



ATSSL

Annual Report 2019-20

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2019-20 HIGHLIGHTS

387
Sessions

11,942
Learner
Encounters

2,011
Session
Hours

81
User Groups

12
Staff

\$1,278,751
Operating
Budget

ABOUT THE ATSSL

The ATSSL is a state-of-the-art facility that allows medical trainees and practicing professionals the opportunity to acquire, practice and develop their skills in a safe learning environment. The facility opened in 2014, and offers a full complement of simulation modalities from human and cadaveric tissue procedural skills to theater-based simulation for all learners in pre-licensure and licensed health professional education in the University of Calgary (UCalgary) and Alberta Health Services (AHS). This includes medical students, postgraduate medical residents, practicing physicians, nursing students, nurses, and allied health professionals. In 2018, the ATSSL was granted accreditation as a Simulation Program from the Royal College of Physicians and Surgeons of Canada.

The facility is comprised of three separate labs: the Surgical Skills Simulation Laboratory (SSL), the Clinical Skills Simulation Laboratory (CSL), and the Special Procedures Laboratory (SPL). The 30,000+ square foot, state-of-the-art facility, can accommodate small and large groups of learners simultaneously, in parallel streams. The ATSSL also oversees operations of the UCalgary Body Donation Program (BDP), which coordinates the acceptance and preparation of generously donated bodies for the purposes of medical education in Southern Alberta.

The ATSSL fulfills its commitment to provide innovative and interdisciplinary simulation-based medical education, while improving outcomes of patient safety and quality of care. This is achieved by working with education and quality improvement partners in the UCalgary Cumming School of Medicine (CSM) and AHS to develop longitudinal curricula and address identified training priorities. The focus is on skills and knowledge acquisition, interprofessional training and team work, and a better understanding of patient safety threats, which results in more effective, confident, and safe medical and surgical professionals. ATSSL operations are integral to the CSM Mission of “Creating the Future of Health”.

VISION

Global leader in innovative simulated education and assessment for health professionals to improve patient outcomes.



MISSION

Design and facilitate individual and team-based simulation education for an inclusive community of diverse learners, offering a full complement of simulation modalities in a safe environment.

Effective design of appropriate quality simulation activities, incorporating a cost-effective, evidence-based approach.

Support research and scholarship into simulated education and assessment activities.

GOVERNANCE & ORGANIZATIONAL STRUCTURE

The ATSSL is governed by the Executive Steering Committee, which establishes the strategic direction for and is the decision making body of all operations and programming supported by the ATSSL. These responsibilities include facilitation of collaborations between ATSSL, AHS, other Faculties at the University of Calgary and external stakeholders in education and simulation.

The ATSSL was jointly accountable to UCalgary and AHS prior to April 1, 2019. The Memorandum of Understanding between UCalgary and AHS expired as of this date, and UCalgary subsequently assumed responsibility for all operations.

The ATSSL is led by Medical Director, Dr. Marcia Clark, who reports to the Dean's designate (CSM). The Operations Manager, George Mulvey, reports to the CSM Senior Associate Dean Education, Dr. Beverly Adams.

