

FIREFIGHTING AND

OCCUPATIONAL

CANCER

COPENHAGEN



ALEX FORREST



WINNIPEG FIRE OFFICER, 25 YEARS EXPERIENCE AS A FIRE FIGHTER

**PRESIDENT OF UNITED FIRE FIGHTERS OF WINNIPEG, LAWYER
CANADIAN TRUSTEE, INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS**

AUTHOR OF NUMEROUS ARTICLES ON FIRE FIGHTERS AND CANCER

THE TRAGIC IRONY OF OUR JOB!



NO LONGER A DEBATE

**STUDY AFTER STUDY SHOWS A
CONNECTION BETWEEN FIREFIGHTING
AND OCCUPATIONAL CANCER
(LeMASTERS, GUIDOTTI, MONASH UNIVERSITY
AND KOREAN STUDY)**

**OUR JOB IS GETTING
MORE DANGEROUS!**

WHY?

- **PLASTICS AND THEIR INCREASED USE IN SOCIETY**
- **BUILDING MATERIALS AND ALL HOUSEHOLD ITEMS**
- **ALL AROUND THE WORLD**
- **CHINA - MAIN PRODUCER AND SUPPLIER**
- **(International Agency for Research on Cancer and the US National Toxicology Program)**

FIREFIGHTING AND CANCER

HOW DO WE DEAL WITH THIS ISSUE:

- IN NORTH AMERICA?
- IN AUSTRALIA?
- Europe?



SPEAKING AS A FIRE FIGHTER

WHO HAS SEEN HUNDREDS OF MY
BROTHERS AND SISTERS SUCCUMB TO
OCCUPATIONAL CANCER!



HISTORY

**IGNORANCE
IS BLISS!**

1990'S

- **USA AND CANADA HAD A LARGE NUMBER OF YOUNG FIRE FIGHTERS DYING OF CANCER**
- **ALL WERE PREVIOUSLY HEALTHY**
- **THEY HAD NO FAMILY HISTORY OF CANCER**

EARLY SCIENCE

- **AWKWARD BUT SHOWED A CONNECTION
FIRE FIGHTERS IN METROPOLITAN TORONTO:
SUMMARY OF THE MORTALITY STUDY,
KRISTAN A. l'Abbe and George A. Tomlinson**

April 24, 1992



2000

**FIRE FIGHTERS WERE STILL
DYING OF CANCER AT
ALARMING RATES!**

STUDIES START TO GET MORE SOPHISTICATED PRE 2002

- GUIDOTTI
 - REPORT TO THE WORKERS COMPENSATION BOARD OF MANITOBA BETWEEN SELECTED CANCERS AND THE OCCUPATION OF FIRE FIGHTER, 2002

- BARIS
 - COHORT MORTALITY STUDY OF PHILADELPHIA FIREFIGHTERS, 2001

- DEMERS
 - Nordic Fire Fighters

FIREFIGHTERS NOT GETTING SUPPORT

FINANCIALLY CHALLENGED

U.S.A.

- ORIGINAL LEGISLATION
- PRESUMPTIVE LEGISLATION
- PENSION
- HEALTH CARE BENEFITS
- NO CONSISTENCY IN SCOPE OR COVERAGE

MANITOBA, CANADA

2002

- **THE FIRST LEGISLATION OF ITS KIND IN CANADA**
(Bill 5, 3rs Session, 37th Legislature, **THE WORKERS COMPENSATION AMENDMENT ACT OF MANITOBA** - Assented to May 23, 2002)
- **FIRST CANADIAN JURISDICTION TO REGOGNIZE THE LINK BETWEEN OCCUPATIONAL CANCER & FIRE FIGHTING**
- **TREAT OCCUPATIONAL CANCER IN THE SAME WAY AS A DEATH OR INJURY ON THE FIRE GROUND**
- **CONSISTENT**

PRIOR TO 2002

**NOT A SINGLE FIRE FIGHTER
HAD BEEN COVERED FOR
OCCUPATIONAL CANCER**

AUSTRALIA - 2011 LEGISLATION

AUSTRALIA



AUSTRALIA

- **STUNNING SUCCESS**
- **Australian Senate Report**



TODAY

**90% OF FIRE FIGHTERS IN
CANADA
AND
AUSTRALIA**

NOW HAVE COVERAGE

**NOW THE CONNECTION BETWEEN CANCER
AND FIREFIGHTING GETS WORLD-WIDE
ATTENTION!**

W.H.O. (World Health Organization)

