

# Day 1: Continual Education Session Day (CES) Monday 26th May

Click on the  
presenter  
name to see  
abstract and  
bio

0730-0800	Registration (1st floor foyer)		
	<b>Topaz 2/3 room</b>	<b>Aquamarine 1 room</b>	<b>Aquamarine 2/3 room</b>
0800-0945	<b><u>CES 1:</u></b> <b><u>Chemical exposure modelling - an important tool for the occupational hygienist</u></b> <u>Joost van Rooij</u> <u>(Caeser Consult)</u>	<b><u>CES 2:</u></b> <b><u>Lead Masterclass</u></b> <u>Andrew Orfanos</u> <u>(VA Sciences)</u>	<b><u>CES 3:</u></b> <b><u>A toolbox for aerosol monitoring and management in the workplace</u></b> <u>Dr. Emanuele Cauda</u> <u>(NIOSH Center for Direct Reading and Sensor Technologies)</u>
0945-1005	Morning tea on 1st floor (20mins)		
1005-1150	<b><i>CES 1 continued:</i></b> Chemical exposure modelling - an important tool for the occupational hygienist	<b><i>CES 2 continued:</i></b> Lead Masterclass	<b><i>CES 3 continued:</i></b> A toolbox for aerosol monitoring and management in the workplace
1150-1240	Lunch in exhibition space on ground floor (50mins)		
1240-1425	<b><i>CES 1 continued:</i></b> Chemical exposure modelling - an important tool for the occupational hygienist	<b><i>CES 2 continued:</i></b> Lead Masterclass	<b><u>CES 4:</u></b> <b><u>LEV sizing, design &amp; filters - build your own LEV!</u></b> <u>Geoff Ebdon</u>
1424-1445	Afternoon tea in exhibition space on ground floor (20mins)		
1445-1630	<b><i>CES 1 continued:</i></b> Chemical exposure modelling - an important tool for the occupational hygienist	<b><i>CES 2 continued:</i></b> Lead Masterclass	<b><i>CES 4 continued:</i></b> LEV sizing, design & filters - build your own LEV!
<b>1700-1900</b>	<b>Welcome function on ground floor in exhibition space (nibbles and drinks)</b> <b>Dress code: Smart casual</b>		

## Exhibition:

The exhibition will be held in the Anchorage room on the ground floor of the Hilton.

- Monday, 26 May 2025: 11:30 – 16:30 and 17:00 – 19:00 (Exhibition & Welcome Function)
- Tuesday, 27 May 2025: 09:00 – 16:30
- Wednesday, 28 May 2025: 09:00 – 15:30

Click exhibition image to see details of all our exhibitors



# Day 2: Conference

## Tuesday 27th May

Click on the presenter name to see abstract and bio

Time	Plenary room - Aquamarine 2/3		
0830-0900	Registration (1st floor foyer)		
0900-0920	Opening ceremony - Mihi Whakatau President Address – Sage Robinson		
0920-0930	Update - Health and Safety Association of New Zealand (HASANZ) Mike O'Brien		
0930-0940	Update - International Occupational Hygiene Association (IOHA) Nancy Wilk		
0940-1025	<b>Keynote 1 -Driving Change in Occupational Health and Hygiene</b> <u>Nancy Wilk (Senior Technical Director - WSP Canada, President - IOHA, Board Rep - ACGIH and IOHA)</u>		
1025-1045	Morning tea in exhibition space on ground floor (20mins)		
	Aquamarine 2/3 room	Aquamarine 1 room	Topaz 2/3 room
1045-1115	<b>Expert witness for occupational hygienists-</b> <u>Philippa Gibson (Health Risk Management)</u>	<b>From lipstick to lunch plates: Unmasking PFAS in everyday essentials-</b> <u>David Springer (Envirolab)</u>	<b>Workshop:</b> <b>Collaboration, the secret sauce to advancing musculoskeletal injury prevention in construction with 'Work Should Not Hurt'</b> <u>Chris Polaczuk (CHASNZ)</u>
<i>Optional: Move between sessions</i>			
1120-1150	<b>When science wins: Using occupational hygiene to challenge regulatory findings</b> <u>Kerry Cheung (Better Work Health)</u>	<b>Fighting the Asbestos battle in South Africa</b> <u>Ilze Schoeman (Asbestos-ID)</u>	
<i>Optional: Move between sessions</i>			
1155-1225	<b>Why hygiene reports come back to bite you...</b> <u>Peter Aspinall (Halliwell)</u>	<b>Chromium-6 exposure matrix to overcome difficulties in exposure assessments</b> <u>Andre Winkes (Arbo Unie)</u>	<b>A Musculoskeletal Risk Management Approach for Occupational Hygienists</b> <u>Leanne Hunter (ProErgo+ Limited)</u>
1225-1315	Lunch in exhibition space on ground floor (50mins)		