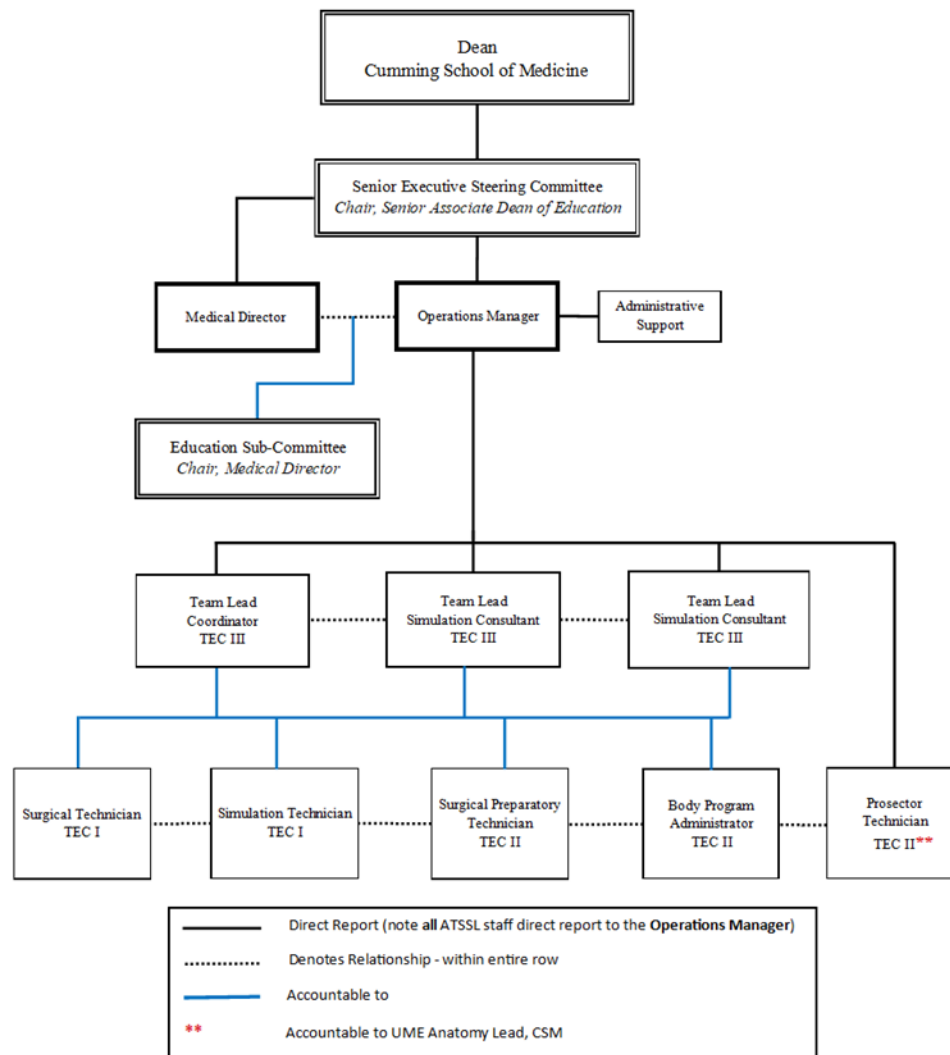
Executive Steering Committee

Dr. Beverly Adams, Senior Assoc Dean Education, CSM

Rose Yu, Senior Director, CSM

Dr. Marcia Clark, Medical Director, ATSSL

George Mulvey, Operations Manager, ATSSL



ATSSL TEAM

MEDICAL DIRECTOR (since 2015)

Dr. Marcia Clark holds a UCalgary clinical faculty appointment and is a member of the AHS medical staff. She is the Vice-Chair of Surgical Foundations at the Royal College of Physicians and Surgeons of Canada (RCPSC) helping to frame and implement Competency Based Medical Education in Surgery across Canada.

MANAGER (since 2014)

George Mulvey is responsible for overseeing all aspects of ATSSL including managing the human and physical resources, operational planning, financial management and reporting, compliance with Occupational Health and Safety, Biosafety and Medicolegal Standards, as well as monitoring, summarizing and communicating operations of the ATSSL with stakeholders.

COORDINATOR (since 2014)

Heather Hill schedules, coordinates, oversees the preparation of, and manages the execution of activities in the laboratories. She collaboratively facilitates the design of simulation experiences to provide positive outcomes in patient safety, quality improvement, and cost containment. She has created unique training models, consistently used to develop learners' procedural skill mastery.

SIMULATION CONSULTANT (since 2015)

Irina Charania practiced as a Registered Respiratory Therapist at Foothills Medical Centre before joining the ATSSL. She provides clinical and academic leadership to the simulation program; coordinates, develops, prepares and executes simulation activities. She offers expertise in the field of interprofessional and interdisciplinary medical education.

SIMULATION CONSULTANT (since 2016)

Michèle Cowan provides technology support to facilitate communication and optimize processes for data management. She collaborates on national and international educational projects to facilitate the development of quality medical referral education and postgraduate medical simulation curriculum.

SIMULATION TECHNICIAN (since 2014)

Stephanie Jaunin oversees the operational design, policies, planning and support for the SSL. She upholds the day-to-day setup, maintenance and repair of the facility. She has developed and created hybridizing cadaveric animal tissues with dry models to improve fidelity. She has been instrumental in the improvements of the cadaveric standard operating procedures.

SIMULATION TECHNICIAN (since 2019)

Chris Bergeron provides daily support for the CSL. He prepares high fidelity manikins and task trainers for simulation-based educational sessions, schedules and coordinates sessions, and provides technical support to users. He previously worked for the Faculty of Veterinary Medicine as both an anatomy technician and pathology technician.

SENIOR PROSECTOR (since 2016)

Jolene McLeod primarily prepares cadaveric demonstration material to support the anatomy component of the UME program. She further develops material to sustain educational research initiatives and to supplement anatomical teaching for various residency user groups. She actively participates in the day-to-day operations of the SPL.

SIMULATION ASSISTANT TECHNICIAN (since 2020)

Tegan Barry assists with daily operations in the SSL and SPL. She prepares, generates and maintains teaching specimens for use by numerous programs. She also teaches anatomy to external health professional groups from the Southern Alberta Institute of Technology, Mount Royal University, and Bow Valley College.

BODY DONATION PROGRAM ADMINISTRATOR (since 2020)

Jamie Cowie provides professional administration of the CSM Body Donation Program. She handles donated cadaveric specimens for the purposes of embalming and preparing for use in medical educational programs, and organizes the internment ceremony every two years.

TECHNICAL CONSULTANT (since 2013)

Dan Dupperon provides direct technical support and expert counsel on all aspects of maintenance, technology and programming of components or interfaces used to support simulation-based education and equipment.

ADMINISTRATIVE ASSISTANT (since 2019)

Kevin Weir coordinates the administrative and reception functions of the ATSSL, providing administrative support for the ATSSL Manager and Medical Director, and some additional administrative support to the Body Donation Program and audiovisual support to the ATSSL team.

CONSULTANT (since 2017)

Gretchen Greer works with the ATSSL on an adhoc basis contributing to the annual report, accreditation, and other projects as needed. Her primary role in the CSM involves education quality improvement and scholarship.

FINANCIAL REPORT

The ATSSL is now funded solely by the Cumming School of Medicine, as well as by revenue generated from external users. In past years, AHS had provided some funding, however this was discontinued in 2019-20 as the MOU had expired. In 2019-20, the CSM provided an operating budget of \$907,387, and external revenue generated in the current and previous fiscal years provided the remaining \$371,364 to cover total expenses of \$1,278,751. Funds are utilized for staffing, equipment, materials supplies, warranties and preventive maintenance. Expenses have increased over the past two fiscal years, with increases in staffing and the amalgamation of the Special Procedures Lab into the ATSSL operations in 2018-19.

