On the cover: The OFPS is proud to be a host of the 21st Triennial Meeting of the International Association of Forensic Sciences in Toronto in August 2017.
This has been a busy year! In addition to our usual core duties of performing medicolegal autopsies, testifying in court and teaching forensic pathology to residents, fellows and other learners, we have been busy with a once-in-a-lifetime opportunity: planning IAFS2017.

In 1969, Douglas Lucas, who was a forensic scientist and director of the Centre of Forensic Sciences, hosted the seventh Triennial Meeting of the International Association of Forensic Sciences (IAFS) here, in our great City of Toronto. Back then, Toronto was known as “Toronto the Good” and was home to only one professional sports team, the Toronto Maple Leafs. The CN Tower only existed in the imagination of architect John Andrews. Toronto was also home to the famous Yorkville Village, a bastion of hippies and bohemian clubs that were the launching pads for singers Joni Mitchell, Neil Young, Gordon Lightfoot and Carly Simon, to name a few.

Fast forward almost 50 years and we proudly support the Toronto FC, our Blue Jays, Raptors and the Leafs, no matter where they are in the standings. The CN Tower is no longer the world’s tallest free-standing structure and Yorkville Village is now home to some of the most expensive real estate in Canada and the Mink Mile shopping strip.

How things have changed.

Today, Toronto has grown into a great city recognized for its arts, culture, sports and diversity. It is also recognized for its commitment to science and research, so it is fitting that it houses the headquarters of the Ontario Forensic Pathology Service (OFPS).

It is a great honour to be able to host the 21st Triennial Meeting of the IAFS in 2017. As the current President of the IAFS, I have had the pleasure over the last three years of advancing the mission of the IAFS, which complements the institutional values and commitments of the OFPS. Both organizations promote the fair use of medical/scientific evidence to foster truth-seeking and justice, and to improve the health and well-being of societies around the world.

As planners of IAFS2017, we chose the theme Inter-Professional Collaboration in Forensic Science. This reflects the interest of the OFPS and our collaborators in promoting best practices in forensic science worldwide, through a multi-disciplinary approach. This theme also supports an important goal of IAFS 2017, which is to promote forensic capacity development in developing countries. Specifically, we focused on obtaining financial sponsorship and support to allow emerging young and mid-career forensic scientists from low and middle income countries to travel to Toronto and present their work to an international audience. This reflects the importance of creating a world-wide community of experts in forensic science to benefit our global community. In this way, the forensic sciences can be unified to:

- Support the rule of law
- Protect human rights
- Narrow the impunity gap that allows crimes against humanity, and
- Advance the ‘science’ in forensic science

Our goal is ambitious: to make Toronto a centre of forensic collaboration. The opportunity to host IAFS 2017 is an important step in realising that goal.

All members of the OFPS community and our multidisciplinary collaborators, including scientists, lawyers, police, jurists and academics, have graciously contributed to the creation of an exciting and stimulating agenda for IAFS2017. With two days of practical workshops hosted at our state-of-the-art Forensic Services and Coroner’s Complex in the north part of the city, and three days of scientific programming which includes, platform presentations and poster presentations in the heart of Toronto, the conference will be an unprecedented event in the forensic science calendar for 2017.
Our vision

The OFPS and the OCC share a vision, mission and values.

Cases and pediatric deaths.

“Complex” cases include homicides, criminally suspicious natural deaths and some accidents and suicides, while most deaths in Ontario are due to natural causes and do not require medicolegal investigation. However, deaths that are sudden and unexpected require investigation by a coroner. These include deaths from accidents, suicides, homicides, and sudden deaths from previously undiagnosed diseases.

Our mission

Our mission is to provide high quality death investigation services that support the administration of justice, the prevention of premature death, and is responsive to Ontario’s diverse needs.

Our values are:

• Integrity. We remember that the pursuit of truth, honesty and impartiality are the cornerstones of our work.
• Responsiveness. We embrace opportunities, change and innovation.
• Excellence. We constantly strive for best practice and best quality.
• Accountability. We recognize the importance of our work and will accept responsibility for our actions.
• Diversity. We have a diverse team with different backgrounds, professional training and skills.

The OFPS applies these core values by embracing an independent and evidence-based approach that emphasizes the importance of thinking objectively in pursuit of the truth. The OFPS is committed to service, research and teaching.

Our Legislation

The Coroners Act defines the roles and responsibilities of pathologists and coroners in death investigation and enhances the quality, organization and accountability of forensic pathology services. The Coroners Act:

• defines the OFPS as the unified system under which pathologists provide forensic pathology services, including autopsies
• defines the position of the Chief Forensic Pathologist as overseer of forensic pathology services
• defines the positions of the Deputy Chief Forensic Pathologist and pathologist
• requires a registry of pathologists accredited to perform medicolegal autopsies
• requires the Chief Forensic Pathologist to communicate with the College of Physicians and Surgeons of Ontario on any adverse findings related to competency and professionalism of a registered pathologist

Registered pathologists have legal authority under the Coroners Act to attend scenes and to order ancillary tests as required, pursuant to their duties.

Our Governance

The OFPS and the OCC are part of the Ministry of Community Safety and Correctional Services and are accountable to the Minister of Community Safety and Correctional Services, The Honourable Marie-France Lalonde. The Deputy Minister of Community Safety and Correctional Services, Matthew Torigian, provides direction on administrative matters.

The Death Investigation Oversight Council (DIOC) ensures that death investigation services are effective and accountable. As an independent advisory agency, DIOC provides oversight of the OFPS and OCC, administers a public complaints process, and provides advice and recommendations to the Chief Coroner and Chief Forensic Pathologist. The current Chair is The Honourable Joseph C.M. James.

Our Structure

Ontario Forensic Pathology Service (OFPS)

Under the Coroners Act, the Chief Forensic Pathologist administers and operates the OFPS. Specifically, the Chief Forensic Pathologist:

• supervises and directs pathologists in the provision of services
• conducts programs for the instruction of pathologists
• prepares, publishes and distributes a code of ethics
• maintains a register of pathologists authorized to provide services

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Provincial Forensic Pathology Unit (PFPU)

The forensic pathologists of the Provincial Forensic Pathology Unit (PFPU) perform approximately 2,700 mediolgal autopsies and 7,000 forensic autopsies each year.

The Provincial Forensic Pathology Unit (PFPU) is located in northwestern Toronto at the Centre of Forensic Sciences and Coroner’s Complex (CFSCC). The Centre of Forensic Sciences is a collaborative leadership for Ontario’s death investigation system.

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autopsies per year, mainly from the Greater Toronto Area. The PFPU, affiliated with the University of Toronto, is also the central referral facility for many complex autopsies from across the province, including homicides, skeletal remains and suspicious infant and child deaths. The Medical Director of the PFPU reports to the Chief Forensic Pathologist. Dr. Jayantha Herath is the Medical Director of the PFPU.

The operation of the PFPU includes professional and technical roles in addition to forensic pathologists. These include forensic anthropologists, pathologist assistants, technologists and imaging specialists, as well as administrative and management personnel.

Forensic Pathology Units

Forensic Pathology Units are located in university teaching hospitals in Hamilton, Kingston, London, Ottawa, Sault Ste. Marie and Sudbury. These units provide expertise in forensic pathology for approximately 2,600 routine and complex autopsies annually, including homicides and pediatric cases. The Ministry of Community Safety and Correctional Services, through the OPFS, provides funding to these units.

Complex forensic autopsies are performed by qualified forensic pathologists, most of whom work at a Forensic Pathology Unit or at the Provincial Forensic Pathology Unit in Toronto. Some non-suspicious pediatric autopsies are performed at the Hospital for Sick Children in Toronto and the Children’s Hospital of Eastern Ontario in Ottawa. Perinatal autopsies are also performed at Mount Sinai Hospital in Toronto. Occasionally, pediatric forensic cases from Northwestern Ontario are transferred to Winnipeg for autopsy by pathologists registered in Ontario.

Community Hospitals

Pathologists working in 22 community hospitals support the work of the OPFS by conducting routine medicolegal autopsies in their facilities on a fee-for-service basis.

Our Partners and Working Relationships

Our major partners are the OCC, municipal and provincial police agencies, the Office of the Fire Marshal and Emergency Management, the Special Investigations Unit (SIU), the Centre of Forensic Sciences and the criminal justice system.

The OPFS also collaborates with universities on research, education and training. Furthermore, the OPFS provides services to organizations outside Ontario such as Canada’s Department of National Defence.
The OFPS provides a range of services in support of the death investigation, justice and health care systems.