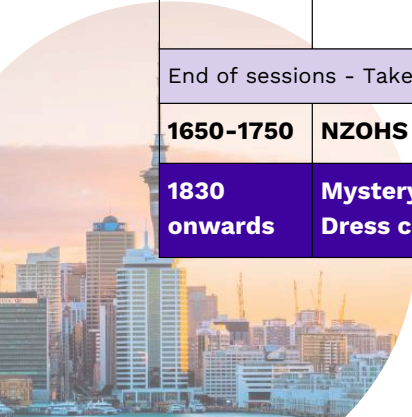


# Day 2 cont.

## Tuesday 27th May

Click on the presenter name to see abstract and bio

Time	Plenary room - Aquamarine 2/3		
1225-1315	Lunch in exhibition space on ground floor (50mins)		
1315-1400	<b>Keynote 2 - Protected Disclosure – The Price of Integrity</b> <u>Marty Byrne</u> (Chief Executive - Christchurch and Hanmer Attractions)		
	Aquamarine 2/3 room	Aquamarine 1 room	Topaz 2/3 room
1405-1435	<b>Workshop:</b> <b>Collaboration in action: When hygienists and H&amp;S teams team up</b> <u>Dr. Mary Obele</u> (Specialist in Occupational and Environmental Medicine)	<b>Occupational health nurses: Your hidden asset in workplace health</b> <u>Jane O’Kane</u> (NZOHNA)	<b>Heat stress assessment using ACGIH and AIOH Tools</b> <u>Johnny Fernandez</u> (Air Matters).
	<i>Optional: Move between sessions</i>		
1440-1510		<b>Synergy in health: Integrating health monitoring and occupational hygiene for a healthier workplace</b> <u>Carolyn Haybittle</u> (Health New Zealand Te Whatu Ora).	<b>Case Study: Using exposure modelling to estimate USAR rescue workers’ exposure to vibration from cutting and power tools</b> <u>Trudy Geoghegan</u> (WorkSafe New Zealand)
1510-1530	Afternoon tea in exhibition space on ground floor (20mins)		
1530-1600	<b>How many Occupational Hygienists is Enough?</b> <u>Dr. Sharann Johnson</u> (IOHA).	<b>The Effect of Smelter Emissions on Worker Lung Function</b> <u>Andrew Orfanos</u> (VA Sciences).	<b>Protecting those who protect us: A case study of Urban Search and Rescue (USAR) emergency responders’ exposures to health hazards during simulated post-earthquake rescue operations</b> <u>Trudy Geoghegan</u> (WorkSafe New Zealand)
	<i>Optional: Move between sessions</i>		
1605-1635	<b>Leading Work-Related Health Improvements in Uncertain Times</b> <u>Miriska Gerber</u> (Health New Zealand - Te Whatu Ora).	<b>Pesticide exposure assessments: Using skin swabs and biological monitoring as detection methods</b> <u>Leon Pretorius</u> (Exposure Science Consulting).	<b>Trends in Occupational Diseases in Korea Over the Past Decade (2014–2023).</b> <u>Professor Doo Yong Park</u> (Hansung University, South Korea).
End of sessions - Take a break			
1650-1750	<b>NZOHS Annual General Meeting (AGM) in Plenary room - Aquamarine 2/3</b>		
1830 onwards	<b>Mystery Dinner (Meet in the conference registration foyer)</b> <b>Dress code: Smart casual</b>		



# Day 3: Conference

## Wednesday 28th May

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Time	Plenary room - Aquamarine 2/3		
0830-0900	Registration (1st floor foyer)		
0900-0910	Welcome and Introduction		
0910-0920	Update - Asian Network of Occupational Hygienists (ANOH) Phillip Hibbs		
0920-0930	Update - Commit2Fit - Lucre Pfefferman		
0930-1015	<b><u>Keynote 3: The Evolution of Occupational Hygiene: Embracing Sensor Technologies</u></b> <u>Dr. Emanuele Cauda (Director - NIOSH Center for Direct Reading and Sensor Technologies, Research Engineer -(NIOSH)).</u>		
1015-1035	Morning tea in exhibition space on ground floor (20mins)		
	Aquamarine 2/3	Aquamarine 1 room	Topaz 2/3 room
1035-1105	<b><u>Scaling occupational hygiene capability: Implementing a digital solution for exposure assessment</u></b> <u>Samantha Connell</u> (Indorama Ventures PCL)	<b><u>Exploring work-related suicide: Insights from reviews and legislative changes</u></b> <u>Jamie Mallinder</u> (Sentis)	<b><u>Workshop: Understanding diagnostic competence, validity, accuracy, reliability &amp; repeatability</u></b> <u>Wendy Spence</u> (Business Health Services)
<i>Optional: Move between sessions</i>			
1110-1140	<b><u>The new ECETOC TRA worker tool 3.2: Utilising workplace measurements to evaluate and improve exposure predictions of the screening tool</u></b> <u>Joost van Rooij</u> (Caeser Consult)	<b><u>Managing nightshift fatigue in New Zealand electrical distribution industry - An internally based research reflection</u></b> <u>Matt Sadgrove (Delta)</u>	
<i>Optional: Move between sessions</i>			
1145-1215	<b><u>Practical knowledge for the use of the Bayesian statistical model</u></b> <u>Nicholas Browne</u> (Air Matters)	<b><u>Identifying psychosocial risk factors for occupational hygienists</u></b> <u>Richard Wilkinson</u> (Tetra Tech Coffey)	<b><u>What businesses really need from occupational hygiene reports</u></b> <u>Bridgette Jennings</u> (Fletcher Building)
1215-1305	Lunch in exhibition space on ground floor (50mins)		



# Day 3 cont.

## Wednesday 28th May

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Time	Plenary room - Aquamarine 2/3		
1215-1305	Lunch in exhibition space on ground floor (50mins)		
1305-1335	<b>Workshop:</b> <b><u>Australian exodus - Gold and Dust?</u></b> <u>Suzanne Broadbent</u> (COH Resources).	<b><u>Using generative AI to generate occupational hygiene reports</u></b> <u>Karla Anderson</u> (Air Matters).	<b><u>Strategy of Industrial Hygiene &amp; Occupational Health Implementation in Integrated Energy Company</u></b> <u>Muthia Ashifa</u> (PT Adaro Energy Indonesia Tbk).
	<i>Optional: Move between sessions</i>		
1340-1410		<b><u>Science speaks: 3 powerful ways to connect with non-scientists</u></b> <u>Al Threlfall</u> (Blackstone Occupational Health and Hygiene).	<b><u>Copper Chromium Arsenate (CCA): An occupational exposure assessment and control implementation story</u></b> <u>Dr. Sage Robinson</u> (Exposure Science Consulting).
<i>Move to plenary room</i>			
1415-1500	<b><u>Keynote 4: Respirable Crystalline Silica: Engineered Stone the Challenges of Managing Exposures in the UK</u></b> <u>Adrian Parris</u> (President - British Occupational Hygiene Society (BOHS)).		
1500-1530	Awards presentation		
1530-1545	Conference Close and Incoming Presidents address - Miriska Gerber (NZOHS)		
<b>Post event tea and networking (1st floor)</b>			



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# Continuing Education Session

## JOOST VAN ROOIJ

Caesar Consult



### Chemical exposure modelling - an important tool for the occupational hygienist

In Europe, the use of quantitative exposure models has increased enormously due to the introduction of the REACH Regulation. These exposure modelling tools help the occupational hygienist, without too many costs, to distinguish work activities with low and possible increased exposure to chemicals, and to decide whether measurements are necessary or not. The most commonly used exposure models are the ECETOC-TRA Worker exposure model (first tier), Stoffenmanager and the Advanced REACH tool (ART, higher tier). These models/tools are available via internet and free of charge. The use of these quantitative chemical exposure models is not yet very common among occupational hygienists in New Zealand.