Learners from the core educational programs at UCalgary including Undergraduate Medical Education (UME), Postgraduate Medical Education (PGME), Bachelor of Health Sciences (BHSc), Graduate Science Education (GSE), as well as members of AHS clinical departments and programs are classified as 'internal users' and are not charged for access to the ATSSL. Internal users however are charged for supplies, and disposable and limited use items such as the lumbar puncture simulator replacement skins. Learners identified as external and industry clients are charged on a cost recovery basis, under a fee structure determined by the ATSSL Executive Steering Committee. External revenue is retained in separate UCalgary project accounts and used to support additional equipment maintenance/refurbishment and replacement and educational opportunities, including conference travel for staff.

CSM Funding
\$907,387

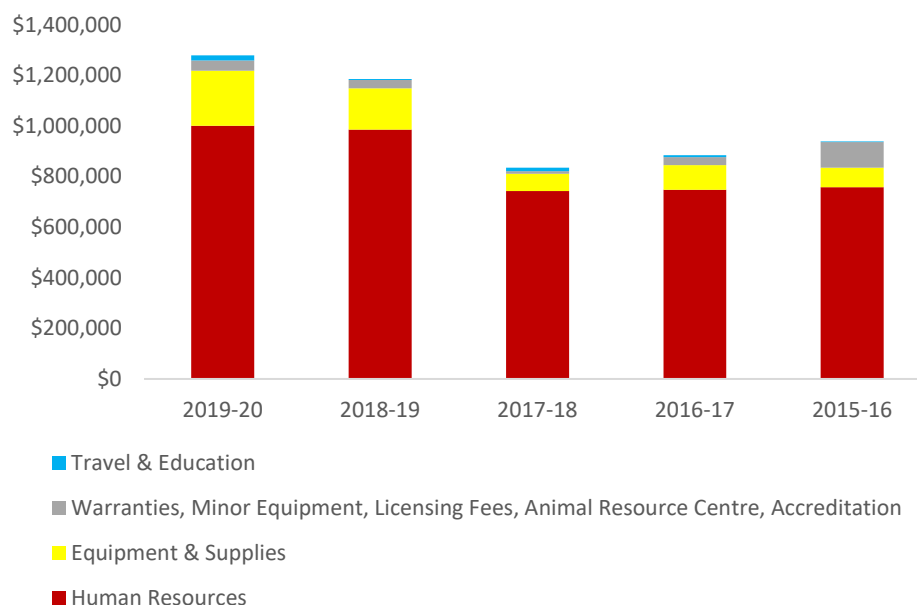
ATSSL External Revenue
\$371,364



EXPENSES

Human Resources	\$ 1,000,960
Equipment & Supplies	\$ 217,191
Warranties/Minor Equipment/Licensing & Accreditation Fees	\$ 40,679
Travel & Education	\$ 19,921
TOTAL 2019-20 EXPENSES	\$1,278,751

ATSSL Expenses 2015-2020



ATSSL FACILITIES & PROGRAMS

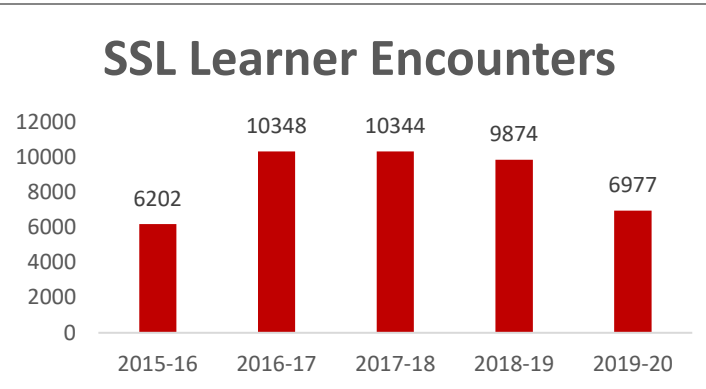
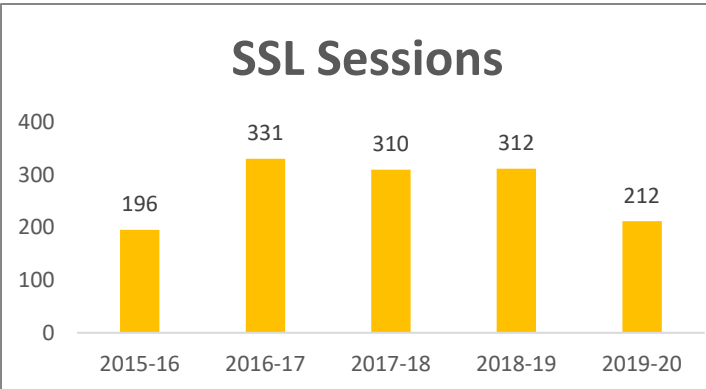
The ATSSL facilities are located in two connected buildings on the UCalgary Foothills Campus: the Surgical Skills Simulation Laboratory (SSL) is in the Health Research Innovation Centre and the Clinical Skills Simulation Laboratory (CSL) and Special Procedures Laboratory (SPL) are in the Health Sciences Centre. The ATSSL has two dedicated classrooms in the SSL area, capable of accommodating up to 30 learners each. Each classroom features: wireless internet access, lecture podium with laptop connections, LCD projector and in-ceiling speakers, videoconference capability, and remote viewing of SSL area.

SURGICAL SKILLS SIMULATION LABORATORY (SSL)

The SSL is a modern facility where a variety of surgical skills are practiced by a diverse group of medical health professionals. The space includes 20 simulated operating room stations fully equipped with scrub sinks, surgical beds and tables, overhead OR lighting, dual LED monitors and ceiling supply units. Four of the stations are specially outfitted with in-light cameras that allow real-time imaging to be remotely displayed throughout the lab and classrooms. The SSL is designed to be multifunctional and offers a variety of configurations to accommodate any group size. The area can be used as one large space or divided into two or four smaller spaces allowing for multiple education sessions to occur at once. The ATSSL is focused on user safety and is equipped with a fully functional reprocessing area to clean and sterilize instruments onsite.



