Progression on the Hugo System for Nerve-Sparing Robotic Radical Prostatectomy: A Feasibility Study

Edoardo Beatrici presented a feasibility study on a proficiency-based progression training programme for nerve-sparing robotic-assisted radical prostatectomy using the Hugo robotic platform.

The study found that the programme was feasible and well accepted across participants with varying levels of prior robotic experience, reinforcing the need for validated, tailored educational pathways.

Plenary Session 5: Innovation and the Future of Simulation

The final plenary session explored communication, educational design, artificial intelligence, and large-scale innovation in simulation-based healthcare training.

Communication in Surgery and Team Performance Under Stress

This presentation focused on the central role of communication in surgical teams and its impact on safety and team effectiveness under high-pressure conditions.

A “traffic light” model of team performance was proposed, in which green reflects effective communication, orange suggests rising stress and a need for support, and red signals critical deterioration requiring immediate intervention.

Enhancing Anatomical Knowledge Through Echocardiography and Video-Based Learning

Brandon Bush presented a study comparing ultrasound-based learning with video-based teaching for cardiac anatomy among medical students.

Both methods resulted in similar gains in anatomical knowledge, although ultrasound-based learning was associated with greater cognitive load as well as stronger self-efficacy and motivation.

AI and Simulation-Based Learning: Mind the Gap!

Marco Mezzina examined how artificial intelligence and simulation-based learning can be combined to support surgical training and automated assessment.

He argued that simulation environments offer a promising solution to the shortage of high-quality annotated surgical data by generating structured, privacy-preserving datasets.

Exploring Dutch Simulation Innovations in Healthcare

Uli Strauch presented a national Dutch initiative aimed at advancing simulation and innovation in healthcare education through more connected and flexible educational systems.

NASCE Annual Meeting 2026

Per Stokke introduced the upcoming NASCE Annual Meeting 2026, which will take place in Trondheim, Norway.

He outlined several innovations planned for the next edition, including digital platforms for pre-course preparation, continuous assessment, learner progress tracking, and increased use of artificial intelligence in training.

Prize Announcement, Certification, and NASCE Business Meeting 2026

The closing session included a certification ceremony recognizing a new simulation center in Jordan, the first NASCE-accredited center in the region.

Several awards were presented, including prizes for sponsor engagement, the best poster presentations, and the best oral abstract. The best oral abstract award was granted for the study on proficiency-based progression in robotic prostatectomy using the Hugo system.

Closure

The NASCE Annual Meeting concluded thanks to all those involved in organizing the event, including the NASCE board and office, partner societies, sponsors, speakers, and the wider support teams working behind the scenes.

Participants were thanked for their active engagement throughout the conference and invited to reconvene at the next NASCE Annual Meeting in Trondheim, Norway.