1. Pre-autopsy consultations
Forensic pathologists consult with Regional Supervising Coroners to determine the appropriate location for an autopsy based on the complexity of a case and the skills of local pathologists.

Forensic pathologists work with Regional Supervising Coroners to facilitate organ and tissue donation through the Trillium Gift of Life in appropriate cases, in accordance with the wishes of the deceased and the family of the deceased.

2. Scene visits
Pathologists attend scenes to gain necessary information as part of a complete autopsy. Some forensic pathologists have been appointed as Coroners. These Forensic Pathologist-Coroners perform coroner’s duties for suspicious deaths and homicides, including scene visits as well as certification of cause and manner of deaths.

In some cases, photographs, video recordings and other imaging techniques are used instead of the scene visit.

3. Autopsies
Pathologists conduct autopsies and observe, document and interpret findings to help determine cause of death. There are five steps to a medicolegal autopsy:

- review of case history, scene and circumstances
- external examination, including photographic documentation
- internal examination by dissection, including photographic documentation as indicated
- ancillary tests: may include imaging, histology, cardiovascular, neuropathology, anthropology and odontology consultations, toxicology, metabolic screening and DNA testing
- opinion and report writing

Most autopsies are performed under authority of an Ontario Coroner’s Warrant. Forensic pathologists in the OFPS also provide autopsy services to other jurisdictions like Nunavut, as well as to the Department of National Defence for military personnel who die outside of Canada.

4. Consultations and expert opinions
Forensic pathologists and other consultants:

- participate in case conferences with other death investigation partners
- assist in identification of unidentified remains and missing persons
- provide consultations and expert opinions on complicated and ‘cold’ cases from Ontario and other jurisdictions. These requests may come from police agencies, crown prosecutors, defence attorneys or the Criminal Conviction Review Group
- provide occasional consultations and expert opinions on injuries on living individuals to assist with investigations

5. Testimony in trials and other hearings
Forensic pathologists and other consultants testify as expert witnesses at coroner’s inquests, at all levels of court and at public inquiries. This contribution to the justice system is of the utmost importance to the public.

6. Collaboration with coroners
Forensic pathologists serve on OCC death review committees that have quality assurance and death prevention mandates:

- Maternal and Perinatal Death Review Committee
- Geriatric and Long-Term Care Review Committee
- Patient Safety Review Committee
- Paediatric Death Review Committee
- Deaths Under Five Committee

7. Special services
Special services are provided on request to other agencies, including international groups and non-governmental organizations. In cases of multiple fatalities, these services may include disaster victim identification or human rights death investigations.

Our Services

Administration and Operation of the OFPS

Our Plan 2: 2015

The OFPS has a joint five-year strategic plan with the OCC that sets out four priorities to guide the death investigation system in Ontario:

1. A sustainable and effectively resourced system: Provincial complement of highly qualified human resources, supported by modern processes, systems, infrastructure, and technology.
2. Effective, relevant and reliable services: System delivers effective and efficient investigation and certification of deaths, and high quality forensic medicine and autopsy services.
3. Leverage data, build knowledge and provide education: Robust data creates knowledge and drives education and innovation in death investigation and forensic medicine.
4. Improve the health and safety of Ontarians: Enhanced review mechanisms and stronger partnerships contribute to a safer and healthier Ontario.

The OFPS also has a supporting implementation plan to follow our successful start-up plan (Our Plan, 2009-2014) that responded to the Inquiry into Pediatric Forensic Pathology and amendments to the Coroners Act in 2009. The OFPS has addressed all the objectives outlined in our start-up plan to provide the basis for continued growth.

Our Plan 2 focuses on capacity development and sustainability, and establishes measurable objectives to implement the four strategic priorities of the OFPS/OCC Plan.

Highlights of Our Plan 2 include:

- adding resources across the province including the North
- addressing the needs of First Nations and remote communities
- enhancing the provision of autopsies using imaging modalities
- expanding the role of Forensic Pathologist-Coroners at Forensic Pathology Units and for broader case types
- identifying human remains that are persistently unidentified
- maintaining residency training programs in forensic pathology
- maintaining training programs for less developed countries
- maintaining educational activities for pathologist assistants, police, physicians, lawyers and other learners
- encouraging peer-reviewed publications and presentations
- impacting public health and safety through tissue donation, molecular autopsy, multiple fatality planning, family-consent autopsies.

Forensic Pathology Advisory Committee

The Forensic Pathology Advisory Committee provides advice to the Chief Forensic Pathologist regarding professional medicolegal autopsy practices. This committee includes the Directors of the Forensic Pathology Units, the President of the Ontario Association of Pathologists and the Chief Coroner.

During the reporting period, the committee convened once to discuss policy issues, including:

- problems with limited toxicology testing
- approach to Sudden Infant Death
- external examinations on hanging Cases by Category B pathologists

Forensic Services Advisory Committee

The Forensic Services Advisory Committee was created to strengthen the objectivity of the OFPS and to improve communication with key external stakeholders such as police, Crowns and defense attorneys, who are represented on the committee. The committee meets as required to provide advice to the Chief Forensic Pathologist on topics that advance the quality and independence of medicolegal autopsies.

During the reporting period, the committee did not meet.
Register of Pathologists

Under the Coroners Act, medicolegal autopsies may be performed only by pathologists who are appropriately credentialed and registered by the OFPS. On the basis of their qualifications, registered pathologists may be approved to perform:

- all medicolegal autopsies including homicide and criminally suspicious cases (Category A)
- routine cases only (Category B)
- non-suspicious pediatric cases only (Category C)

As of July 26, 2016, a total of 111 registered pathologists were active, including 39 Category A pathologists permitted to conduct all types of autopsies. These 39 pathologists are recognized as having additional experience, training and/or certification in forensic pathology.

The Credentialing Subcommittee of the Forensic Pathology Advisory Committee reviews applications and provides advice to the Chief Forensic Pathologist regarding acceptance and renewal to the register. Pathologists are registered for a five-year term after which their appointments are considered for renewal. The Quality Team assembles data for review by the Credentialing Subcommittee, including:

- case load, cumulative over five years and year-by-year
- turnaround time for post-mortem examination reports
- peer review history
- complaints, incident reports and critical incidents, and remediation by Chief Forensic Pathologist and by College of Physicians and Surgeons of Ontario (CPSO), where applicable

The OFPS Register is available publicly through the Ministry’s website (http://ontario.ca/c877).

Performance management of registered pathologists related to quality of medicolegal autopsies is the responsibility of the Chief Forensic Pathologist. When there is professional misconduct or incompetence, the Chief Forensic Pathologist is obligated by law to report the issue to the College of Physicians and Surgeons of Ontario.

Supervision and Direction of Pathologists

To promote consistent and high quality practices across Ontario and to assist registered pathologists in their work, the OFPS provides a Practice Manual and Toolkit, updated in 2014.

The Practice Manual includes the Code of Ethics, practice guidelines for medicolegal autopsies, and explanations of the peer review system and Register. Together, these documents provide the professional and policy foundation for the OFPS.

The Code of Ethics was adapted from the Forensic Pathology Section of the Canadian Association of Pathologists.

Pathology Information Management System (PIMS)

The OFPS uses the Pathology Information Management System (PIMS) to collect information about autopsies performed across Ontario. All registered pathologists contribute information to the system through the Post-mortem Examination (PME) record. This record, an electronic form used to capture high level data about autopsies, is completed and submitted to the OFPS directly after the autopsy. The record is reviewed daily by a senior forensic pathologist to ensure that autopsies are done according to guidelines. The collected information is also used to evaluate resources, as well as to provide statistics about performance and quality. PIMS, in conjunction with the PME record, facilitates accountability and the oversight of autopsies by the Chief Forensic Pathologist.

Caseload Statistics

Caseload statistics are derived from Post-mortem Examination Records submitted during the reporting period. Each OFPS case begins with a coroner’s request for an autopsy by warrant to a pathologist. Autopsies on homicides, criminally suspicious and pediatric cases, deaths involving firearms and routine (non-suspicious) autopsies are performed in Forensic Pathology Units by appropriately qualified forensic pathologists. Some non-suspicious (medical type) autopsies of children are performed at pediatric sites. Routine autopsies are conducted in community hospitals. Eighty-three per cent (83%) of all autopsies were performed in Forensic Pathology Units and pediatric sites, and 17% in community hospitals. Chart 1 shows the distribution of autopsies captured in the system by OCC investigative regions.