This CES provides a concise and practical overview of chemical exposure modelling for the occupational hygienist and covers/provides the following:

- Role of exposure modelling in chemical risk assessment according to the European standard EN-689.
- Insight in ECETOC-TRA Worker Exposure Tool: algorithm, exposure modifiers (input), and exposure estimates (output).
- Stoffenmanager: algorithm, exposure modifiers (input), and exposure estimates (output).
- Insight in the Advanced Reach Tool (ART): algorithm, exposure modifiers (input), and exposure estimates (output).
- Application domain of these exposure assessment tools.
- Reliability and validity of these exposure assessment tools.

Examples will be shown during the session and possible issues and practical experiences will be shared.

### Profile

Joost van Rooij has over 30 years of experience as a consultant in occupational hygiene and toxicology. He is an occupational hygienist and toxicologist (EuroTox registered). He is owner of Caesar Consult and co-founder of Chemrade Software BV in The Netherlands. Fields of special interest are: chemical exposure assessment tools, biological monitoring, REACH, solvents, PAH, asbestos, chromium, skin absorption of chemicals, retrospective exposure assessments related to health claims.

He was president of the Netherlands Occupational Hygiene Association (NVvA) from 2012 – 2024 (12 years). He lives in The Netherlands, is married and has three children.

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# Continuing Education Session

## ANDREW ORFANOS

VA Sciences



### Lead Masterclass

The aim of this professional development course will provide delegates with a comprehensive understanding of how to effectively identify, characterise, control and manage lead exposures in the human environment.

This will cover all aspects of managing potential lead exposures across a wide range of scenarios including industrial, office, home and community settings using numerous real World examples. Specific topics that will be addressed in this training course include:

- Lead pharmacokinetics, health effects and high risk receptors
- Exposure characterisation and quantification
- Exposure Control Strategies
- Biological Monitoring Programs
- Working safely in a Lead risk environment
- Management of Lead in the Community
- Hazardous materials management and lead abatement and remediation

### Profile

Currently serving as the Division Director of Occupational Hygiene at VA Sciences, Andrew is a Certified Occupational Hygienist, and a Fellow of the Australian Institute of Occupational Hygienists (AIOH).

Working within the private sector for organisations such as Nyrstar, BHP Billiton and Caltex Australia Andrew has gained extensive experience in developing, implementing and effectively managing risk based Lead exposure management programs across a diverse range of human receptors, scenarios and operations worldwide.

Andrew worked as the site occupational hygienist at the Port Pirie Lead Smelter for over 5 years where he effectively characterised both workplace and community Lead exposure pathways, implemented comprehensive workplace and community Lead management programs, and developed risk based governance metrics to provide management and corporate oversight of their Lead risk profile.

Since then Andrew has provided specialist lead exposure management advice and support to a wide range of clients including Trevali, Ma'aden, and the South Australian Government and has developed a novel risk based approach to characterise Lead exposure risk associated with Lead contaminated dusts.

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# Continuing Education Session

**Dr. EMANUELE CAUDA**

**NIOSH Center for Direct Reading and  
Sensor Technologies**



## **A toolbox for aerosol monitoring and management in the workplace**

Aerosols are a common hazard for many workplaces. Aerosols are a complicated hazard due to the range of physical, chemical, and health-related properties. It is the responsibility of the occupational hygienist to assess the presence of aerosols in the workplace, monitor the hazard in terms of spatial and temporal evolution and the exposure of workers, and assist in mitigation strategies. All these activities require a good understanding of the hazard, a proper selection and adoption of tools for monitoring the hazard and exposure, and knowledge about engineering and administrative solutions. The PDC will cover these aspects with up to date material, and activities from real world cases.

### Agenda for the session

- Presentation and discussion about the tools available to occupational hygienists for monitoring aerosols in the workplaces
- Brief analysis of the mitigation strategies available in terms of engineering controls
- Group activities on real-world cases of occupational aerosols from a system approach

## **Profile**

Dr. Emanuele Cauda is a Research Engineer at National Institute for Occupational Safety and Health (NIOSH). Emanuele is also the Director of the NIOSH Center for Direct Reading and Sensor Technologies. In the frame of the Center, he coordinates several activities on the selection and use of advanced monitoring techniques for aerosols, gas and vapors, fatigue, heat, and other hazards. One of the current initiatives of the Center is called “Right Sensors Used Right”.

Dr. Cauda is interested in the several aspects related to direct reading methodologies and sensors including human-technology interaction, data processing and modeling, and ethical considerations. Dr. Cauda is convinced that the future of occupational hygiene and health and safety entails the adoption of complementary approaches and methodologies.



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# Continuing Education Session

## GEOFF EBDON

### NZ Duct and Flex

### **LEV sizing, design & filters - build your own LEV!**

A practical guide to select the best solutions for your client. 30 mins presentation followed by small teams practical solution exercise in which you design a LEV solution to a real world customers problem.

This CES covers:

- How to size a fan and filter.
- How to select the right type of filter and fan for the dust / fume concerned
- Abrasive dusts, explosive dusts, sticky dusts and fumes - extraction and filtration.
- Initial Cost / Ongoing Maintenance Cost considerations
- Simple sizing guidance sheets to take away at end of workshop



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# Keynote Speaker 1: NANCY WILK



**Senior Technical Director - WSP Canada,  
President - IOHA, Board Rep - ACGIH and IOHA**

## **Driving change in occupational health and hygiene**

Global data indicates that we are not effectively preventing chronic, non-communicable occupational disease. Alternative approaches to classical occupational health and hygiene are needed to realize improvement. Occupational health and hygiene and worker well-being are priorities for organizations around the globe. Aspects of holistic, integrated approaches to occupational disease prevention and improved worker well-being, e.g., Total Worker Health®, overlap with Environmental, Social, and Governance. These intersections represent opportunities to collaborate, pool resources, and advance performance and outcomes for both. Aligning with the conference theme this keynote examines opportunities for partnerships and innovative solutions to support workers through disease prevention and improved well-being.

