

# Dr. Andrew Williams

## Forensic Pathology

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### Overview

1. **Profile:**
  - a. Positions: Forensic Pathologist (Ontario Forensic Pathology Service's Provincial Forensic Pathology Unit, Toronto); Assistant Professor in the Department of Laboratory and Pathobiology (University of Toronto)
  - b. Training: Forensic Pathology Fellowship (Toronto); Anatomical Pathology Residency (Dalhousie); MD (Western)
2. **Pitch:** Conduct autopsies and investigate cause of deaths, collaborate with many other specialties and professionals
3. **Path:** Initially thought pathology specialty and then forensic pathology subspecialty was limited but fell in love with the field after discovering its breadth and depth
5. **Personal:** Forensic pathologists do a lot of documentation and routine work, but sometimes discover unexpected things during the post-mortem examination, which can be exciting!
6. **Philosophy:** Find a mentor that inspires you and shows you nuances of the field. Keep your mind open to every opportunity!

### Elevator Pitch

(1:57)

- ***"We are consulted only when everybody else doesn't seem to have an answer."***
- Engaged in cases with medical-legal significance or involving unknown deaths, you're the ultimate medical detective and final medical consultant!
- Conduct autopsies in post-mortem suite but also involved with death investigation services and other collaborators (coroners, police, lawyers, judges, criminal justice system)
- **Homicide** is only a small fraction of your work, focus often on natural disease and social determinants of health (level of care at home, neglect)

- Interesting and engaging field that offers numerous research opportunities and collaboration with other specialties and investigators
  - Developments in post-mortem diagnostic imaging make this a rapidly growing field!

## Personality

(4:35)

- **Humility**, open and **honest** heart, **reliable**, good **collaborator**
- Need to understand yourself and what you do or don't know (draw the line between medical certainty and medical uncertainty!)

### UBC medical students' perception of pathology

(5:46)

- Pathology is a field for introverts and is non-medical, akin to technician-type role
- Dr. William's response: forensic pathologists are sometimes called to testify in court (including cross examination by lawyers); he doubts that would be an attractive aspect of the job to those who are introverted
- Anatomic/General Pathologists bring visual and diagnostic skillset to table but work closely with clinical team to diagnose and treat patient (you need a strong foundation in core medicine!)
- **Other stereotypes**: Many think pathology is a dying specialty with the same old stuff, you work from your basement
  - Not true, he actually has a beautiful office with floor to ceiling windows!
  - Anatomical pathology is rapidly evolving (shift from histomorphology to advanced molecular diagnostic imaging)
  - Specialty is actually becoming *more important* as diagnostics becomes more specialized and complicated (increased need for highly skilled doctors)

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Referenced Material: Hung et al. Residency choices by graduating medical students: why not pathology? *Human Pathology*. 2011; 42: 802-807.

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## Path

(9:50)

Medical School

- When he came to med school, he didn't have anatomical or forensic pathology on his mind.
  - Thought pathology was "look[ing] down a microscope and mak[ing] single diagnosis and mov[ing] on with your day"
  - Small group pathology session with Dr. Bret Wehrli (a bone and soft tissue pathologist) showed him the depth and breadth of the field in short time
- Also considered critical care
  - Manage patients with variety of diseases, need to be highly integrative with approach, need strong understanding of physiology and pharmacology to provide absolute optimum amount of care ("taking people from brink of death and bringing them back")
  - Ultimately ended up choosing pathology after experiencing the nuances
- Engage in each clinical placement as if you're going to do that specialty
  - "It's the opportunity of a lifetime"
  - Experience of cardiac transplant in the middle of the night will sit with him for life even though it has nothing to do with where he ended up
- "if you keep your mind open to each and every opportunity that comes your way, perhaps your mind will change and you'll find your path"

#### Residency and Fellowship

- Dr. Matthew Bowes at Dalhousie showed him how much forensic pathology can offer you
  - Got to experience collegial team that enjoyed work even though they dealt with death every day
- The way med students look at pathology as being all about tumours is the way anatomical pathologists look at forensics - a niche field that's "just homicides."