Chart 1: Distribution of Autopsies by OCC Investigative Region
Pediatric cases stratified by age group and case type are shown in Chart 3.

Chart 3: Pediatric Cases by Type and Age

In some cases, the decision is made to limit an autopsy to an external examination where sufficient information can be obtained from a limited examination. There were 326 such cases performed in Forensic Pathology Units and ten in community hospitals. Forensic pathologists at the PFPU rely on imaging technology to inform their decisions about limited autopsies.

Quality Management

The OFPS has a robust quality assurance program comprised of the following:

- Pathologist Register
- practice guidelines, including standardized reporting templates and forms
- consultation in difficult or challenging cases
- collection of standardized case information through the Post-mortem Examination record
- peer review of all autopsy reports on homicide, criminally suspicious and SIU cases, and complex pediatric cases (deaths under five) prior to report distribution
- audit of autopsy reports on routine cases
- peer review of courtroom testimony
- detection and follow-up of significant quality issues and critical incidents
- reporting of key performance indicators to clients and stakeholders
- tracking of complaints to ensure timely resolution and corrective action
- continuing medical education in forensic pathology to maintain specialist competence as required by the Royal College of Physicians and Surgeons of Canada
- address performance concerns

Peer Review of Autopsy Reports for Homicide, Criminally Suspicious, Pediatric and SIU Cases

There were 298 autopsy reports peer reviewed. On average, about 11 reviews were completed by each reviewing forensic pathologist. The average turnaround time for peer review was five days. The OFPS turnaround time standard for peer review is 10 working days.
Peer Review of Courtroom Testimony by Forensic Pathologists

Forensic pathologists who testify submit one transcript of courtroom testimony each year for review by another forensic pathologist.

Courtroom testimony is assessed for:
- accuracy and evidence-base
- professionalism and objectivity
- clear language
- presentation of limitations, uncertainties and alternate hypotheses

No problems have been identified in courtroom testimony reviewed to date.

Audit of Autopsy Reports for Routine Cases

Autopsy reports for routine cases are audited for administrative and technical accuracy by Directors of Forensic Pathology Units. Reports from community hospitals are audited by the Chief Forensic Pathologist or designate.

The administrative audit focuses on completeness and adherence to guidelines. All community hospital reports undergo administrative audit and ten per cent of routine autopsy reports from Forensic Pathology Units undergo this type of audit.

The technical audit focuses on the content of the report to ensure that the approach, conclusions and opinions derived from the evidence are reasonable.

A technical audit is done for all reports that fall into the following categories:
- cases with an undetermined cause of death
- non-traumatic and non-toxicologic deaths of individuals younger than 40 years old
- reports from pathologists performing fewer than 20 autopsies per year

Key Performance Indicators

Key performance indicators for autopsy reports such as submission compliance, completeness, turnaround time and validity are collected from the administrative and technical reviews and reported.

Table 1 shows the indicator, target outcome and overall performance for Forensic Pathology Unit and community hospital pathologists.

Table 1: Key Performance Indicators for Autopsy Reports

*Turnaround time may be influenced by case complexity and availability of ancillary testing

<table>
<thead>
<tr>
<th>Key Performance Indicators for Autopsy Reports</th>
<th>Target</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Compliance (PME Record)</td>
<td>100%</td>
<td>95% - approaching compliance</td>
</tr>
<tr>
<td>Completeness</td>
<td>95%</td>
<td>99% - good compliance</td>
</tr>
<tr>
<td>Consistency</td>
<td>95%</td>
<td>99% - good compliance</td>
</tr>
<tr>
<td>Turnaround Time</td>
<td>90 days</td>
<td>Average = 87 days - good compliance</td>
</tr>
<tr>
<td>Reports with Significant issues (Forensic Pathology Units)</td>
<td>≤ 2%</td>
<td>0% - good compliance</td>
</tr>
<tr>
<td>Reports with Significant issues (Community Hospitals)</td>
<td>≤ 2%</td>
<td>1.08% (14 amended reports requested out of 1292 audits) - good compliance</td>
</tr>
<tr>
<td>Critical Incidents</td>
<td>0</td>
<td>0 - good compliance</td>
</tr>
</tbody>
</table>

Chart 5 illustrates completeness of autopsy reports in accordance with practice guidelines during the period April 1 – March 31 shown by Administrative Audit.

**Chart 5: Completeness Measures as shown by Administrative Audit**

Chart 6 illustrates consistency of the content and opinion of autopsy reports as assessed by the reviewing pathologist during the period April 1 – March 31 of each year as shown by Technical Audit.

**Chart 6: Consistency Measures as shown by Technical Audit**

Pathologists in community hospitals are expected to follow the best practices set out in the Practice Manual. Pathologists are provided feedback from routine audits with the goal of improving report quality.

Note: community hospitals may use their own institution’s report templates if they include the required template fields.
Significant Issues

Significant issues include substantial errors, omissions and other deficiencies.

A critical incident is a significant issue that contributes to a serious error in a death investigation. All critical incidents are analyzed to determine root cause and corrective action.

If the reviewing forensic pathologist detects a significant issue during the technical review, feedback is provided to the case pathologist. In 2016 no significant issues were detected in routine case reports from Forensic Pathology Unit pathologists, while 1.08% of reports from community hospital pathologists had significant issues.

The purpose of quality assurance is to improve the quality of routine case reports from Forensic Pathology Unit pathologists. The longer turnaround time for forensic pathologists may be explained by the more complex nature of the autopsies performed.

Turnaround Time

Timeliness of autopsy reports is a key performance indicator. Turnaround time is influenced by case complexity, return of ancillary test results, pathologist workload and staffing levels. The OFPS policy regarding turnaround time is:

- ninety per cent of autopsy reports are to be completed within 90 days of the day of the post-mortem examination
- cases involving homicides, pediatric deaths, deaths in custody and those in which the coroner has requested that the report be prioritized (due to requests from family or other parties) are to be expedited as a matter of routine
- no more than 10 per cent of cases should be greater than six months old without a justifiable reason for delay (e.g., delays caused by molecular autopsy for chanelopath)

Clinical Forensic Medicine

At present, qualified expert opinions and testimony by forensic specialists are usually available only in cases of violent death. However, cases of serious assault with a surviving victim can often benefit from the review and interpretation of injuries by a forensic expert, and the expert’s opinion can be useful to the criminal justice system. Forensic pathologists consult by reviewing medical records and digital photographs.

Forensic Anthropology

Forensic anthropologists are experts in the study of skeletal remains in the medicolegal context. Forensic anthropologists make an important contribution to death investigations where the remains are skeletonized, burned, decomposed, mutilated or otherwise unrecognizable. Forensic anthropologists act as part of the death investigation team. They are the experts at determining whether found bones are human or non-human by examining digital photographs or the remains themselves. They help to plan for multiple fatality events and manage identification when they occur. They are also the experts who determine whether found remains are of recent forensic interest or are archaeological or historical in nature.

One full-time forensic anthropologist, Dr. Kathy Gruspier, works in the OFPS along with several fee-for-service consultants, Dr. Tracy Rogers, Dr. Mike Spence, Dr. Scott Fairgrieve, Mr. Greg Olson, and Ms. Renee Kosalka.

Since 2005, the OFPS has worked with the OCC, OPP and RCMP in identifying missing persons whose remains are discovered without their identity yet known. The OFPS works in conjunction with the local coroner’s office to conduct an autopsy and identification. The OFPS may also work with the OPP’s Missing Persons and Unidentified Bodies Unit to conduct an autopsy and identification. The OFPS may also work with the OPP’s Missing Persons and Unidentified Bodies Unit to conduct an autopsy and identification.

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F-Path: PFPU’s new, home-grown LIMS (Laboratory Information Management System)

The Provincial Forensic Pathology Unit has launched a web-based electronic information management system, to link all PFPU tasks. This system ensures quality, accuracy and confidentiality and includes case accession, tracking of procedures, testing and results, photograph storage, and body release. Future upgrades will enable report generation by pathologists and consultants.

Histology

Histology is the preparation of microscope slides from tissues obtained at autopsies for examination by a pathologist. The number of slides prepared for each case varies with the type of case and the pathologist’s preference.

Histology services are provided by laboratories at community hospitals and Forensic Pathology Units located in hospitals. At the Provincial Forensic Pathology Unit, two full-time histotechnologists are employed to process over 3,500 tissue specimens each month.