In 2019-20, the SSL hosted **212 sessions** comprised of **6,977 learner encounters**. These totals are lower than in past years, however this does not reflect a decrease in overall activity. The ATSSL has increased the number of complex sessions, and data are now collected in a different manner. The majority (63%) of learners were from UME, followed by PGME (19%), AHS (7%), other external learners (7%), and other UCalgary learners (4%). It should be noted that for every 1 hour of active lab session time (**955 hours in 2019-20**), approximately 3 hours of ATSSL operating staff hours are required to ensure that quality of design, preparation, implementation and facilitation of sessions are maintained.



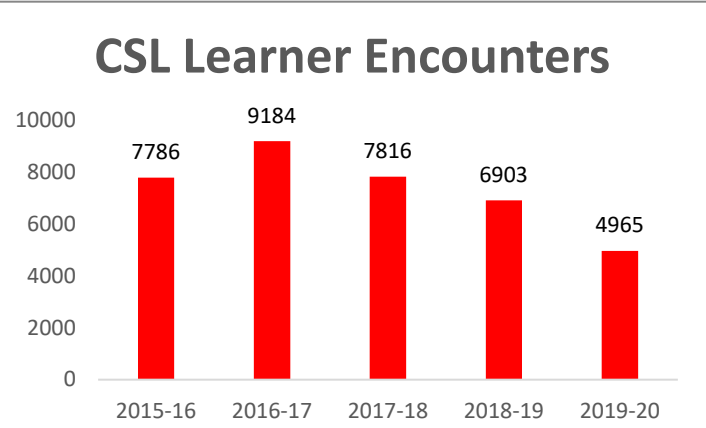
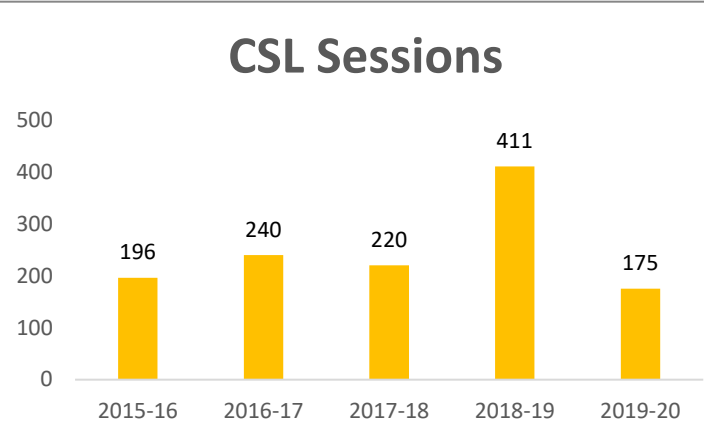
CLINICAL SKILLS SIMULATION LABORATORY (CSL)



The CSL is a multi-disciplinary, modular, medical simulation facility where learners use simulators to enhance technical skills, patient safety and learner safety. Simulators are tools that include a variety of task trainers, computerized manikins, and standardized patients. Using a variety of simulation resources from custom developed task trainers, learners are able to engage in experiential learning opportunities intended to foster knowledge consolidation and reflection.

The CSL has the capacity to accommodate 160 learners at any one time, allowing for numerous groups to work independently within functional spaces permitting private debriefing or conference-like presentations. This includes 4 dedicated simulation suites with control rooms and a large modular space that can be sub-divided into 8 separate pods with a capacity for up to 12-15 learners in each.

In 2019-20, the CSL hosted **175 sessions** comprised of **4,965 learners**. As with the SSL, the numbers are lower than in past years, however this does not indicate decreased activity. The number of complex sessions has increased, and data are now collected differently than in the past. The majority (64%) of learners were from UME, followed by PGME (24%), AHS (7%), other external learners (4%), and other UCalgary learners (1%). Similar to the SSL, every 1 hour of active lab session time (**1,056 hours in 2019-20**) requires approximately 3 hours of ATSSL operating staff hours to ensure that quality of design, preparation, implementation and facilitation of sessions are continuously upheld.



SPECIAL PROCEDURES LABORATORY (SPL)

The SPL is a specialty lab that provides a unique environment for education with an emphasis in anatomical sciences, including developmental biology, gross anatomy, and neurobiology. The primary focus is medical education in the structure and function of the human body using preserved, embalmed and plastinated human cadaveric prosections, plastic models and a 3D atlas. The lab includes a large area dedicated as a gross anatomy teaching laboratory, cadaver procurement and preparation facility. The SPL has space to accommodate several small groups of up to 30 to observe demonstrations and practice procedures.

The SPL experience is available to staff, residents, medical students and specialty groups granted select access. The lab allows learners to develop their dissection skills as it relates to their surgical and clinical practices. SPL promotes the development of both procedural skills and the conceptual understanding of human anatomy.

Gross Anatomy review sessions are offered by the ATSSL in collaboration with the SPL. These sessions are delivered by qualified anatomists using prosected human cadavers. This invaluable experience allows for learners to review musculoskeletal, cranial and visceral anatomy pertinent to their curriculum. This learning experience can only occur due to the generosity of the individuals and their families who have donated their bodies through the UCalgary Body Donation Program. Anatomical donations are provided the utmost dignity and respect.

COVID-19 RESPONSE

Learning sessions scheduled in the labs during the last two weeks of March 2020 were cancelled due to COVID-19, which allowed the ATSSL to create *COVID-19 Adaptation Guidelines and Rules*, and to prepare the labs for sessions during the pandemic.