## **Profile**

Nancy is a Senior Technical Director - EHS and Industrial Hygiene with WSP Canada, Mine Water & Environment group located in Cambridge, Ontario (Canada). Nancy is a Certified Industrial Hygienist (CIH) through the American Board of Industrial Hygiene and has practiced comprehensive occupational hygiene since 1986. Her career has included ten years as a provincial offences officer enforcing occupational health and safety legislation, a risk management director with a large university in Ontario Canada, Global Vice President of HSSE for Golder Associates Corporation, and consulting for WSP in EHS and industrial hygiene serving the mining sector.

Nancy is the current IOHA President and Board Director for IOHA on behalf of ACGIH. In 2024, ACGIH awarded Nancy the Meritorious Achievement Award. In 2023, the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) awarded Nancy with a CIM Distinguished Lecturer Award for her work on raising awareness of chronic non-communicable occupational disease prevention and advancing worker well-being in the mining sector.

In 2022, AIHA awarded Nancy with the Aileen Yankowski Outstanding Leader of the Year Award. In 2020, the Occupational Hygiene Association of Ontario awarded Nancy with the Hugh Nelson Award of Excellence in Occupational Hygiene. Nancy has a Master of Health Science degree specializing in Occupational Hygiene from the Faculty of Medicine at the University of Toronto.

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# Keynote Speaker 2:

**MARTY BYRNE**

**Chief Executive - Christchurch and  
Hanmer Attractions**



## **Protected Disclosure – the Price of Integrity**

In early 2021 Marty Byrne was contracted to undertake a business review of a Nelson-based Marine Engineering company. The company concerned had been prosecuted by WorkSafe in relation to a workplace injury that occurred in 2019 and had pleaded guilty to the relevant charges. Only days after sentencing a series of events transpired that changed Marty's life and also caused him to realise the personal challenges and costs one can incur by holding to one's values.

## **Profile**

Marty worked in the Maritime and Ports sector from 1984, originally in operational roles and then since 1997 in Senior Management roles, in Fiji, Australia and New Zealand.

In 2001 he was appointed GM Business Development of Flinders Ports South Australia and in January 2004 was appointed CEO of Port Nelson Ltd (PNL), a position he held until July 2019. During his time as CEO of Port Nelson he served as Vice President of the International Association of Ports and Harbours (IAPH) representing Asia / Oceania and in 2019 became one of only three New Zealanders to ever be made an honorary member of IAPH.

He has served as a member of the National Steering Group of the NZ Business Leaders Health and Safety Forum and from 2019 to early 2024 he operated an independent business, Nautilus Consulting, principally servicing the Maritime, Ports and Logistics sectors in NZ .

In February of 2024 he was appointed Chief Executive of Christchurch Attractions which is a privately owned business that operates the Christchurch Trams, Christchurch Gondola and Punting on the Avon in Christchurch. They also operate Hanmer Attractions in Hanmer Springs which covers Jet Boating, Quad Biking, Bungy Jumping, Rafting and Laser Clay shooting.



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# Keynote Speaker 3:

Dr. EMANUELE  
CAUDA



**NIOSH Center for Direct Reading and Sensor Technologies**

## **The evolution of occupational hygiene embracing sensor technologies**

Professionals involved in occupational hygiene have the responsibility to protect workers from several hazards and stressors. This can be accomplished by adopting frameworks which can be slightly different around the world, but they all focus on the identification and assessment of the hazard, and the management of risk. Occupational hygienists can use several tools to carry out their different activities. Among these tools, sensor technologies can provide invaluable in-time information and potentially timely feedback.

The keynote will propose critical considerations about the adoption and operationalization of sensor technologies from multiple perspectives: technology, data processing, workers engagement, value extraction, and ethics.

### **Profile**

Dr. Emanuele Cauda is a Research Engineer at National Institute for Occupational Safety and Health (NIOSH). Emanuele is also the Director of the NIOSH Center for Direct Reading and Sensor Technologies. In the frame of the Center, he coordinates several activities on the selection and use of advanced monitoring techniques for aerosols, gas and vapors, fatigue, heat, and other hazards. One of the current initiatives of the Center is called “Right Sensors Used Right”.

Dr. Cauda is interested in the several aspects related to direct reading methodologies and sensors including human-technology interaction, data processing and modeling, and ethical considerations. Dr. Cauda is convinced that the future of occupational hygiene and health and safety entails the adoption of complementary approaches and methodologies.

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# Keynote Speaker 4:

## ADRIAN PARRIS

Occupational Hygiene & Chemical  
Safety Manager - Sellafield Ltd

President - BOHS



### **Respirable Crystalline Silica: Engineered Stone the Challenges of Managing Exposures in the UK**

There has been a global spike in accelerated silicosis cases in the kitchen worktop industry because of the widespread use of engineered stone, this has resulted in Australia banning the use, supply, manufacture, and import of certain forms of engineering stone, primarily due to concerns about the risk of silicosis from silica dust exposure during processing and installation. This has led to the UK rethinking and looking at a multi-layered approach to protect workers against health risks. This talk will provide an overview of the current knowledge, the issues faced in the UK and the responses of the government, regulators and BOHS to the rising number of accelerated silicosis cases.

### **Profile**

Adrian is a Chartered Fellow of BOHS, during his career he has worked within the Speciality Chemical and Steel sectors but for the last 14 years for Sellafield Ltd in the Nuclear Sector as an Occupational Hygiene and Chemical Safety Manager. He sits on BOHS Board of Trustees, is Co-chair of Breathe Freely Manufacturing, is an examiner, undertaking professional discussions for certificate and diploma qualifications and has the honour of being this year's BOHS President Elect.



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# Philippa Gibson

## Health Risk Management

### **Expert witness for occupational hygienists**

With the regulator moving away from in house occupational hygiene expertise, we might see more hygienists being asked to provide expert witness for the prosecution, or the defence. An ex-inspector and prosecutor will share experiences and tips on expert witness for acute or chronic health risk prosecutions.