Toxicology

Toxicological analysis of post-mortem samples is performed by scientists at the Centre of Forensic Sciences (CFS). In many cases, pathologists rely on the results and interpretive notes provided by toxicologists in coming to an opinion about the cause of death.

During the reporting period, toxicological analysis was requested in approximately 3,600 death investigations. The average time to issue a toxicology report by the CFS was 43 days. In cases where toxicology was required, the autopsy reports were all issued within 90 days of receiving the toxicology reports.

Organ Retention

Much of our understanding of human disease has come from the examination of tissues and organs of deceased persons by pathologists. Pathologists may need to retain an organ for more detailed examination to determine the cause of death and/or whether other family members are at risk. For decades, retaining organs for testing after autopsy was standard practice, and this information was not always shared with bereaved families. Now, pathologists must seek approval to retain an organ. In addition, under Regulation 180 of the Coroners Act, families are routinely notified when an organ is retained and their wishes regarding final disposition of the organ are sought wherever possible.

To ensure transparency regarding past practices, the Chief Forensic Pathologist and Chief Coroner reached out to those who lost a family member in Ontario before June 14, 2010, resulting in a coroner’s investigation and autopsy.

Amendments to Regulation 180 that provide for a longer retention period and central storage of organs retained before June 14, 2010 were publicly announced in June 2013. Since 2015, historically retained organs are stored at the Forensic Services and Coroner’s Complex (FSCC).

Molecular Forensic Pathology

Many natural disease processes are now recognized to have a genetic underpinning. For a number of these conditions, characterization of the genetic mutations involved is becoming the standard of care in hospitals for living patients and is part of the movement towards targeted therapy and personalized medicine. The first significant manifestation of such a disease may be sudden and unexpected death. In the majority of individuals who die with an underlying genetic mutation, these conditions are first recognized and diagnosed following the autopsy.

Thus, particularly for young people, the identification of a genetic contribution to sudden death can have huge implications for the surviving family members as well as the health care system.

A large proportion of the cases where genetic disease has contributed to death involve the heart and blood vessels. The OFPS provides high quality cardiovascular pathology services to investigate sudden cardiac and vascular deaths. Cases that are likely to have an underlying genetic disease also undergo molecular autopsy. In relevant cases tissue or blood is obtained at the post-mortem examination and is processed to extract DNA, which is banked at the Provincial Forensic Pathology Unit in Toronto. When required, DNA may then be submitted for sequencing to identify relevant pathogenic mutations. With the results of a post-mortem examination and clinical investigation, DNA analysis can help define the underlying disease that caused death, facilitate screening in surviving family members and contribute prognostic information for affected relatives. The priority is to ensure families receive information regarding a potential genetic condition and options for referral.

In addition, there is a growing number of instances where unrecognized genetic disease likely played a role in a person’s death in the setting of incarceration in a penitentiary, interaction with Police or in the course of a criminal act. Under these circumstances, molecular autopsy can help provide answers to these challenging death investigations and contribute significantly to the criminal justice system and coronial inquiries.

Forensic Imaging

Pathologists at the Provincial Forensic Pathology Unit (PFPU) incorporate the findings of advanced post-mortem
imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) into their daily practice. Introduction of these techniques has resulted in targeted examinations, resulting in efficiencies and benefits to families.

Senior residents from the University of Toronto's Diagnostic Radiology Residency Program spend one month at the FFPU where they are integrated into daily service work. The residents learn about lethal injury and disease as well as changes in the body after death. They write reports on post-mortem CT and MRI scans, and are able to see pathologic lesions in a way that is not possible in the clinical setting.

The PFPU is conducting a pilot study to analyze a new process with respect to post-mortem imaging. Cases were previously scanned and autopsied on the same day, which may have resulted in missed opportunities for advanced imaging (e.g., MRI and CT angiography), targeted dissection, and teaching. During the pilot, bodies are being scanned and read on the day they arrive with autopsies scheduled for the following day. This permits incorporation of post-mortem imaging findings into discussions at morning rounds, which allow consensus decisions about targeted dissections, maximize the potential of magnetic resonance imaging, and augment use of technology to increase efficiency.

Tissue Recovery for Donation

The OFPS and OCC are committed to facilitating and increasing the availability of tissue for transplantation through the Trillium Gift of Life Network (TGLN). The FSCC houses a dedicated Tissue Recovery Suite that is used exclusively for obtaining donor tissues including corneas, heart valves, skin and bones. After consent by the family, tissues are recovered by trained staff from TGLN as well as the OCC and OFPS.

For the reporting period, tissues have been recovered at the FSCC in 32 cases. Of these, 17 were multi-tissue recoveries. In Ontario, it is often difficult for families to obtain answers about a loved one's death when a medicolegal death investigation is not required. In the past, forensic pathologists have occasionally performed family-consent autopsies on request.

On this basis, the OFPS has extended its pilot project with North York General Hospital and Michael Garron Hospital to include Humber River Hospital and Mackenzie Health to assess the need for, and the resources required to support such a service at the Provincial Forensic Pathology Unit. This service is offered in cases of adult deaths that do not require a coroner’s investigation and where the treating clinician or family have questions and the family consents to an autopsy.

Consent Autopsies

In Ontario, it is often difficult for families to obtain answers about a loved one's death when a medicolegal death investigation is not required. In the past, forensic pathologists have occasionally performed family-consent autopsies on request.

On this basis, the OFPS has extended its pilot project with North York General Hospital and Michael Garron Hospital to include Humber River Hospital and Mackenzie Health to assess the need for, and the resources required to support such a service at the Provincial Forensic Pathology Unit. This service is offered in cases of adult deaths that do not require a coroner’s investigation and where the treating clinician or family have questions and the family consents to an autopsy.

OFFS-Based Education

Annual Education Course for Coroners and Pathologists

This two-and-a-half day course is offered jointly by the OCC and OFPS each autumn. This meeting qualifies as continuing education for the Maintenance of Certification program of the Royal College of Physicians and Surgeons of Canada.

The 2016 course was held from November 16 – 18 and was attended by 28 registered pathologists.

The topics covered included:

- history of First Nations and Indigenous peoples
- recent advances in forensic neuropathology
- complex fatalities – fire investigation
- pathology of blast injuries and firearm injury pattern in suicides
- how to manage the hypertrophied heart

The Centre for Forensic Science and Medicine at the University of Toronto

The Centre for Forensic Science and Medicine (CFSM) at the University of Toronto (U of T) is dedicated to the advancement of teaching and research in the forensic disciplines at the interfaces of medicine, the law and social sciences. The CFSM aims to contribute to the development of knowledge in these fields by drawing together a diverse group of practitioners and scholars. Presently, the Chief Forensic Pathologist holds the position of Director of the CFSM. Many of the forensic pathologists working in the OFPS are faculty for the CFSM’s continuing educational programs.

The disciplines involved in the CFSM include law, forensic sciences, forensic pathology, forensic psychiatry and psychology, forensic anthropology, forensic odontology and forensic pediatrics. The CFSM is affiliated with the U of T’s postgraduate residency and fellowship training program in forensic pathology, the Faculties of Medicine and Law, and the Forensic Sciences Program.

Continuing Education Events

With funding support from the ministry, the CFSM hosts continuing education events that bring national and international experts to U of T to discuss topics in forensics. The courses are attended by academics, those working in forensic disciplines, other medical and legal professionals, and law enforcement practitioners. Since the last annual report, the following courses were offered:

- Sudden Death: SIDS, SADS & SUDEP (February 2016)
- Elder Abuse and Neglect (February 2017)
- Forensic Nursing (March 2017)
- Dr. Frederick Jaffe Memorial Lectureship

The CFSM created a special lecture series in memory of Dr. Frederick Jaffe, one of the first forensic pathologists in Canada. Dr. Jaffe authored a textbook, Guide to Pathological Evidence, which was used for many years by attorneys and judges. He was also the first director of a province-wide forensic medical service.

The most recent lecture on October 3, 2016, was given by Dr. Christopher Milroy, Professor, Department of Laboratory Medicine and Pathobiology, University of Ottawa, and Medical Director of the Eastern Ontario Regional Forensic Pathology Unit, Ontario Forensic Pathology Service. Dr. Milroy discussed "Forensic Pathology – Past, Present, Future."
IAFS 2017

The Ministry of Community Safety and Correctional Services is pleased to host the 21st Triennial Meeting of the International Association of Forensic Sciences (IAFS) in Toronto from August 21 - 25, 2017.