In mid-2020, ATSSL, in collaboration with other CSM departments, developed and provided timely PPE training, preparing healthcare providers to care for patients who require droplet and contact isolation on medical admission units in Calgary Zone. The training incorporates multiple instructional strategies and reaches high learning efficiency through quality simulation.

STAY SAFE DURING YOUR SIMULATION

DO NOT ATTEND IF YOU HAVE ANY COVID-19 SYMPTOMS

Physical Distancing

Space between all attendees is critical to reduce the spread of infectious diseases.

Limit the number of facilitators & participants in the space at a time

Maintain 2m distancing; brief simulation exchanges are an exception

Do not bring personal items into the space, if not required for the activity

COVID-19 ADAPTATIONS

ATSSL Designs for simulation curricula with appropriate protection

Ensuring Cleanliness

Cleaning and disinfecting high-touch and/or shared surfaces.

Increase frequency of cleaning of all occupied spaces

IPC approved hard-surface disinfectants to be used on all touch-points

Communal items must be easily cleaned

Efficiency & Cost

Design curriculum to ensure safety for all. Be efficient, prudent and practical with consideration of simulation budgets.

Limit # of participants; time between groups to allow for disinfection of space and equipment

Book appropriate equipment to allow for disinfection of space and equipment

Only use essential equipment to limit spread of infection

WASH HANDS FREQUENTLY


USE HAND SANITIZER AFTER EACH SIM OR HANDLING OF ANY ITEMS

Sources of Information

- [ATSL Personal Protective Equipment](#)
- [COVID-19 – Toronto IPC Recommendations](#)
- [Infection Guide for Disinfection in Simulation – Infection Control Society of Canada](#)
- [Infection & Control Society of Canada](#)

<https://cumming.ucalgary.ca/atssl/>

stay safe during your simulation



With COVID-19 in our community it's important to design a simulation curriculum with appropriate protection. **ATSSL COVID ADAPTATION GUIDELINES** give you the security to help keep you safe during your simulation activities and reduce any risk of infection.

ATSSL COVID ADAPTATION GUIDELINES

These guidelines have been developed to support ATSSL in reducing the risk and transmission of COVID-19 among learners, facilitators and employees.

This document outlines the criteria that should be addressed in simulation curriculum development in response to the COVID pandemic.

All users are expected to review and implement these guidelines to their simulation design prior to booking the activity in the ATSSL.

All bookings will be considered on a case-by-case basis.

The guidelines set forth are subject to change at anytime as a result of recommendations from the Cumming School of Medicine (CSM), Infection Prevention and Control (IPC) and/or Alberta Health Services (AHS), as well as PPE limitations, or at the discretion of the ATSSL staff.

***DO NOT COME TO THE ATSSL
IF YOU ARE SICK OR HAVE ANY SYMPTOMS OF COVID-19***

BODY DONATION PROGRAM

The learning experiences in the SPL can only occur due to the generosity of the individuals and their families who have donated their bodies. The University of Calgary Body Donation Program (BDP) coordinates the acceptance and preparation of donated bodies for the purposes of medical education. The generosity of Albertans wishing to leave a legacy following their death through the donation of their bodies is greatly appreciated and contributes to the education and ongoing professional development of healthcare practitioners. Donations facilitate the development of proficient clinical skills and surgical techniques, and provide experience beyond task trainers and manikins.



The program accepts 60-70 donors each year, and there are over 10,000 individuals registered with the program who have indicated an [intent to donate](#). All bodies are treated with the utmost respect and appreciation, and we actively teach and practice empathy for all anatomical donations. Every two years, the CSM organizes a graveside commemorative service for the family members and friends of those who have chosen to donate their bodies for medical study. The location of the burial site for the cremated remains is located in Queen's Park Cemetery.

For more information, visit: <https://cumming.ucalgary.ca/body-donation-program>

Importance of Clinical Grade Cadavers for Airway Management Education

Clinical grade cadavers are embalmed using a technique that allows for realistic airway management conditions, the tissues maintain their elasticity and compliance as well as having natural texture (4).

Traditionally novices have acquired airway management techniques in anesthetized patients undergoing surgery (1,2). For skills maintenance the practicing physician has limited opportunity to attend the OR and practice intubations. The practice of airway management in the OR is limited by lack of access, schedules, and the abundance of learners. More commonly experienced providers and novices alike utilize plastic task trainer mannequins to develop and maintain their skills as they are more accessible and cost effective.

These plastic manikins do not realistically reflect patients' airway anatomy, compliance and appearance (3). The use of clinical grade cadavers for airway management is important given the fact that no single manikin can provide realistic, reinforcing conditions for BVM, optimal laryngoscopy (head lift, external laryngeal manipulation) bougie use and accept an array of supraglottic airways (5).

Change, adaption, and ultimately improvement of a psychomotor skill is dependent on having accurate sensory information that must be perceived and interpreted by the learner, these feedback loops may illicit adaptive responses rapidly (5,6,7). There is no higher fidelity simulation than using the human body as a medium for learning (4), producing accurate, real sensory input from our peripheral receptors to the brain and back, to elicit an adaptive, appropriate motor response that is essential for psychomotor learning.

In multiple studies of anesthesiologists, it was determined that compared to plastic manikins, the clinical grade cadavers were better suited for facemask ventilation and provided a more realistic environment for laryngoscopy and tracheal intubation (3,9). There is limited translational evidence to support clinical grade cadavers as simulation tools. Recently a study found that after a short training session using modified cadavers, novice critical care fellows achieved POGO scores similar to their expert instructors and that success rates of clinical intubations were favourable in the wake of this training (8).