#### **Profile**

Philippa is a certified industrial hygienist (CIH) and certified occupational hygienist (COH). She is a past president of the NZOHS, and past board member of the International Occupational Hygiene Society. She was with the health and safety regulator for 17 years and prior to that a consulting occupational hygienist.

# Chris Polaczuk

## CHASNZ

### **Collaboration, the secret sauce to advancing musculoskeletal injury prevention in construction with 'Work Should Not Hurt'**

The Institute for Work & Health (IWH) in Canada featured CHASNZ and our Work Should Not Hurt programme as a pivotal case study, as an example of how health and safety advocates can bring research to the worksite to promote positive change. Our presentation will demonstrate one of these initiatives alongside some of our key stakeholders and collaborators. Together we will discuss what made our collaboration successful, and what others can learn from it

#### **Profile**

Chris Polaczuk leads the Construction Health and Safety New Zealand (CHASNZ) Ergonomics programme. An Occupational Therapist in a former life Chris has a special interest in the prevention of work related musculoskeletal conditions.



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# David Springer

Envirolab

## From lipstick to lunch plates: Unmasking PFAS in everyday essentials



Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals widely used for their water-resistant, grease-proof, and durable properties. Dubbed "forever chemicals," PFAS persist in the environment and bioaccumulate, raising concerns about their potential health impacts, including links to cancer, immune system suppression, and developmental issues. While awareness of PFAS contamination is often tied to industrial sources such as firefighting foams, many consumers are unaware of their presence in everyday products. This talk explores the hidden pathways by which PFAS infiltrate our daily lives, from cosmetics to cookware, and their alarming potential to cycle through the environment and food chain.

Awareness of PFAS contamination has historically focused on industrial applications and environmental hotspots, with firefighting foam being the most widely recognized source. However, PFAS are also deliberately used in a range of consumer goods, where their unique properties make them desirable. These include cosmetics (to improve product longevity and spreadability), grease-resistant food packaging, and non-stick coatings for cookware. Despite regulatory scrutiny and growing awareness, many consumers remain unaware that PFAS are present in products they use daily, potentially exposing them to harmful levels over time.

Our research highlights the widespread prevalence of PFAS in everyday items, underscoring the need to shift the narrative beyond firefighting foam. While the use of PFAS in consumer goods is less visible, it has far-reaching implications, not only for human exposure but also for environmental contamination. For example, food packaging treated with PFAS can leach these chemicals into food and subsequently into soil,

### Profile

David is Envirolab's advocate and a key figure in the science industry. He represents Envirolab at conferences, forums and universities, fostering strong industry relationships. And with a PFOS in blood level at 6ppb, exactly the same for the last 8 years, he believes he is now in a state of PFAS equilibrium with the universe.



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# Kerry Cheung

## Better work health

### **When science wins: Using occupational hygiene to challenge regulatory findings**



Good health risk management protects organisations – not just from workplace hazards, but also from regulatory action based on incomplete assessments. This presentation examines how the Interior Health Authority (IHA) successfully challenged a WorkSafeBC sanction by using occupational hygiene data, structured risk management systems, and evidence-based arguments.

WorkSafeBC alleged that IHA failed to control formaldehyde exposure risks in healthcare settings. However, a thorough review of exposure data, control measures, and regulatory criteria revealed flaws in their assessment. By leveraging strong occupational hygiene practices and presenting clear evidence, IHA demonstrated compliance and overturned the sanction.

This session will break down the key lessons: the importance of well-documented risk assessments, how to challenge incorrect regulatory findings, and why robust occupational hygiene systems are an organisation's best defence. Attendees will gain practical insights into using data to defend workplace health programmes and ensure compliance.



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# Ilze Schoeman

## Asbestos-ID

### Fighting the Asbestos Battle in South Africa

South Africa's Asbestos Abatement Regulations (2020) require all property owners with asbestos-containing materials to maintain an up-to-date asbestos inventory, risk assessment, and management plan—reviewed biennially and approved every six years by a designated authority. Despite these requirements, widespread non-compliance remains. This presentation provides an overview of South Africa's regulatory framework and explores lessons learned through real-world case studies.

Drawing on over 60 years of combined experience between Dr. JJ Schoeman, Marguerite Pullen, and the presenter, this session highlights the practical application of regulatory requirements through high-risk asbestos projects, including personal and environmental monitoring. One case study details the asbestos remediation of a 14-storey commercial building, where fibre levels exceeded occupational exposure limits by 10 to 20 times, resulting in a R96 million (\$12.6 million NZD adjusted) remediation cost. The project underscores the critical importance of real-time exposure monitoring, effective suppression techniques, and regulatory compliance.

Key takeaways include the importance of using water to suppress airborne fibres, the value of partnering with experienced, licensed asbestos contractors (RACs), and the need to reclassify certain materials, such as ceiling boards, due to unexpectedly high fibre release rates. The presentation concludes with insights into regulatory gaps, challenges with competent person requirements, and recommendations for improving public and occupational health protections.

### Profile

With close to two decades of experience in occupational hygiene, Ilze has built strong expertise across a broad range of workplace health hazards, including noise, hazardous chemical agents, vibration, indoor air quality, ergonomics, ventilation, and asbestos. Much of this experience was gained in the steel, iron, and manganese industries, where Ilze developed a practical and detailed approach to risk assessment and control. Since becoming self-employed in 2020, Ilze has specialised in asbestos-related services under the Asbestos Abatement Regulations. This work includes field monitoring, fibre counting, asbestos identification, developing inventories, conducting risk assessments, and preparing asbestos management plans.

Ilze holds a Certificate in Occupational Hygiene from the University of Pretoria and made history as the first person in South Africa to pass the SAIOH Occupational Hygiene Technologist exam without a tertiary qualification. Additional achievements include the Mine Environmental Control Intermediate Certificate (Paper 1) and completion of all four core and three optional BOHS Intermediate modules. Ilze is currently working toward the W504 Asbestos and Other Fibres course and aims to complete the BOHS Certificate of Operational Competence in Occupational Hygiene.

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# Peter Aspinall

## Better work health

### Why hygiene reports come back to bite you...



Attendees of this short presentation will learn the importance of delivering accurate occupational hygiene reports. They will understand the critical role these reports play in identifying workplace hazards and controls, and how recommendations and outcomes can vary if a planned methodology or scope is not well delivered or applied.