The IAFS is a not-for-profit association governed by a council made up of its past presidents. It is the only worldwide association of academics and practicing professionals from various disciplines in forensic science. Its objectives are to develop forensic sciences, assist forensic scientists and others to exchange scientific and technical information, and organize triennial meetings.

The theme of the IAFS 2017 conference is “International Collaboration in Forensic Science.” It is expected to attract delegates practicing in the disciplines of forensic pathology and death investigation, forensic sciences, policing, and the legal and judicial systems.

To support IAFS 2017 planning, including scientific content and logistics, the Executive Governance Committee is working closely with the Scientific Planning Committee, as well as a professional congress organizer, International Conference Services (ICS) Ltd. The Sheraton Centre Toronto Hotel will be the venue for IAFS 2017. Pre-conference workshops will be held at the Forensic Sciences and Coroner’s complex.

Plenary lectures will focus on:

- Forensic Issues in Human Migration
- Practicing Forensic Science in Challenging Environments: International Perspectives
- Major Case Management showcasing Ontario’s successful collaborative and multi-disciplinary approach to investigating high-profile and complex homicides

In addition, there will be five areas of special interest for invited speakers and oral presentations:

1. Miscarriages of justice and wrongful convictions
2. New forensic technologies, digital evidence and cybercrime
3. New drugs, new issues, new doping methods
4. Violence against women and vulnerable persons
5. Terrorism and armed conflict

As President of the IAFS for 2014-2017 and Chair of IAFS 2017, one of Dr. Pollanen’s goals is to raise awareness of the need for capacity development in the forensic sciences to support human rights and justice, particularly in low- and middle-income countries.

Visit the official website of the conference (www.iafstoronto2017.com).

Training Canadian Forensic Pathologists

The Provincial Forensic Pathology Unit (PFPU), in partnership with the Forensic Pathology Residency Training Program at University of Toronto (U of T) and with funding support from the Ministry of Health and Long-term Care, has the first training program in Canada leading to certification in forensic pathology by the Royal College of Physicians and Surgeons of Canada (RCPSC). Since 2008, 15 pathologists have completed training, 11 of whom are now working within the OPFS. One former trainee practices forensic pathology in Quebec. The Hamilton Forensic Pathology Unit also trains forensic pathology residents in partnership with McMaster University.

In July 2016, one new resident began training in forensic pathology in the U of T program:

Andrew S. Williams MD received his Doctor of Medicine from The University of Western Ontario in 2011. He completed his residency in Anatomical Pathology at Dalhousie University and passed the RCPSC examination in Anatomical Pathology in 2016.

Clinical Fellows in Forensic Medicine

We are committed to developing global forensic medicine and have outreach activities and training collaborations with Jamaica, the Middle East, Sri Lanka, Chile and soon, Zambia. Since 2007, eight international fellows have trained in forensic pathology at the PFPU. Since 2016, clinical fellows are eligible to write the Royal College of Physician and Surgeons of Canada examination in Forensic Pathology, through the Subspecialty Examination Affiliate Program.

Some trainees benefit from the G. Raymond Chang Forensic Pathology Fellowship through the University of Toronto’s Department of Laboratory Medicine and Pathobiology. This is the first fund in the world that enables young physicians from the developing world to train and ultimately strengthen forensic capacity in their own countries. This fellowship provides financial support to trainees whose countries may not be able to fund a year of training in Canada, particularly those from the West Indies.

The Raymond Chang Foundation is named for the late Toronto-based businessman and philanthropist who had a passion for adult education and was dedicated to improving opportunities where it was most needed. Born in Jamaica, Mr. Chang was a proud and active member of the Caribbean-Canadian community. He was appointed to the Order of Jamaica in 2011 and as an officer of the Order of Canada in 2014.

Raymond Chang understood the relevance of forensic pathology as a truth-seeking tool for justice. The fellowship is a legacy that lives on through the dedication of his children, Andrew Chang and Brigitte Chang-Addorios. Their generosity and shared vision has ensured a sustainable fellowship training program at the University of Toronto.

Our current fellows are:

Andrew S. Williams MD

Trudy-Ann Brown MBBS DM Pathology

She completed her residency in Anatomical Pathology at the University of the West Indies (UWI), Mona, Jamaica in 2008. She completed her residency in Anatomical Pathology at the UWI.
Natasha Richards MBBS DM Pathology received her MBBS (Bachelor of Medicine Bachelor of Surgery) degree at the University of the West Indies (UWI), Mona in 2009. She completed her Doctor of Medicine in Anatomical Pathology at UWI, Mona in November in 2015.

**Recruitment of Forensic Pathologists**

The capacity of the OFPS has been enhanced through the recent addition of talented new recruits:

- **Jane W. Turner MD PhD** has been appointed medical director of the Hamilton Forensic Pathology Unit. Dr. Turner received her medical degree from Saint Louis University School of Medicine and did her residency training in anatomic and clinical pathology at St. John’s Mercy Medical Center in Missouri. She completed her forensic pathology fellowship at Saint Louis University School of Medicine/City of St. Louis Medical Examiner’s Office. Dr. Turner is a diplomate of the American Board of Pathology in Anatomic, Clinical and Forensic Pathology. From 1998 to 2016, she was an assistant medical examiner for the City of St. Louis. She joined the staff as a forensic pathologist in Hamilton in 2016 and was appointed a professor in the Department of Pathology and Molecular Medicine at McMaster University.

- **Brett Danielson MD** received his Doctor of Medicine from the University of Manitoba in 2010. He completed his residency in anatomical pathology and forensic pathology at U of T and passed the RCPSC examination in Anatomical Pathology in 2015 and in Forensic Pathology in 2016. Dr. Danielson joined the Northeastern Regional Forensic Pathology Unit in Sudbury as a staff forensic pathologist in July 2016 to strengthen the OFPS’s service delivery to Northern Ontario.

- **Ingo von Both MD PhD** completed his residency in anatomical pathology at the University of Cologne, Germany, followed by a PhD. He came to Toronto in 2000, where he was a post-doctoral fellow at Mount Sinai Hospital and then a research associate at SickKids. He completed his residency in anatomical pathology in 2015 and in forensic pathology in 2016, both at U of T, passing the RCPSC examinations in those years. Dr. von Both joined the Provincial Forensic Pathology Unit at the Forensic Services and Coroner’s Complex in July 2016 to augment forensic pathology capacity in the Greater Toronto Area.

**Retirement of Dr. Chitra Rao**

Dr. Chitra Rao retired from the Hamilton (Gordon V. Torrance) Forensic Pathology Unit and McMaster University in 2016. She was the longest practicing female forensic pathologist in Ontario. Dr. Rao graduated from Darbhanga Medical College, Bihar, India in 1966. She completed a pathology residency in Bangalore, India in 1970, and did further residency training at University of Toronto in 1978, and at McMaster University from 1978 to 1980. She was a forensic pathologist in Hamilton from 1984 and medical director of the unit from 1993 to 2010. An associate professor of pathology at McMaster, Dr. Rao was programme director for general pathology from 1996 to 2004, coordinated post-graduate education for residents in forensic pathology and also taught medical students and other learners, including police.

Dr. Rao performed thousands of hospital and medicolegal autopsies including homicides and suspicious cases. She acted as a consultant for both the prosecution and defence, giving expert evidence at all levels of court in Ontario and Nova Scotia and providing opinions in a variety of cases, including child abuse cases, an area of special interest. She participated in many professional bodies, including the American Academy of Forensic Sciences and the Canadian Society of Forensic Sciences, where she was a board member and the chair of the medical section. Dr. Rao published numerous articles in peer reviewed journals and has been a member of various committees of the Office of the Chief Coroner.

**Forensic Pathology Units**

**Sault Ste. Marie Forensic Pathology Unit**

The Sault Ste. Marie Forensic Pathology Unit is led by the Medical Director, Dr. Michael D’Agostino. Approximately 100 autopsies were performed in 2016, with the support of a Category B pathologist, three pathologist assistants and hospital technical and administrative staff.

The unit teaches students from medical schools around the province, pathologist assistant students from Western University on an elective rotation, as well as police and Centre of Forensic Sciences staff.
Eastern Ontario Regional Forensic Pathology Unit
(Ottawa)

The Eastern Ontario Forensic Pathology Unit has four full-time forensic pathologists who performed just over 700 medicolegal autopsies in 2015/2016, as well as autopsies for the Chief Coroner for Nunavut. All forensic pathologists hold academic appointments at the University of Ottawa and teach in the Faculty of Law and to residents in Anatomical Pathology, as well as to residents at the University of Toronto.

