This presentation is an Asbestos Awareness presentation only. It’s purpose is to familiarize faculty and staff with asbestos, its health effects, associated hazards and recognition of asbestos materials on campus.

This presentation DOES NOT qualify staff and workers to remove or work with asbestos – it is only for general awareness information.

In-depth training as well as worker experience is required for individuals to perform asbestos abatement.
WHAT IS ASBESTOS?

- Asbestos is the generic name for 6 different naturally-occurring fibrous minerals.
- It was widely used in construction and industry by mixing Asbestos fibers with other construction materials.
WHAT IS ASBESTOS?

Asbestos has six primary sub-classifications:

CHRYSOTILE  CROCIDOLITE  AMOSITE  ANTHOXYLLITE  TRENOLITE  ACTINOLITE

Among these, CHRYSOTILE and AMOSITE asbestos are the most common
Because Asbestos is very strong and heat resistant, it was the material of choice to be used in a variety of products:

- Roof Shingles
- Floor Tiles
- Drywall Cement
- Ironing Board Covers and Oven Mitts
- Automotive Parts – brakes, transmission parts
Federal legislation prohibits the sale and importation of many asbestos-containing products into Canada under the Hazardous Products Act – but not all.

Unlike most countries, Canada has never banned the use of asbestos and continues to import and export asbestos-containing materials, such as pipes and tiles (The Globe and Mail, June 27, 2014) – although there are strict regulations on how to cut and dispose of them.

A recent project was the McGill University Health Centre, a billion-dollar-plus, Montreal mega-hospital which was built by SNC-Lavalin. SNC-Lavalin said the pipes are used in storm water drainage and noted the only risk with this type of pipe is “when it is being cut upon installation,” a risk that is regulated by the province. SNC-Lavalin claims “there are no risks associated with this type of piping once installation is completed”.

Other products that are still imported into Canada include some types of vinyl and tile flooring and brake pads and transmission parts.

WHAT IS ASBESTOS?

Asbestos is now strictly regulated as exposure can now be directly and scientifically linked to a number of lung and respiratory health conditions.

In 2011, Canada’s remaining 2 asbestos mines, both located in Quebec, halted operations.
Asbestos is generally classified into 2 groups:

**Friable asbestos**
- Asbestos containing material that can be easily pulverized and reduced to dust by hand pressure
- Easily release asbestos fibers
- Presents the highest hazard as minor disturbance can easily result in exposure
  - Example: Mag block, composite

**Non-friable asbestos**
- Asbestos containing material bound in a resin matrix. Cannot be damaged by hand pressure
- Does not easily release asbestos fibers
- Presents a lower hazard as disturbance requires more effort
- Example: Asbestos cement board
Three *common* diseases linked to asbestos exposure are:

- Asbestosis
- Mesothelioma
- Lung Cancer

- Everyone is exposed to asbestos at some time during their life.
- Low levels of asbestos are present in the air, water and soil. Most people do not become ill from their exposure.
- People who become ill from asbestos are usually those who are exposed to it on a regular basis, most often in a job where they work directly with the material or through substantial environmental contact.

When Asbestos is disturbed, it can travel through the air as very fine dust. As a result, it can enter the body through:

- **Inhalation** – which is the most common route
- **Ingestion** – fibers are inhaled, coughed out of the lungs in phlegm and then swallowed. From there, they can travel through the digestive system and become lodged in other organs.
- **Absorption** – through the skin – asbestos fibers can become imbedded in the
skin and form asbestos warts.
**HEALTH EFFECTS OF ASBESTOS**

**Asbestosis**

**ASBESTOSIS** is a chronic lung disease caused by inhaling asbestos fibres.

**RISK:** Minimal for those who do not work directly with asbestos.

**ONSET:** Usually develops 1—20 years after initial exposure.

**SYMPTOMS:** Shortness of breath, a persistent, dry cough, loss of appetite with weight loss, chest tightness and pain, fingertips and toes that appear wider and rounder than normal (clubbing).

**ASBESTOSIS** is a chronic lung disease - only caused by inhaling asbestos fibres.

This disease leads to long-term breathing complications and does not have a cure.

**RISK:** Minimal for those who do not work directly with asbestos.

**ONSET:** Usually develops 1—20 years after initial exposure.

**SYMPTOMS:** Shortness of breath, a persistent, dry cough, loss of appetite with weight loss, chest tightness and pain, fingertips and toes that appear wider and rounder than normal (clubbing).
MESOTHELIOMA is an aggressive cancer affecting the membrane lining of the lungs and abdomen.