When reports contain incorrect information or lack technical accuracy, they can lead to significant problems. Inaccurate hygiene reports may not only compromise the health, safety, and well-being of individuals but also significantly impact business operations and costs. Poorly written reports can expose organizations to legal risks, with inaccurate report findings leading to insurance disputes and damage to the company's reputation, which can be particularly problematic in larger industries with extensive claims.

The aim of this short presentation is to highlight the key skills required for those responsible for drafting reports and those signing off on them. Attendees will learn best practices for documenting hygiene data, improving reports with detailed, accurate, and compliant scope information, and helping prevent the legal and operational issues that can arise from poorly written reports.

This presentation will demonstrate industry examples where assumed knowledge, poorly determined scope of work, and non-compliant reports have raised inaccurate health concerns or led to legal challenges.

### Profile

Peter conducts Forensic Health Investigations based on 20+ years' practical experience in Occupational Hygiene and Allied Health roles across Australia & New Zealand, with consulting and corporate hygiene work in mining, oil & gas, insurance, governments, public health, defence industry, construction & manufacturing industries.



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# Andre Winkes

Arbo Unie

## **Chromium-6 exposure matrix to overcome difficulties in exposure assessment**

To protect metal structures against corrosion hexavalent chromium containing paint is very widespread used. The chromium-6 is usually used in the form of zinc chromate, lead chromate or other insoluble chromate compounds.

It is very difficult to establish if the protecting paint contains chromium-6. It is also difficult and expensive or to measure the concentration of chromium-6 in the coating. Especially when old paint is removed exposure to dusts that contain chromium-6 will occur.

The occupational limit of chromium-6 is very low in the Netherlands because of the severe negative health effects. Chromium-6 is a genotoxic carcinogen, which means there is no safe exposure limit. Air monitoring of chromium-6 in dusts is very costly and the analysis is not consistent.

To assist small and medium companies a management regime is developed that includes a simple exposure matrix. The exposure matrix is based on available measurements.

The objective of this management regime is to provide everyone with guidelines for the safe processing and removal of coatings containing hexavalent chromium. The management system and its background will be explained, as well as an exposure study of lead chromate in a situation where paint is removed from very large sign structures that hold huge traffic signs above the freeway.



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# Leanne Hunter

ProErgo+ Limited

## A Musculoskeletal Risk Management Approach for Occupational Hygienists

Musculoskeletal disorders (MSDs) continue to represent around 30% of all workplace harm in Aotearoa New Zealand<sup>1</sup>. Businesses have, or still rely on manual handling training as a key control to manage musculoskeletal risks. But there is much evidence that indicates that ‘how to lift’ or ‘manual handling’ training programs are ineffective.

‘How to lift’ training refers to workplace interventions that train workers in lifting techniques, use warm-ups or stretches, or rely on workers following generic principles such as using the ‘correct posture’<sup>2</sup>. But not all training is ineffective. Businesses need to provide training and instruction on hazardous manual task risk management. This includes workers understanding the key risk factors and control measures associated with the work they undertake.

Work-related musculoskeletal disorders (WRMSDs) are complex with multiple, interacting contributing factors. These are grouped into five categories, biomechanical and physical, work organisation, environmental, psychosocial, and individual factors<sup>3</sup>. For too long we have focused solely on the physical or biomechanical factors which has led to a focus on manual handling training. But discomfort, pain, and injury causation are much more than the simplistic view where WRMSDs are caused by one or two physical factors.

The problem with relying on manual handling training as the sole control is that it relies on worker behaviour. It does not eliminate or minimise the exposure to the manual tasks or the range of contributing risk factors. And it does not reduce or prevent the development of WRMSDs<sup>2</sup>.

Under the Health and Safety at Work Act (2015), businesses or duty holders have a primary duty of care for workers. Practically, this means applying a risk management approach to WRMSDs. The steps include: identifying the hazardous manual tasks; assessing and controlling the risks by following the hierarchy of controls to either eliminate or minimise the risk; and reviewing the controls to ensure they are still in place and working as expected. Businesses may also find it useful to periodically monitor the musculoskeletal health of their workers.

In 2024/25 WorkSafe New Zealand published a range of screening and risk assessment tools including a contributing factors checklist that considers the range of risk factors<sup>4</sup>. These can be used as part of a toolkit. They provide a starting point to identify the key risk factors associated with common manual tasks such as: lifting, carrying, pushing and pulling, handling while seated, and repetitive tasks using the upper limbs. Other tools such as the APHIRM toolkit<sup>5</sup> may suit larger businesses and focus on psychosocial risks associated with WRMSDs.

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# Leanne Hunter cont.

ProErgo+ Limited

## A Musculoskeletal Risk Management Approach for Occupational Hygienists

Management buy-in is key to the success of this approach. Businesses need to understand the benefits and be committed to reducing the exposure to known risk factors associated with WRMSDs. There also needs to be genuine and meaningful worker engagement at all stages in this process.

Using different tools to apply a holistic approach to WRMSD risk management, following good work design principles, and implementing higher order controls will be more effective than relying on workers to 'lift correctly'.

### Profile

Leanne is the director and principal advisor at ProErgo+ Limited, a human factors and ergonomics (HFE) consultancy. She initially completed a sport and exercise science degree before gaining her Masters in Health Ergonomics from Surrey University in the United Kingdom (UK). Leanne has 20 years of health and safety experience working across most sectors both in New Zealand and the UK. She also holds a NEBOSH International General Certificate.

Leanne is a Certified Professional Member of the Human Factors and Ergonomics Society of New Zealand (HFESNZ) and most recently has worked in the HFE team at WorkSafe. Leanne uses a systems thinking approach and specialises in musculoskeletal health risk management. She is dedicated to providing HFE support to businesses and those working with business or industry groups to reduce worker pain, discomfort, and injury.



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# Dr. Mary Obele

Specialist in Occupational and Environmental Medicine



## Collaboration in Action: When Hygienists and H&S Teams Team Up

In this workshop, we'll explore how occupational professionals can work together to identify hazards, assess risks, and implement effective controls. For example, we'll cover cases where hygienists helped identify chemical exposure risks that the safety team then addressed with new PPE protocols, or how they collaborated on ergonomic assessments to prevent musculoskeletal injuries.