**IARC (International Agency for Research on
Cancer)**

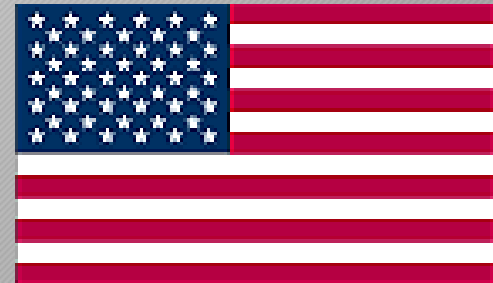
THIS IS NOW A GLOBAL PHENOMENON

IARC

- FIRST TIME STUDYING
 - CONNECTION TO PLASTICS
 - LIST OF CARCINOGENS IN FIRES
- ▶ PUT FIREFIGHTING ON THE WORLD MAP
 - ▶ FIRE FIGHTER CANCER AWARENESS
 - ▶ CLASSIFYING - 2B

STUDIES

- **LEMASTERS - OHIO, U.S.A.**
- **CANCER RISK AMONG FIREFIGHTERS: A REVIEW AND META-ANALYSIS OF 32 STUDIES**
- **2006**



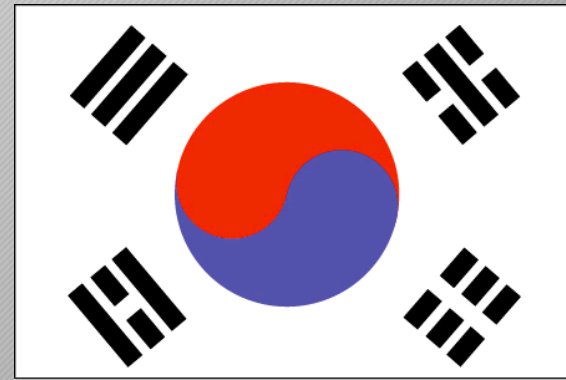
STUDIES

- **GUIDOTTI - MANITOBA, CANADA**
 - **REPORT TO THE WORKERS COMPENSATION BOARD OF MANITOBA ON THE ASSOCIATION BETWEEN SELECTED CANCERS AND THE OCCUPATION OF FIREFIGHTER**
 - **2002**



STUDIES

- **KOREAN STUDY**
- **CANCER MORBIDITY OF PROFESSIONAL EMERGENCY RESPONDERS IN KOREA**
- **2012**



STUDIES

- **NORDIC STUDY**

- **CANCER INCIDENCE AMONG NORDIC FIREFIGHTERS**

- **2013**



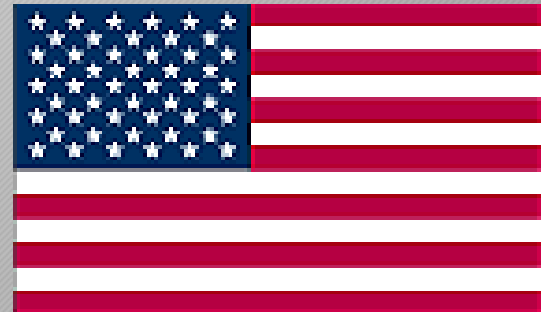
STUDIES

- **MONASH UNIVERSITY STUDY**
 - **FINAL REPORT ON AUSTRALIAN FIRE FIGHTERS' CANCER INCIDENCE STUDY**
 - **LARGEST FIRE FIGHTER STUDY EVER DONE**
 - **Hot off the Presses (January 2015)**



NIOSH

- 30,000 Fire Fighters in Philadelphia, Chicago and San Francisco
- 2014



SCIENCE IS A BIG PUZZLE

**EVERY STUDY IS A PIECE OF
THAT PUZZLE!**

RESULTS/FACTS

**FIREFIGHTERS DO HAVE HIGHER RATES
OF CERTAIN CANCERS**

**WE GET CANCER AT A HIGHER RATE THAN
THE GENERAL POPULATION**

AND WE GET IT EARLIER IN LIFE

RESULTS/FACTS

FIREFIGHTERS COME INTO CONTACT WITH DOZENS OF IARC CLASS 1, 2A AND 2B CHEMICALS AT EVERY FIRE



THE RESULTS ARE FRIGHTENING

**FIRES ARE MORE
DANGEROUS TODAY
THAN EVER BEFORE
DUE TO AN INCREASE
IN THE USE OF PLASTICS**



THE RESULTS ARE FRIGHTENING

COMPARED TO EVEN TEN YEARS AGO:

. THE USE OF PLASTICS IS INCREASING

- BUILDING MATERIALS
- ELECTRONICS
- FLAME RETARDENTS
- NEW CHEMICAL COMBINATIONS

THE RESULTS ARE FRIGHTENING

**PLASTICS AND FIRE RETARDANTS
HBO SPECIAL - “TOXIC HOT
SEAT”**

<https://www.youtube.com/watch?v=2e-LK80LhUY>

THE RESULTS ARE FRIGHTENING

**THE LONGER YOU WORK AS A
FIRE FIGHTER**

**THE MORE YOUR CANCER
RISK INCREASES**

THE RESULTS ARE FRIGHTENING

CHEMICALS COMBINE TO INCREASE EXPOSURE TO CANCER-CAUSING CARCINOGENS

In toxicology, synergism refers to the effect caused when exposure to two or more chemicals results in health effects that are greater than the sum of the effects of the individual chemicals.

$$1 + 1 = 4$$

CANADIAN CENTRE FOR OCCUPATIONAL HEALTH AND SAFETY

THE RESULTS ARE FRIGHTENING

**WE CANNOT PROTECT
OURSELVES FROM THIS DANGER**

**FIREFIGHTING CLOTHING PROTECTS
US FROM AMBIANT HEAT BUT NOT
FROM CONTACT WITH CANCER
CAUSING CHEMICALS**

The background features a central white area with a subtle gradient, surrounded by overlapping, semi-transparent red and orange geometric shapes, primarily triangles and polygons, creating a modern, abstract design.

PARTICULATE INFILTRATION STUDY - 2015

PARTICULATE:

INFILTRATION STUDY:

- IAFF
- Research Triangle Institute
- Game Changer!



PATICULATE INFILTRATION STUDY

- Tests were done as per Department of Defence**
- Florescent Aerosol Screening Test**

PARTICULATE INFILTRATE STUDY

SUBJECTS WERE:

- SCBA and turnout gear in a particle laden chamber**
- Silica Powder - same infiltration as cancer causing carcinogens.**

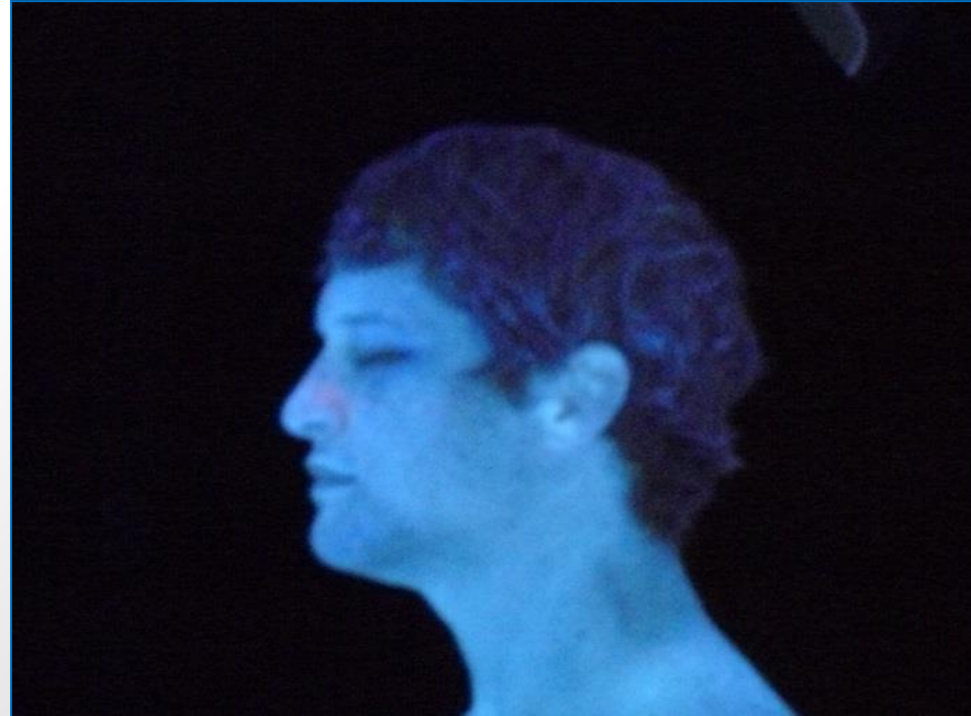
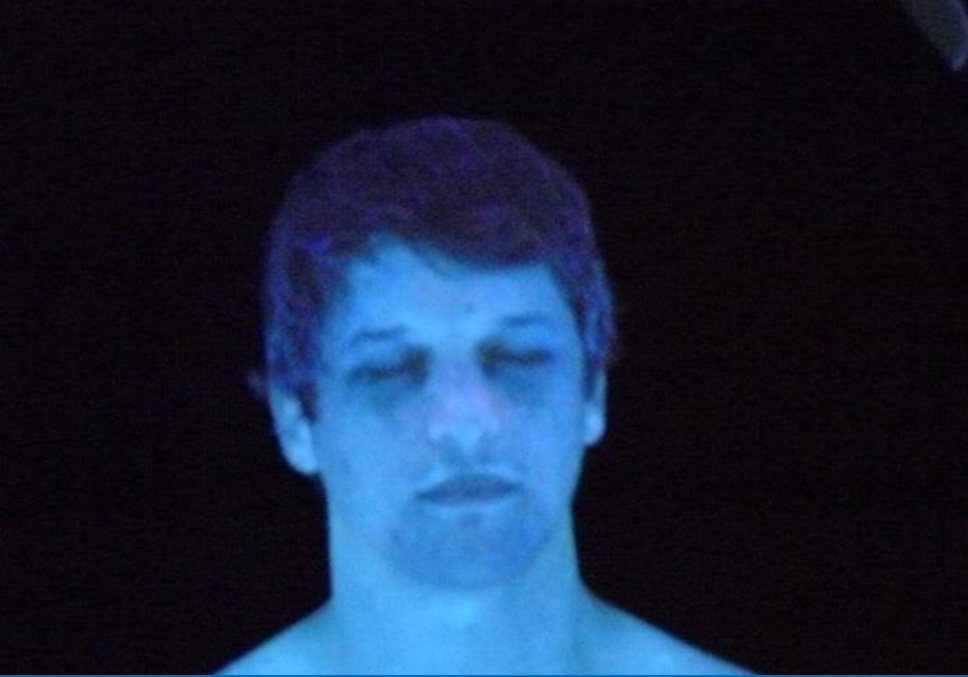
PARTICULATE INFILTRATION STUDY