Other activities of Ottawa forensic pathologists include:
- teaching to external partners, including the Canadian Police College
- presenting at provincial, national and international meetings, including the National Association of Medical Examiners (NAME), the American Academy of Forensic Sciences and the British Association in Forensic Medicine
- participating in academic and professional activities:
  - Dr. Parai is chair of the forensic pathology section of the Canadian Association of Pathologists (CAP) and the chair-elect of the Royal College Specialty Committee in Forensic Pathology
  - Dr. Kepron is a member of Deaths Under Five Committee of the Office of the Chief Coroner
  - Dr. Walker teaches at the University of West Indies in Jamaica

The second annual conference in Forensic and Pediatric Pathology, chaired by Drs. Walker and Kepron, took place in Ottawa in September 2016. This very successful meeting included speakers from Europe and the U.S., as well as Canada.

Hamilton Forensic Pathology Unit

The Hamilton Forensic Pathology Unit at the Hamilton Health Sciences Centre is affiliated with McMaster University. Forensic pathologists hold academic appointments and teach residents in anatomical and general pathology, medical students and undergraduates.

Since the last annual report, there have been several staffing changes:
- Dr. Jane Turner was recruited from St. Louis University in Missouri where she was professor and director of the fellowship program in forensic pathology. In April 2017, she was promoted to medical director of the unit
- Dr. John Fernandes continues as a member of the forensic team, and continues in his role as Chief of Laboratory Medicine and Medical Director of Hamilton Regional Laboratory Medical Programme (HRLMP)
- Dr. Andreese Nistor, the first graduate of the forensic pathology residency program at McMaster, passed the Royal College of Physicians and Surgeons of Canada examination in forensic pathology in 2016. She is now employed as a forensic pathologist in Saskatchewan
- Dr. Elena Bulakhtina is on a leave of absence
- Dr. David Chiasson has been providing coverage one weekend per month
- Dr. Allison Edgecombe provided forensic pathology and teaching services before her departure for Ottawa
- Dr. Vidhya Nair provides Category B service and cardiovascular consultations and directs the General Pathology Program at McMaster University
- Dr. Sahar Al-Haddad provided locum coverage as a Category B pathologist for five months
- Dr. Linda Kocovski, a resident in forensic pathology for the 2016/2017 academic year, joins the staff of the Hamilton Forensic Pathology Unit in July 2017
- Two part-time mortuary support staff have been hired, augmenting assistance for medicolegal autopsies

Kingston Forensic Pathology Unit

The Kingston Forensic Pathology Unit at Kingston General Hospital is affiliated with Queen’s University. In 2015/2016, about 200 medicolegal autopsies were performed.

Dr. Kris Cunningham continues to play a role at the unit with monthly medicolegal work rounds, teaching to Queen’s University Anatomical Pathology residents and undergraduate life science students, and consultations related to cardiovascular, surgical and autopsy pathology, and medicolegal autopsy issues.

Monthly medicolegal work rounds are regularly teleconferenced to Lindsay and Peterborough to allow participation by local coroners. This initiative, which started in 2015, is a collaboration between the Regional Supervising Coroner Dr. Paul Dungey and Kingston Forensic Pathology Unit. There are plans to expand this to other sites in our region.
Dr. Shkrum’s current motor vehicle-related research focuses on pediatric motor vehicle occupants injured in collisions. This is a conjoint study involving Transport Canada and the trauma program at London Health Sciences Centre.

Northeastern Regional Forensic Pathology Unit (Sudbury)

The Northeastern Regional Forensic Pathology Unit (NERFPU) of Health Sciences North in Sudbury is affiliated with Laurentian University and the Northern Ontario School of Medicine. In 2015/2016, about 400 medicolegal autopsies were performed. With the retirement of Dr. Alex Steele, NERFPU has taken on medicolegal autopsies from the North Bay region.

After spending the last two months of his forensic pathology residency at NERFPU, Dr. Brett Danielson joined the pathology group in July 2016 as a full-time forensic pathologist. He passed the Royal College of Physicians and Surgeons of Canada examination in forensic pathology in fall 2016.

Provincial Coroner Dispatch

Provincial Dispatch is the single point of contact to notify any coroner in Ontario of a death that may require investigation. The computer-aided, centralized, 24/7 dispatch service, located at the Forensic Services and Coroner’s Complex (FSCC), ensures that the right coroner is assigned to investigate each death while creating a digital record to capture case information in real time. The team of 14 dispatchers receives approximately 300 phone calls and makes 700 outgoing calls in each 24-hour period, resulting in coroners dispatched to over 20,000 cases per year.

Dispatch staff are also responsible for receiving and releasing each of the nearly 3500 bodies that arrive at the FSCC for examination or storage.

Collaboration with the Victorian Institute of Forensic Medicine

The Victorian Institute of Forensic Medicine (VIFM) in Melbourne, Australia, operates under the auspices of the Department of Justice and the Department of Forensic Medicine at Monash University. The VIFM provides forensic medical and scientific services to the Australian justice system and works with international organizations, including the International Committee of the Red Cross, the World Health Organization and agencies of the United Nations.

The OFPS, the Provincial Forensic Pathology Unit (PFPU) and the VIFM collaborate in teaching, quality assurance and exchange of best practices. Some autopsy reports written by the Chief Forensic Pathologist for Ontario are peer reviewed by VIFM forensic pathologists.

In June 2016, a video-conference was organized involving medical professionals from the VIFM and OFPS to discuss ethics and professionalism in forensic pathology.

Forensic Pathologist-Coroners

In 2013, the Ontario Government directed that forensic pathologists be appointed as coroners for cases of suspicious death or homicide, ensuring the public and the courts benefit from their expertise throughout death investigations. In these cases, the forensic pathologist appointed as coroner is responsible for identification, the completion of all required documentation, family communication, autopsy, the Report of the Post-mortem Examination, the Coroner’s Investigation Statement and the Medical Certificate of Death. The model promotes collaboration among all coroners, including attending scenes together and sharing ideas and perspectives to support professional development.

Implementation began in 2014, with forensic pathologists at the Provincial Forensic Pathology Unit in Toronto appointed as coroners. The first phase involves criminally suspicious and homicide cases investigated by the Toronto Police Service (TPS). In 2016, the program was expanded to the Eastern Ontario Forensic Pathology Unit in Ottawa.

During this report period, Forensic Pathologist-Coroners have been involved with 83 death investigations.

First Nations Liaison

Ontario’s death investigation system is committed to meeting the needs of First Nations communities.

Dr. Kona Williams is a forensic pathologist at the Provincial Forensic Pathology Unit (PFPU) and is First Nation (Cree and Mohawk). She serves as a role model for the Indigenous community, mentoring and inspiring youth and students. Since joining the PFPU in 2016, she has had operational experience with remote First Nations communities. A pilot project has been initiated to most effectively utilize Dr. Williams’ connection to First Nations in high profile cases requiring medicolegal autopsies. She is:

• building on existing relations between the OCC/OFPS and First Nations/Indigenous communities as established by the Regional Supervising Coroners;
• increasing First Nations/Indigenous communities’ awareness of the role of forensic pathologists and willingness of the death investigation system to consider religious/cultural accommodations; and
• connecting to and communicating with families and community leaders in difficult cases.
International Assistance and Capacity Development

Ontario has a history of providing leadership and support to international Disaster Victim Identification missions. These humanitarian missions are assembled following natural or human-caused disasters where help is needed to identify victims. The OFPS has participated internationally with Interpol, the International Committee of the Red Cross (ICRC), the Federal Bureau of Investigation and other experts from the forensic community.

Some nations do not have a robust system of forensic medicine to uphold human rights and justice. Dr. Pollanen, in his roles as Ontario’s Chief Forensic Pathologist and program director for U of T’s Centre for Forensic Science and Medicine, has worked to build forensic medicine capacity and support human rights investigations in areas such as the Middle East, South Asia, Africa and the Caribbean. Some of this work has involved United Nations agencies and the International Criminal Court, as well as the ICRC. In 2016, Dr. Pollanen visited the Medico-Legal Directorate in Baghdad, Iraq as a consulting forensic pathologist and visiting professor. Future partnerships may include Central America and China.