It is the most serious of all asbestos-related diseases and currently, there is no known cure.

RISK: Has developed in individuals exposed to asbestos for as little as 2 months and for as long as 50 years. Most people who develop Mesothelioma have worked in jobs where they inhaled or ingested asbestos fibers or were exposed to airborne asbestos dust and fibers in other ways.

ONSET: The onset of this disease may occur after 15-55 years for both long term and short term exposure

SYMPTOMS: Trouble breathing, pain under rib cage, pain-swelling-lumps in abdomen, unexplained weight loss
**LUNG CANCER** is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung.

**RISK:** Exposure to asbestos fibers for 4-6 months may be sufficient to cause lung cancer.

**ONSET:** Can appear after approximately 15-25 years, depending on the frequency and duration of exposure.

**SYMPTOMS:** Coughing, coughing up blood, wheezing, shortness of breath, fatigue, weight loss
• As mentioned previously, the main route of entry for asbestos fibres to enter the body is through inhalation. Smaller fibres can also become embedded into the esophagus, larynx, trachea, lungs, abdomen, stomach, intestines, colon and rectum. Once embedded into the body’s tissue, asbestos fibres may remain for extended periods of time.

• Example of Exposure: Individuals involved in the rescue, recovery and cleanup at the site of the September 11, 2001 attacks on the WTC in NYC are a group at risk of developing an asbestos-related disease. Because asbestos was used in the construction of the North Tower of the WTC, when the building was attacked, hundreds of tons of asbestos were released into the atmosphere.
Information obtained from Government of Canada website:

MINERS, SHIP LOADERS and TRUCK DRIVERS – loose asbestos was shipped to developing countries from Canada in large reinforced paper bags where they were handled by untrained and inadequately protected workers.

CARPENTERS, CONSTRUCTION WORKERS, INSULATION INSTALLERS, PLUMBERS, ROOFERS, SHIP BUILDERS AND TEXTILE WORKERS – these are people who work in trades that are one step removed from the process of removing asbestos from mines and transporting it to second and third world countries who continue to use asbestos products in construction.

FIRE FIGHTERS and INSURANCE ADJUSTERS – during a burning building, asbestos fibres can be released. After the fire, Insurance Adjusters inspect the buildings and can be exposed to fibres.
Alberta’s OHS legislation sets out employer and worker responsibilities at the work site. The 8-hour Occupational Exposure Limit (OEL) for all forms of asbestos is 0.1 fibres per cubic centimetre (f/cc) of air.

Samples can be collected by using a special equipment which draws air through a filter. The filter is then examined under a microscope to estimate the number of asbestos fibres on the filter.
Most of the Asbestos on Campus has now been removed.

**ASBESTOS ON CAMPUS**

- **WALLS:** plaster, textured plaster, drywall joint compound (See Below)
- **FLOORING:** Floor Tiles, Sheet Flooring
- **CEILINGS:** Plaster, Texture Coat
- **MECHANICAL:** Pipe Insulation, Duct Insulation
- **LABS:** Fume hood and incubator insulation.
As per the Alberta OHS Code – detailed SWP’s and SJP’s must be followed.

As mentioned earlier, only trained and competent individuals can work with asbestos abatement.
ASBESTOS MANAGEMENT PLAN

ADVANTAGES OF REMOVING ASBESTOS

- Eliminates the source
- Ends the need for a Management Plan if no asbestos remains on campus
- It is significantly less expensive if combined with renovation or demolition
ASBESTOS MANAGEMENT PLAN

DISADVANTAGES OF ASBESTOS REMOVAL

• The process is costly, complicated and time-consuming
• If fireproofing and insulation properties are still required, the material must be replaced
• There is a potential for worker and building occupant exposure during removal.
Locations containing asbestos have been identified on our Campus and an inventory is maintained.

Asbestos Abatement Projects are generally contracted to professionals trained to do this type of work. Small project where there is a very minor amount of Asbestos removal may be completed by University employees who are trained and have the competence to complete the work.
ASBESTOS RESOURCES

Alberta Asbestos Abatement Manual

Alberta Occupational Health and Safety

CAUT – Canadian Association of University Teachers
Both Facilities and RSS have a role to play if there are concerns with asbestos, therefore, both parties require notification.

Anyone concerned about asbestos exposure in their workplace should also discuss the situation with their Supervisor.

Questions?