This interactive workshop will provide key insights into how cross-functional teamwork can elevate workplace safety, health, and well-being.

## Profile

Dr. Mary Obele is a highly respected Occupational and Environmental Medicine Physician. With extensive experience in workplace health, she provides expert advice on fitness for work assessments, rehabilitation, and environmental health concerns. She has also served as an expert witness and works closely with organisations and government bodies to improve workplace health and safety.

Dr. Obele has a strong interest in construction, quarrying, mining, and other safety critical work. She is a vocal advocate for collaboration with occupational hygienists when providing comprehensive occupational health services, emphasising their critical role in maintaining safe workplaces.



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# Johnny Fernandez

## Air Matters

### Heat Stress Assessment Using ACGIH and AIOH Tools



Although the climate or weather conditions in New Zealand are cold to mild in general, it could become hot during the summer season. Therefore, it can expose workers to the hazard of heat stress and they will be at risk from heat-related illnesses. The observation of the early onset of heat-related symptoms is used as an indication of workers' potential risks from heat stress. However, using the latter as the only tool is reactive and will not be sufficient to manage heat stress in a workplace.

Heat stress occurs when a worker's workplace (ambient temperature, radiant temperature, humidity and air movement), uniform (PPE) and activities interact all together to induce an increase in inner body temperature. As a natural body response, the body's thermoregulatory system is activated to dissipate heat from within. This natural process produces heat strain on a worker's body which leads to heat-related illness or even fatality in the worst-case scenario. Therefore, it is important not to rely on the onset of symptoms alone but to assess the potential adverse health impact of heat stress by considering the worker's workplace conditions, tasks undertaken and personal factors. This can be done with the use of heat stress indices as a tool.

The short presentation aims to provide the audience the information about the existing tools both from the American Conference of Governmental Industrial Hygienists (ACGIH) and the Australian Institute of Occupational Hygienists (AIOH). This will be carried out by presenting the three-tier protocols (screening and basic thermal assessment, predicted heat strain (PHS), and heat strain and physiological monitoring) established by the two referenced organisations that will provide the audiences with the opportunity to select the applicable tool/s for their future use when assessing heat stress in New Zealand.

The presentation will expound on the three-tier protocols by comparing them side by side to provide practical usage of each tool and identify their respective limitations. By the end of each presentation, it is the hope of the presenter to bring awareness and familiarity with the available approaches to the audience to consider when assessing heat stress and therefore manage its potential adverse health impacts to the workers across New Zealand.

## Profile

Johnny Jimenez Fernandez is a Certified Industrial Hygienist have an Environmental and Sanitary Engineering degree and a licensed Sanitary Engineer in the Philippines. He joined Air Matters as a consultant in 2024, bringing a wealth of knowledge from his previous work in the Middle East where he has spent 20 years as an Industrial Hygienist. As a Certified Industrial Hygienist (CIH), his professional goal is to bring quality and excellence to the field of occupational hygiene. Johnny has an ongoing interest in studying and learning, and in his spare time, he enjoys cooking.

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# Carolyn Haybittle

Health New Zealand Te Whatu Ora

## Synergy in Health: Integrating Health Monitoring and Occupational Hygiene for a Healthier Workplace

In today's rapidly evolving work environments, the integration of health monitoring and occupational hygiene is paramount to ensuring the well-being of employees. This paper explores the synergistic relationship that Health NZ | Te Whatu Ora, New Zealand's largest employer, is starting on a journey to develop. It steps through the journey that the Occupational Hygiene and Occupational Health and Wellbeing team have embarked on to integrate health monitoring with occupational hygiene practices. By exploring the synergistic relationship between these two critical fields, we highlight how our combined efforts can and will lead to healthier, safer, and more productive workplaces across the Motu

Health New Zealand employs a diverse workforce across various sectors, each with unique occupational health challenges. Recognizing the need for a comprehensive approach to employee health, we have developed a synergistic model that combines continuous health monitoring with robust occupational hygiene practices. This model not only addresses immediate health concerns but also fosters long-term well-being and productivity.

Health monitoring is a proactive approach to identifying and managing health risks before they become critical. At Health New Zealand, we have in some districts implemented some health monitoring techniques, however the future is to streamline, nationalise and ensure that Health NZ include regular health screenings, biometric assessments, and wearable technology where we can. These tools provide real-time data on employees' health status, enabling early detection of potential issues such as respiratory problems, cardiovascular conditions, and musculoskeletal disorders. I want to share our direction in this space along with how we are planning to integrate the planning with occupational hygienist work

The integration of health monitoring and occupational hygiene at Health New Zealand is achieved through a multidisciplinary approach. Our occupational health team collaborates closely with hygiene specialists, safety officers, and management to develop and implement tailored health and safety programs. This collaboration ensures that health monitoring data informs hygiene practices and vice versa, creating a feedback loop that continuously improves workplace health standards.



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# Carolyn Haybittle

## Health New Zealand Te Whatu Ora

### Synergy in Health: Integrating Health Monitoring and Occupational Hygiene for a Healthier Workplace

The synergy between health monitoring and occupational hygiene has led to significant improvements in employee health and safety at Health New Zealand. Key outcomes include:

- **Early Detection and Intervention:** Health monitoring allows for the early identification of health issues, enabling timely interventions that prevent the escalation of conditions.
- **Reduced Absenteeism:** By addressing health risks proactively, we have seen a reduction in absenteeism due to illness and injury.
- **Enhanced Productivity:** A healthier workforce is a more productive workforce. Our integrated approach has led to increased employee engagement and productivity.
- **Cost Savings:** Preventive health measures and effective hazard control reduce healthcare costs and compensation claims, providing financial benefits to the organization.
- **Employee Well-being:** Our commitment to health and safety fosters a positive work culture, enhancing overall employee well-being and job satisfaction.

Health New Zealand's integrated approach to health monitoring and occupational hygiene exemplifies the potential of synergy in occupational health. By combining these two critical components, we have created a model that not only protects employees but also promotes their long-term health and productivity. This approach serves as a blueprint for other organizations seeking to enhance their occupational health programs and achieve a healthier workforce.