In 2016, the Provincial Forensic Pathology Unit (PFPU) hosted a number of international guests and observers:

- Dr. Pierre-Antoine Peyron, Departement de Medecine Legale, Montpellier, France
- Dr. Pengyao Liu, Forensic Center of Heilongjiang Police Department, Heilongjiang, People’s Republic of China
- Dr. Zaid Ali Hassan Al-Ali, Dr. Abdulhameed Osama A. Alhamed Abdulhameed and Dr. Mustafa Abdulrasool A. Hussein Alkhalili, Medico Legal Directorate, Baghdad, Iraq
- Dr. Seekena Goodwin, University Hospital of the West Indies, Mona, Jamaica
- Ms. Shen Yiwen, Shanghai Association of Forensic Medicine, Shanghai, People’s Republic of China
- Prof. Tim Lyons, The University of Newcastle, Newcastle, Australia
- Dr. Linda Iles, Victorian Institute of Forensic Medicine, Melbourne, Australia
- Dr. Bilal Sablouch and Dr. Abdul Anous, International Committee of the Red Cross- Beirut Delegation, Beirut, Lebanon
- Dr. Sohyung Park, National Forensic Service, Seoul, South Korea
- Dr. Maria Paolo Bonasoni, Bologna, Italy
- Dr. Katuscia Bisogni, Calabria, Italy
- Dr. Khaled Hindi, Kuwait Institute for Medical Specialization, Kuwait City, Kuwait
- Dr. Shereece Ali and Dr. Julien Charles, Charlieville, Trinidad and Tobago
- Ms. Moon-Young Kim, Department of Forensic Science, Seoul National University College of Medicine, Seoul, South Korea

In 2015, the PFPU entered into a Memorandum of Understanding with the Institute for Forensic Science and Legal Medicine (IFSLM), Ministry of National Security, Jamaica to support professional development in forensics. The PFPU will host forensic pathologist trainees, pathologist assistants, administrators and others from IFSLM as observers to promote best practices in forensic medicine.

Professional Activities and Outreach

Registered pathologists and forensic consultants enrich the practice of forensic science and medicine by participating in provincial, national and international professional organizations such as the Ontario Association of Pathologists, Canadian Association of Pathologists, National Association of Medical Examiners, Canadian Society of Forensic Sciences, American Academy of Forensic Sciences, the International Association of Forensic Sciences and other organizations.

OFPS forensic pathologists participate in activities of the Royal College of Physicians and Surgeons of Canada that focus on the promotion and accreditation of forensic pathology and anatomical pathology in Canada. This past year, OFPS pathologists lectured and delivered courses to audiences that included forensic pathologists and scientists, medical practitioners, the judiciary, lawyers, police, advocacy groups and others.

OFPS pathologists serve as members of editorial boards of international peer-reviewed forensic journals, and act as reviewers for other specialist journals.

Scholarly Activities

Teaching

Most forensic pathologists and forensic consultants hold academic appointments at their respective universities. They teach undergraduate and graduate science students, medical students, pathologist assistant and physician assistant students, dentists, nurses, medical artists, law students, medical imaging residents, and pathology and forensic pathology residents. Forensic Pathology Units also host many medical students and pathology residents from Canadian universities and elsewhere.

The Provincial Forensic Pathology Unit is participating in the University of Toronto’s Department of Laboratory Medicine and Pathobiology’s digital library by providing digital histological images of forensic interest for the educational purposes of pathology residents.

Forensic pathologists also act as visiting faculty to foreign universities.

In 2016, the PFPU partnered with the “LAWS” initiative of the Toronto District School Board, the University of Toronto Faculty of Law and Osgoode Hall Law School to pilot an educational program for Grade 11 students to understand forensic pathology, its intersection with the law, and the different career options available in the field. Two case-based sessions, for more than 100 students each, were offered at the Forensic Services and Coroner’s Complex. The students were exposed to a wide range of forensic specialties involved in a case.

Research

Forensic pathologists contribute to and support research aimed at understanding causes of sudden death and improving public safety.

Dr. Mike Shkrum, Medical Director of the London Forensic Pathology Unit, performs research into injuries resulting from motor vehicle crashes:

- Director and Principal Investigator, Motor Vehicle Safety (MOVES) Research Team, funded by Transport Canada
- Principal Investigator, Study of causes of fatal collisions...
in urban and rural regions in Canada (MOVES Research Team). Supervisor of MSc student, J. Roos: thesis Etiology of Motor Vehicle Collision Fatalities in Urban and Rural Canada

• Supervisor of MSc student, P. Schroeder on Prospective study of pediatric motor vehicle rear occupants injured in collisions, funded by Children’s Health Foundation, London Health Sciences Centre

Dr. Elena Tugaleva and Dr. Mike Shkrum are co-supervisors of MSc candidate A. Evetts, Department of Pathology, Schulich School of Medicine, Western University: thesis Body and Organ Measurements in Neonates and Infants: An Autopsy Study.

Papers Published by OFPS-Affiliated Staff Working in Forensic Pathology Units


Book Chapters

The Lawyer’s Guide to the Forensic Sciences edited by Caitlin Pakosh, Erwin Law Inc., 2016. Chapter 18: Forensic Pathology by Forensic Pathologists of the Provincial Forensic Pathology Unit of Toronto (Dr. Maggie Bellis, Dr. Kristopher Cunningham, Dr. Anita Lal, Dr. Jayantha Herath, Dr. Michael Pickup, Dr. Michael S. Pollanen, Dr. Ashwyn Rajagopalan, Dr. Toby H. Rose)

Goals for Next Year

The OFPS plans to:

• Continue implementing the strategic objectives of our Plan 2
• Host the 21st Triennial Meeting of the International Association of Forensic Sciences in Toronto in August 2017
Operational Services

Martin CHICILO    Director, Operational Services
Reshmy SATHYAN    Executive Assistant
Bonita ANDERS    Manager, Quality & Information Management
Lisa PERRI    Quality & Information Management Analyst
Scott PIMENTEL    Systems Officer
Andrew STEPHEN    Information Management Lead
Nasim HUSNANI    Manager, Business Services
Ramona BHAGWANDIN    Program Assistant
Maxine COOMBS    Office Services Coordinator
Alice GONSALES    Office Services Coordinator
Yasmin NOWSHERWANJII    Office Services Coordinator
Vicki STAMML    Office Services Coordinator
Laura DONALDSON    Manager, Business Planning & Controllership
Diana SANTAMARIA    Financial Analyst
Anna TORRIANO    Financial Officer
Burcu SEMIZ    Financial Officer
Cheryl MAHYR    Issues Manager
Reed CARROLL    Manager, Security and Facilities Management