- Subject Performed basic Firefighter Movements in controlled Enviroments**
- Subject them went under sensitive Black Lights to expose Particulate infiltrations in gear**

PARTICULATE INFILTRATION STUDY

- Particles were seen throughout inside of the Gear
- Particles were high in concentrations around the face, neck, Crotch and coat interface areas.









PARTICULATE INFILTRATION STUDY

-Conclusively shows pathways for carcinogens



STUDY:

- Conclusively shows that as fire fighters we can not protect ourselves.
- Need for hygiene, clothing turn our maintained and cleaning after each fire.
- The bodies ability to absorb carcinogens increases expediently when skin temperature increases during a fire

Study:

- As Skin temperature rises so does the Permeability of the skin.
- The Strongest in the Neck, Jaw, Face and Crotch
(2-4 degrees of Skin temperature = 200-400 times more Permeable)

THE RESULTS ARE UNDERESTIMATED

HEALTHY WORKER EFFECT

PRESUMPTIVE LEGISLATION

- OUR LEGAL ABILITY TO SUPPORT OUR FELLOW FIRE FIGHTERS**
- TREAT CANCER DEATHS AS LINE OF DUTY DEATHS**

PRESUMPTIVE LEGISLATION

NOT A NEW IDEA

PERCIVAL POTT

**FIRST TO IDENTIFY A CONNECTION
BETWEEN SOOT AND CANCER**

PERCIVAL POTT

**CHILDREN WORKED AS
CHIMNEY SWEEPS IN THE
1700'S**



PERCIVAL POTT

**HIS WORK RESULTED IN THE CHIMNEY
SWEEPER ACT OF 1786**

FIRE FIGHTERS ARE PRESENT DAY CHIMNEY SWEEPS



PRESUMPTIVE LEGISLATION

**REVERSES LEGAL ONUS ONTO THE
EMPLOYER TO PROVE THAT THE
CANCER IS NOT CONNECTED TO
FIREFIGHTING**

PRESUMPTIVE LEGISLATION

ACTS AS A GREAT EDUCATOR

PRESUMPTIVE LEGISLATION

**ALLOWS US TO CREATE A
PROTOCOL TO MINIMIZE OUR
CANCER RISKS WHERE WE CAN**

CONCLUSION

- **ANEDOTAL MEDICAL
INFORMATION FROM DOCTORS
AROUND THE WORLD**

CONCLUSION

- **OUR WORKPLACE IS KILLING US**
- **WE HAVE NO WAY TO FULLY PROTECT OURSELVES**
- **THE SITUATION IS GETTING WORSE**

CONCLUSION

**GOVERNMENTS AND POLITICIANS
NEED TO ADMIT THERE IS A
PROBLEM**

**THIS PRESENTATION IS
BEING DONE IN MEMORY OF
THE MANY FIRE FIGHTERS
WHO HAVE DIED OF
OCCUPATIONAL CANCER WITH
NO SUPPORT OR
ACKNOWLEDGMENT
FROM THEIR
POLITICAL LEADERS**