The course directors for the Difficult Airway Management course evaluated the current airway evidence regarding the benefits of utilizing clinical grade cadavers as simulation tools for airway education. The addition of the cadaver station to the course occurred in December 2018, and three iterations of the course have been delivered utilizing cadavers.

- Dr. Margaret McGillivray

USER EXPERIENCE

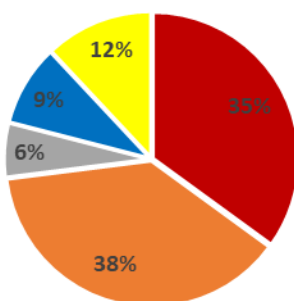
USAGE BY PROGRAM

The ATSSL hosted a total of 387 sessions across the SSL (55%) and CSL (45%) in 2019-20. This included 11,942 learner encounters (58% in the SSL, 42% in the CSL). Although the number of sessions and learners has decreased from past years, the complexity of the learning sessions has increased and the labs operate at capacity.

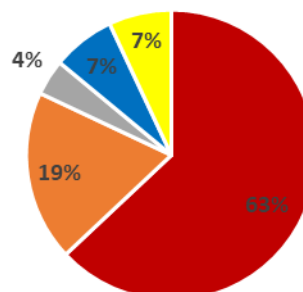
Session hours in the CSL and SSL totaled 2,011, and for every 1 hour of active lab session time, approximately 3 hours of ATSSL operating staff hours are required to ensure quality of design, preparation, implementation and facilitation of sessions are continuously upheld to assure alignment with the [ATSSL's Vision and Mission](#). The resource requirements for the research planning, development and evaluation of activities/sessions in the ATSSL are not aggregated into the activity report hours.

The majority of the sessions and learning encounters were from the UME and PGME programs. The number of sessions for each program are comparable between the SSL (UME = 75, PGME = 80) and CSL (UME = 83, PGME = 55), however UME accounts for 64% of the total ATSSL learner encounters vs. 21% for PGME, due in part to the large class size (up to 165) in each UME session.

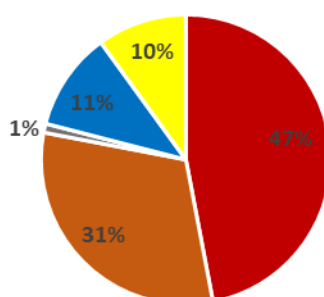
SSL Sessions



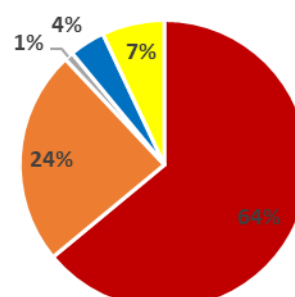
SSL Learner Encounters



CSL Sessions



CSL Learner Encounters



■ UME ■ PGME ■ Other UCalgary ■ External & Industry ■ AHS

Other users of the labs in 2019-20 included CSM programs such as the Indigenous Health Program, Innovation 4 Health, and the Alberta International Medical Graduates program. Users external to the CSM included the Southern Alberta Organ & Tissue Donation Program, Student Run Simulation Team, Mount Royal University, SAIT, Makami College, Robertson College, National Acute Critical Events Simulation, as well as industry.

USER FEEDBACK

Learners are the reason the ATSSL exists, and their feedback is integral to continuous quality improvement. A sampling of users was surveyed for their input into this report, and seven provided feedback, providing extensive and overwhelmingly positive comments regarding the staff, operations, and educational opportunities provided.

User groups noted the “unique space” and “unique experience” that the ATSSL provides with “cutting edge technology” and “high quality of instruction”. One group stated that “there is no other space that has the multi-functional teaching environment available”. The adaptability and professionalism of the staff were recognized as important components of the overall experience, with all seven educational leads reporting very positive feedback from the learners.



“The audience was comprised of IMGs who graduated from 22 different countries and came with a wide range of backgrounds, medical experience and knowledge. Your facilitation of these various components, along with your adaptability in addressing specific concerns of the diverse participants during your sessions aided in preparing them for entry into the Canadian medical environment. After the two weeks of Orientation sessions, the Externs overwhelmingly indicated that they felt better prepared to participate in the following eight weeks of patient care and clinical assessment.”

- Medical Director, AIMG

“I used ATSSL to conduct training sessions for new Community Paramedic (CP) recruits to the Mobile Integrated Health Program. These CPs serve the Calgary Zone and a few are serving Red Deer and Edmonton. They are also critical to the Complex Care Hub program that provides hospital at home care, offloading acute care and aimed at providing patient outcomes and satisfaction. The sessions involved didactic lectures, simulation and physical exams. The space is ideal for the type of training that the CPs need, and there is no other space that has the multi-functional teaching environment available.

- Medical Lead for Seniors, Palliative and Continuing Care in the Calgary Zone

The Alberta International Medical Graduates (AIMG) program shared results from recent learner evaluations from the Teamwork and Greg Price Story Session presented in the April Externship Orientation, which indicated that 92% agreed or strongly agreed that “this session should be retained for future use”. Additional results demonstrated that the externs’ confidence level on the topic had increased after attending the session.

“The addition of clinical grade cadavers to the Difficult Airway Management Course has been well received with consistently positive participant feedback. Comments included a request for the addition of more cadavers to the course. The Urgent Care Cadaver Airway Workshop was also very well received by participants. I received a communication from a participants expressing her extreme gratitude for the realistic airway experiences the course provided.”

- Course Director, Difficult Airway Management

“It is a unique experience that cannot be obtained elsewhere. The practical knowledge is invaluable to student understanding and recognizing organs/structures in anatomy and the circulatory system. For students early in their program, this is often the first exposure to cadaveric samples and they find the structures of human anatomy easier to comprehend with this hands-on experience.”