Provincial Forensic Pathology Unit

Jayantha HERATH    Medical Director and Forensic Pathologist
Kristopher CUNNINGHAM    Forensic Pathologist/Cardiovascular Pathologist
Maggie BELLIS    Forensic Pathologist
Rebekah JACQUES    Forensic Pathologist
Sarah KEATING    A/Forensic Pathologist
Anita LAL    Forensic Pathologist
Noel MCAULIFFE    Forensic Pathologist
Michael PICKUP    Forensic Pathologist
Ashwyn RAJAGOPALAN    Forensic Pathologist
Ingo VON BOTH    Forensic Pathologist
Kona WILLIAMS    Forensic Pathologist
Trudy-ann BROWN    Forensic Pathology Fellow
Natasha RICHARDS    Forensic Pathology Fellow
Andrew WILLIAMS    Forensic Pathology Fellow
Jeffrey ARNOLD    Manager, Forensic Services
Amber MANOCCHIO    Assistant Manager, Forensic Services
Lucy COSTA    Administrative Assistant
Monique BARBEAU    Forensic Imaging Technologist
Jennifer CLEMENT    Forensic Imaging Technologist
Julia PRENTICE    Forensic Imaging Technologist
Dawn THORPE    Forensic Imaging Technologist
Miguel ARIAS    Coordinator, Autopsy Services
Meredith BERGGREN    A/Forensic Pathologist’s Assistant
Jessie COTTON    Forensic Pathologist’s Assistant
Maureen CURRIE    Forensic Pathologist’s Assistant
Shelby DEAN    Forensic Pathologist’s Assistant
Taylor GARDNER    Forensic Pathologist’s Assistant
Terry IRVINE    Forensic Pathologist’s Assistant
Solang Malhotra    Forensic Pathologist’s Assistant
Guiseppe Mendizabal Arbocco    Forensic Pathologist’s Assistant
Tiffany Monk    Forensic Pathologist’s Assistant
Yolanda Nerkowski    Forensic Pathologist’s Assistant
Stephanie Santangelo    Forensic Pathologist’s Assistant
Irina Shipilova    Forensic Pathologist’s Assistant
David Larraguibel    Forensic Pathologist’s Assistant
Vi-Chi Tran    Forensic Pathologist’s Assistant
Amanda (Amy) Fong    Forensic Pathologist’s Assistant
Christian Guillemette    Forensic Pathologist’s Assistant
Amanda Antenucci    Forensic Pathologist’s Assistant
Gillian Currie    Forensic Pathologist’s Assistant
Sincere Ip    Forensic Pathologist’s Assistant
Zhanna Konovalova    Forensic Pathologist’s Assistant
Vincenzo Pacheco    Forensic Pathologist’s Assistant
Sonia Sant    Forensic Pathologist’s Assistant
Joanne Whitney    Forensic Services Technologist
Jason Campitelli    Forensic Services Technologist
Julie Crowe    Forensic Services Technologist
Kayla Tremblett    Forensic Services Technologist
Daniel Franey    Forensic Services Technologist
Tanya Hatton    Forensic Services Technologist
Noelle Kelly    Forensic Services Technologist
Ron Littlejohn    Forensic Services Technologist
Lyndsey MacEwen    Forensic Services Technologist
Valerie Maijk    Forensic Services Technologist
Jessica Naumovski    Forensic Services Technologist
Stephanie Skirrow    Forensic Services Technologist
Renato Tanel    Forensic Services Technologist
David Todd    Forensic Services Technologist
Debra Wells    Forensic Services Technologist
Lesley-Anne Westby    Forensic Services Technologist
Renée Kosalka    Forensic Services Technologist
Greg Olson    Forensic Services Technologist
Sherah Vanlaerhoven    Forensic Services Technologist
Bruce Pynn    Forensic Services Technologist
Bob Wood    Forensic Services Technologist
D’Arcy Little    Forensic Services Technologist
William Halliday    Forensic Services Technologist
Lili Hazrati    Forensic Services Technologist
Julia Keith    Forensic Services Technologist
David Ramsay    Forensic Services Technologist

Meredith BERGGREN    A/Forensic Pathologist’s Assistant
Jessie COTTON    Forensic Pathologist’s Assistant
Maureen CURRIE    Forensic Pathologist’s Assistant
Shelby DEAN    Forensic Pathologist’s Assistant
Taylor GARDNER    Forensic Pathologist’s Assistant
Terry IRVINE    Forensic Pathologist’s Assistant
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Tiffany Monk    Forensic Pathologist’s Assistant
Yolanda Nerkowski    Forensic Pathologist’s Assistant
Stephanie Santangelo    Forensic Pathologist’s Assistant
Irina Shipilova    Forensic Pathologist’s Assistant
David Larraguibel    Forensic Pathologist’s Assistant
Vi-Chi Tran    Forensic Pathologist’s Assistant
Amanda (Amy) Fong    Forensic Pathologist’s Assistant
Christian Guillemette    Forensic Pathologist’s Assistant
Amanda Antenucci    Forensic Pathologist’s Assistant
Gillian Currie    Forensic Pathologist’s Assistant
Sincere Ip    Forensic Pathologist’s Assistant
Zhanna Konovalova    Forensic Pathologist’s Assistant
Vincenzo Pacheco    Forensic Pathologist’s Assistant
Sonia Sant    Forensic Pathologist’s Assistant
Joanne Whitney    Forensic Pathologist’s Assistant
Jason Campitelli    Forensic Pathologist’s Assistant
Julie Crowe    Forensic Pathologist’s Assistant
Kayla Tremblett    Forensic Pathologist’s Assistant
Daniel Franey    Forensic Pathologist’s Assistant
Tanya Hatton    Forensic Pathologist’s Assistant
Noelle Kelly    Forensic Pathologist’s Assistant
Ron Littlejohn    Forensic Pathologist’s Assistant
Lyndsey MacEwen    Forensic Pathologist’s Assistant
Valerie Maijk    Forensic Pathologist’s Assistant
Jessica Naumovski    Forensic Pathologist’s Assistant
Stephanie Skirrow    Forensic Pathologist’s Assistant
Renato Tanel    Forensic Pathologist’s Assistant
David Todd    Forensic Pathologist’s Assistant
Debra Wells    Forensic Pathologist’s Assistant
Lesley-Anne Westby    Forensic Pathologist’s Assistant
Renée Kosalka    Forensic Pathologist’s Assistant
Greg Olson    Forensic Pathologist’s Assistant
Sherah Vanlaerhoven    Forensic Pathologist’s Assistant
Bruce Pynn    Forensic Pathologist’s Assistant
Bob Wood    Forensic Pathologist’s Assistant
D’Arcy Little    Forensic Pathologist’s Assistant
William Halliday    Forensic Pathologist’s Assistant
Lili Hazrati    Forensic Pathologist’s Assistant
Julia Keith    Forensic Pathologist’s Assistant
David Ramsay    Forensic Pathologist’s Assistant
Hamilton Forensic Pathology Unit

Jane TURNER    Medical Director
Elena BULAKHTINA    Forensic Pathologist
David CHIASSON    Forensic Pathologist
John FERNANDES    Forensic Pathologist
Linda KOCOVSKI    Forensic Pathology Fellow
Vidhya NAIR    Cardiovascular Pathologist
Boleslaw LACH    Neuropathologist
John PROVIAS    Neuropathologist
Tracy ROGERS    Forensic Anthropologist
Murray PEARSON    Forensic Odontologist
Danny POGODA    Forensic Odontologist
John THOMPSON    Forensic Odontologist

London Forensic Pathology Unit

Michael SHKRUM    Medical Director and Forensic Pathologist
Elena TUGALEVA    Forensic Pathologist
Edward TWEEDIE    Forensic Pathologist
Christopher ARMSTRONG    Pathologist
Nancy CHAN    Pathologist
Bertha GARCIA    Pathologist
Aaron HAIG    Pathologist
Christopher HOWLETT    Pathologist
Jeremy PARFITT    Pathologist
Joanna WALSH    Pathologist
Lee-Cyn ANG    Neuropathologist
Robert HAMMOND    Neuropathologist
David RAMSAY    Neuropathologist
Mike SPENCE    Forensic Anthropologist
Mark DARLING    Forensic Odontologist
Stanley KOGON    Forensic Odontologist
Thomas MARA    Forensic Odontologist

Eastern Ontario Forensic Pathology Unit

Christopher MILROY    Medical Director and Forensic Pathologist
Allison EDGEcombe    Forensic Pathologist
Charis KEPRON    Forensic Pathologist
Jacqueline PARAI    Forensic Pathologist
Alfredo WALKER    Forensic Pathologist
Eric BELANGER    Cardiovascular Pathologist
John VEINOT    Cardiovascular Pathologist
Gerard JANSSEN    Neuropathologist
John WOULFE    Neuropathologist
David CAMELLATO    Forensic Odontologist
Chris CLARKE    Forensic Odontologist

Ottawa Children's Hospital of Eastern Ontario

Jean MICHAUD    Neuropathologist
Joseph DE NANASSY    Pediatric Pathologist
David GRYNSPAN    Pediatric Pathologist
Elizabeth NIZALIK    Pediatric Pathologist

Kingston Forensic Pathology Unit

David HURLBUT    Medical Director and Pathologist
John ROSSITER    Neuropathologist
David BERMAN    Pathologist
Alexander BOAG    Pathologist
Tim CHILDs    Pathologist
Christopher DAVIDSON    Pathologist
Patricia FARMER    Pathologist
David LEBRUN    Pathologist
Marosh MANDUCH    Pathologist
Paul MANLEY    Pathologist
Neil RENWICK    Pathologist
Mark SCHNEIDER    Pathologist
Sandip SENGUPTA    Pathologist
Sonal VARMA    Pathologist
Ami WANG    Pathologist
Iain YOUNG    Pathologist

Hospital for Sick Children

David CHIASSON    Section Head Autopsy Services/Forensic Pathologist
Gregory WILSON    Pediatric Pathologist
Cynthia HAWKINS    Neuropathologist
Lili-Naz HAZRATI    Neuropathologist

Northeastern Regional Forensic Pathology Unit

Martin QUEEN    Medical Director and Forensic Pathologist
Brett DANIELSON    Forensic Pathologist
Silvia GRAHAM    Neuropathologist
Scott FAIRYGRIEVE    Forensic Anthropologist
Scott KEENAN    Forensic Odontologist