#### Careers in death investigations:

(16:36)

- Coroner
  - Not necessarily a pathologist, could be another medical physician or not a physician
  - Tasked by crown to investigate deaths (don't perform the actual autopsy)
- Medical Examiner

- Forensic pathologist tasked with entire investigation (scene, history, data gathering, completion of post mortem exam, ancillary test, forming opinions, suggesting cause and manner of death, completing paperwork)
- In Ontario, there is a **coronial** system and forensic pathologists do the post-mortem exam and serve as consultants when examining the scene
  - Pull in data from many sources to arrive at scientifically informed answer for cause of death

## Day-to-Day Life

(19:33)

- Arrive around 7 am
- **Four types of days:** on call, paper day, autopsy, or court
- On call:
  - One week every other month, sometimes weekends
  - Cover large patient population in GTA and Hamilton
  - Also forensic pathologist of reference for entire province (consultant of last resort, decide where autopsy occurs)
  - Provide admin, medical expert, and resource utilization angles
- Paper (admin) day:
  - “More mundane and relaxed”
  - Use anatomical pathology skills to examine slide sets
  - Take all previous data from post-mortem exam and sew it together into medical-legal document complete with opinion on cause + mechanisms of injuries and final cause of death
  - Sometimes, colleagues come in for second opinions on reports or image interpretation
- Autopsy:
  - ~7-8 days a month
  - Working downstairs in morgue (with “hand and scalpel”)
  - Different set of colleagues (pathologist assistants in morgue, forensic service technologists, team of diagnostic imaging staff)
  - On your feet, using your hands
- Court:
  - ~10-20 appearances a year
  - Provide expert testimony for death investigations so court has medical context to interpret evidence

- Not every case goes to court (even in homicides, accused might plead or evidence in report is clear)
  - More remote work during COVID
  - Leave around 5 pm, sometimes stay still 6 pm
  - He also does some teaching and research outside of formal job on evenings and weekends
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**Practice setting:** Dr. Williams is a salaried employee in Toronto but peripheral forensic pathology units outside Toronto have different case types, case volume, approach to autopsy, access to technology, and different employment relationships ("lot of [financial] variability both within job itself and within larger life aspects of your job").

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## Personal Takeaways

(28:33)

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**Discovery aspect:** A forensic pathologist has two jobs: **discovery and documentation**. Mostly you're just documenting and not discovering anything new but sometimes, you can find unexpected or low possibility things on the post-mortem exam, which is **exciting!**

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### Personal Story:

(29:50)

*"One of the things we use [post-mortem CT imaging] for is to exclude major things that can cause death that are inside of your head, so we don't necessarily need to do examination of the cranial cavity... at autopsy. One of the cases that I was performing downstairs, I was looking at the CT scan, and there was **nothing large...** No large bleeds; no fractures; nothing that I could see that was definitively a cause of death. Nonetheless, there was a subtle hyper-attenuation around the brain.... And I decided it's just enough that I'm uncomfortable with it and let us open the head and see... The context of that case was an individual found dead in their home. Nothing to suggest the final diagnosis: there were no symptoms or signs to suggest what was going on. When we opened the head, it was bacterial meningitis... Not only does that have implications for the individual*

*death investigation... [but] it also has a **public health implication**... this is a reportable disease... There may be implications for people who have had close contact with that individual recently... I think it shows the **breadth** of the specialty but also shows that **discovery moment**, and then it ignited a research project.”*

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**Takeaway:** Discovery of the unknown (surprises) makes this job exciting for Dr. Williams.

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Note: While we tried to keep these transcriptions as true to the speaker as possible, some dialogue is paraphrased and/or edited for easier reading.

## Final Comments

(36:00)

1. “I hope listeners get spark out of this and consider general or forensic pathology”
2. Take time to enjoy medical school for all the opportunities, get to know yourself, understand your passions, and follow your heart!