- Program Coordinator, Funeral Education, Mount Royal University

CONTINUOUS QUALITY IMPROVEMENT

RCPSC ACCREDITATION

As an accredited Simulation Program of the Royal College of Physicians & Surgeons of Canada (RCPSC) since 2018, the ATSSL is required to demonstrate adherence to standards within the following domains: mission statement and governance, infrastructure, education, research, and patient safety and the healthcare system. This is a voluntary process, and the ATSSL joins over 20 other accredited national and international simulation labs that are recognized as leaders in simulation-based learning.

As part of the five year cycle, the ATSSL is required to provide interim reports to the RCPSC regarding accreditation standards for which partial (rather than full) adherence was achieved during the accreditation review. Although full adherence to all of the 31 standards is not required in order to maintain accreditation, continuous quality improvement is considered to be a cornerstone of the accreditation process and accredited facilities need to demonstrate progression regarding standards with less than full adherence. The ATSSL is fully adherent to 20 standards, and an update is required in May 2020 on the remaining 11 standards for which the ATSSL is partially adherent.

FACETS PROGRAM

The ATSSL partners with the RCPSC to offer a customized Facilitator Education Training in Simulation (FACETS) course to those associated with a UCalgary Postgraduate Medical Education or Continuing Professional Development program. This training which is grounded in medical education theory, introduces current healthcare providers and educators to the foundational principles of simulation based education. The delivery of the theoretical foundation of the course is through the RCPSC Simulation Educator Training pre-course (pre-SET) eLearning modules. This allows the in-person workshop time to be fully dedicated to the discussion of theoretical principles and their contextual application as part of specific projects.

ATSSL offers this program as a specially booked, tailored learning experience. Approximately 8-10 participants attend each FACETS course. More than 100 individuals have completed it to date.

DASH RATER TRAINING WORKSHOP

In September 2019, ATSSL sponsored two individuals to complete the online Debriefing Assessment for Simulation in Healthcare (DASH) Rater Training Workshop. The workshop is designed to assist in evaluating and developing debriefing skills, which can facilitate deeper levels of learning and increased transfer to clinical practice.

These individuals agreed to assist in providing peer-feedback to our users when available. The implementation of their services will be offered to all new users of the ATSSL facilities as of July 2020, including participants in the ATSSL Facilitator Education Training in Simulation (FACETS) program. There are plans for two ATSSL staff members to complete the DASH workshop in 2020.

COURSE EVALUATIONS

The ATSSL reviews individual course evaluations as part of its CQI process. The ATSSL on-line generic course evaluation is sent out to all users who do not administer their own evaluation. If they identify as administering their own evaluation, the ATSSL Administrator follows up and requests a summary evaluation of the course. The ATSSL staff review course evaluations, specifically looking for the alignment between evaluation results and session objectives. Courses developed in collaboration with ATSSL staff are regularly updated when evaluation results indicate that intended objectives have not been completely addressed, and changes have predominantly been made in teaching approaches and content. No evaluation data to date has been identified which would warrant a change to objectives.

EVENTS & INITIATIVES

EVENTS

The ATSSL hosted a number of international conferences in 2019-20:

Simulated Trauma and Resuscitation Team Trauma (STARTT)

The STARTT course builds on the Advanced Trauma Life Support (ATLS) course, focused on developing effective and efficient trauma teams. The course focuses on crisis resource management (CRM) training in order to teach participants how to effectively function as members of a multidisciplinary trauma team. Participants formed teams consisting of physicians, nurses, respiratory therapists and EMS who worked together to manage trauma patients through a series of high fidelity simulation-based scenarios. Each simulation was followed by an extensive debriefing session led by experienced trauma team leaders, and the day concluded with a mass casualty simulation. There were 24 participants (MDs, residents, RNs, RRTs and Physician Assistants) from across Canada, and the course was extremely well-received by participants.

Advanced Surgical Skills for Exposure in Trauma (ASSET)

This one-day cadaver-based course follows a modular, body region approach focusing on five key anatomic areas: neck, chest, abdomen and pelvis, and upper and lower extremities. Each section begins with a short, case-based overview, followed by hands-on exposure performed by students under the guidance of faculty. The student-to-faculty ratio is low, allowing extensive faculty guidance and interaction with students. The students assess their ability to perform each exposure independently and are evaluated on knowledge and technical skills. The 8-hour course was delivered to 20 PGY-5(+) residents and fellows in general surgery, trauma, critical care, thoracic surgery, cardiac surgery, vascular surgery, plastic surgery, otolaryngology, and pediatric surgery, and feedback was very positive.

National Acute Critical Events Simulation (NACES)

This Royal College of Physicians & Surgeons of Canada course provides an introduction to the concepts of crisis resource management, approach strategies and practical skills required in early resuscitation of critically ill patients. There were 60 new critical care fellows from across Canada in attendance, as well as over 20 national faculty and 20 local RNs and RTs who volunteered as confederates. Feedback from the RCPSC, faculty and participants was overwhelmingly positive.

INITIATIVES

Quality Referral (QuRE) Commitment

The ATSSL provides ongoing support to the QuRE workshop development and deployment to improve the quality of the consultation/referral process. The QuRE Working Group aims to provide practical resources for physicians and surgeons to improve the clarity and timeliness of consultation/referral requests and responses. The QuRE Working Group, a collaboration between AHS, the UCalgary and the University of Alberta, identified key components of a quality consultation and referral. A two-sided pocket checklist card was developed as a reference tool, providing best-evidence criteria for both the requesting and responding physicians. This checklist card has been trialed and tested by family physicians and consultants/specialists, and modified based on feedback. It has since been the focus of educational materials, workshops and scientific presentations provincially, nationally and internationally.



Calgary Interprofessional Health Education Collaborative

The Calgary Interprofessional Health Education Collaborative is responsible for actively collaborating to develop and strengthen interprofessional education (IPE) opportunities for undergraduate students in health care related faculties in educational institutions in Calgary. ATSSL Simulation Consultant, Irina Charania, has been an active member since its inception and commits approximately 10 hours per month of consultant time to participate with the committee and relevant IPE simulation curriculum development initiatives/working groups. She has contributed to the development of 39 courses and simulations since 2018.

Greg's Wings

The ATSSL has continued its active involvement in the Greg's Wings Teamwork Training project. Funding has been secured for dedicated support to be provided in the form of curriculum development and delivery by an ATSSL Simulation Consultant. Irina Charania has taken on this role, and in collaboration with the rest of the Greg's Wings team – Drs Kristin Fraser, Ward Flemons, Ian Wishart, and the Price Family, has developed the Teamwork Training 201 Train-the-Trainer Workshop.



This workshop was piloted in June 2019 in Red Deer, Alberta. Attendees represented a cross section of healthcare education and quality improvement professionals from a variety of educational institutions (UCalgary, Red Deer College, University of Alberta, Northern Alberta Institute of Technology) and AHS. Since the initial pilot, the workshop has been delivered an additional 4 times (3 in Calgary, and 1 in Lethbridge). Following the workshop, participants collaborate with Irina in the development of training programs integrating the Greg's Wings teamwork training tools and materials in situationally appropriate ways. Programs currently under development are focusing on Transitions in Patient Care (AHS Primary Care Initiative), Teamwork and Advocacy training as part of Residency Orientation (UCalgary PGME), teamwork training for primary care clinics as part of Family Medicine Residency (UCalgary), and Primary Care Network Teamwork training (Lethbridge Mosaic PCN). Irina has also helped with the integration of Greg's Wings materials in the UCalgary PGME Patient Safety and Quality Improvement Workshops, and was an invited co-facilitator in the December 2019 and May 2020 offerings.

Precision in Health Professions Education Scholarship (PiHPES)

ATSSL participated in the CSM Precision in Health Professions Education Scholarship (PiHPES) project of exploration of the problems of trying to apply a big data approach to learning analytics to medical schools and health professional education. ATSSL, an educational program in the CSM, contributed data to PiHPES collection of information on systems that hold educational data (eg. databases, spreadsheets, etc) in an effort to make better use of educational data collected across the programs. The scope of PiHPES includes the structure of the systems and the types of data, rather than the actual data/records. The project is funded and supported by Strategic Education Council.

RESEARCH & SCHOLARSHIP

ATSSL strives to adhere to best practices through engagement in research and development in the field of simulation. It is a RCPSC accreditation requirement that “the program be engaged in, and contribute to, the larger community of research in health professions education that advances the field”. This is achieved by initiating research internally, much of which is generated from the Simulation Consultants and the Medical Director. However, the ATSSL also supports and informs the research generated by external researchers.

All researcher requests are required to complete the [Booking Request Form](#). Specific requirements are reviewed by ATSSL staff and if deemed appropriate, requests may be put forth to the ATSSL Education Sub-Committee. All research is reviewed by the UCalgary Conjoint Health Research Ethics Board as well. The following are research studies that involved the ATSSL in 2019-20:

Research Study	Primary Investigator	Research Dates
EDU RAPID US-Guided Femoral Nerve Block Training Session	Andrew McRae	2018-2020
Quantifying In Vivo Cervical Spine Kinematics and the Influence of Cervical Total Disc Arthroplasty	Ganesh Swami	2018-2020
In vivo cadaveric analysis of volar tilt correction using a kickstand screw technique in volar plate fixation for distal radius fractures	Peter Longino	2019-2020
Enhancing Longitudinal Analysis of Advanced Bone Imaging and Finite Element Predicted Bone Strength	Steven K. Boyd	2020
Dual fluoroscopy for in-vivo analysis of the 3D kinematics of cervical and lumbar degeneration	G. Swamy	2019
Establishing an Imaging Protocol for Dynamic Computed Tomography Scans of the Trapeziometacarpal Joint	Sarah Manske	2020-2022
The Effect of Fiber Wire on Tendon Strength and Attenuation: A Cadaveric Study	Justin Yeung	2020
Evaluation of PPE Course	Ghazwan Altabbaa	2020

Impact of a Team Situational Awareness Global Assessment Tool (TSAGAT) for Interprofessional Obstetrical Simulation

Our interprofessional research group which includes obstetricians, anesthesiologists, nurses and respiratory therapists is investigating situational awareness in obstetrical crises, as well as the impact of simulation on participants' situational awareness in actual clinical scenarios. Using the SAGAT (essentially, freezing a simulation scenario to assess participants' current understanding of the simulated situation), along with discussion during the post-simulation debrief, we hope to both assess and improve situational awareness in obstetrical teams. A run-through in the ATSSL has helped to determine the optimal timing of the freezes/questions during the simulation, as well as to ensure that the questions embedded in the SAGAT are meaningful and appropriate. This will help us to run our actual study simulations more efficiently and effectively, and to ensure that we use SAGAT questions that provide more robust data than if we had not tested them prior to running the participants through the scenarios. The facilities, equipment and staff support at the ATSSL are consistently excellent. The ATSSL is an incredible resource in this type of research.



- **Dr. Julia Haber, Principal Investigator**

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