## Profile

Carolyn Haybittle discovered her passion for Occupational Health quite by accident, but after two decades in the field, her enthusiasm remains unwavering. Her expertise spans a diverse range of industries, including oil and gas, gold mining, manufacturing, and healthcare. Each sector has presented unique challenges and rewards, and Carolyn considers herself fortunate to have worked at Shell New Zealand, where she gained invaluable insights into exemplary occupational health practices.

Driven by a commitment to ensuring that workers do not suffer ill health due to unsafe work environments, Carolyn believes in the power of collective action among health professionals. At Health New Zealand, she collaborates with Occupational Hygiene and Occupational Nursing teams to develop health systems aimed at establishing a leading Occupational Health program, with a very small budget. We got a way to go, but we know where we are going.



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# Dr. Trudy Geoghegan

WorkSafe

## Case Study - Using exposure modelling to estimate USAR rescue workers' exposure to vibration from cutting and power tools



Urban Search and Rescue (USAR) teams use powerful cutting tools to tunnel into collapsed buildings, racing the clock to rescue people trapped inside after natural disasters. These tools transmit vibration to workers' hands, arms, or bodies, which can cause discomfort, loss of grip and long-term injury.

The same tools are used in similar ways in the construction and demolition industries, but the USAR working environment presents additional challenges in measuring and monitoring workers' exposure. For instance, the harsh physical environment and workers' variable work patterns make it difficult to undertake representative exposure measurements.

This case study will demonstrate how vibration exposure modelling was used to estimate USAR Technicians' exposure to hand-arm vibration. The UK Health and Safety Executive vibration exposure model was used with published vibration magnitude data for each tool, and work profiles developed in consultation with experienced USAR Trainers. The output from this work will be used to educate workers; improve controls; and inform decisions about whether further investment in tools or exposure measurements would be beneficial.

This presentation will summarise the controls recommended and discuss the benefits and limitations of this modelling approach. It will also highlight New Zealand regulations and WorkSafe guidance on managing vibration exposure hazards.

The lessons from this case study may be applicable to a wide range of industries where workers may use power tools or are exposed to vibration via tool or machinery such as: construction, demolition, landscaping and agriculture.

### Profile

Trudy is a hazardous substance scientist with 14 years of experience in hazardous substance management, emergency response, and regulation. She is a Technician Member of the New Zealand Occupational Hygiene Society and has recently joined WorkSafe New Zealand as a Specialist Health and Safety Inspector in the Major Hazard Facilities Team.

Trudy's background includes seven years as the National Hazardous Substances Advisor for Fire and Emergency New Zealand, where she provided specialist scientific advice during emergencies and worked on projects aimed at better understanding and reducing hazardous substance exposure for fire fighters and fire investigators. In 2023-24, she collaborated closely with the Urban Search and Rescue (USAR) team to conduct one of their first occupational hygiene studies.

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# Dr. Trudy Geoghegan

## WorkSafe

### **Protecting those who protect us: A case study of Urban Search and Rescue (USAR) emergency responders' exposures to health hazards during simulated post-earthquake rescue operations**

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# Professor Doo Yong Park

Hansung University, South Korea

## Trends in Occupational Diseases in Korea Over the Past Decade (2014–2023)

After a brief introduction to the Korean occupational health and safety (OHS) system to provide context for understanding the country's occupational disease compensation system, this presentation examines trends in occupational diseases in Korea over the past ten years, from 2014 to 2023.

During this period, both the number of occupational disease claims and approvals have increased significantly. In 2014, there were 9,211 occupational disease reviews, with 4,391 cases approved (47.7%). By 2023, the number of reviews had risen to 31,666, with 18,333 cases approved (57.9%). These trends in reviews, approvals, and approval rates appear to have been primarily influenced by government policies.

The most common occupational diseases over the past decade (based on annual averages) were musculoskeletal disorders (8,721 cases), hearing loss (3,464 cases), respiratory diseases (2,071 cases), cerebrovascular disease (1,553 cases), heart disease (529 cases), cancer (435 cases), mental disorders (378 cases), skin diseases (103 cases), poisoning (49 cases), asbestosis (44 cases), and heat-related illnesses (40 cases).

This presentation will explore these trends, highlighting increases and decreases over the past decade, and discuss their implications.



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# Andrew Orfanos

VA Sciences

## The Effect of Smelter Emissions on Worker Lung Function



The purpose of the proposed study is to evaluate the effect of exposure to respirable dust, heavy metals, and irritant gases on the respiratory health of workers at the SMC Townsville Zinc Refinery, specifically, those working in the Roasting and Electrolysis Plants.

The suitability of either fractional nitrogen oxide concentration in exhaled breath (FeNO) and multiple breath nitrogen washout (MBNW), with subsequent calculation of lung clearance index (LCI) as useful respiratory markers that can be implemented within workplace health surveillance programs for the early monitoring, diagnosis, and management of airway inflammation and disease will also be assessed.

In Phase 1 of the study worker exposure to the respiratory hazards present within the Roasting and Electrolysis Process Plants will be quantitatively characterised utilising both active and real-time sampling methods. In both instances participants will be required to wear portable measuring devices throughout an entire work shift upon where data will either be downloaded or sampling filters sent to a laboratory for subsequent analysis. Personal exposure monitoring data collected during Phase 1 will be reviewed and compared to workplace exposure data reported within the scientific literature within similar industries.

Acute and chronic respiratory health impacts associated with exposure to respiratory hazards within Roasting and Electrolysis will be characterised in Phase 2 of the study by comparing the outcomes of health monitoring between workers who either work in Roasting or Electrolysis with those who have never worked in either of these plants.

Respiratory health impacts will be assessed through the following activities:

- Review of historical and current worker health surveillance data (Spirometric) either collected previously by SMC or collected as part of this study.
- Completion of a detailed respiratory questionnaire.
- Measurement and comparison of Spirometry, FeNO and LCI values between SMC employees working within either the Roasting or Electrolysis Plants (Exposed Group) with those that have never worked in either of these two Plants (Control group).

FeNO and MBNW will be undertaken using two separate portable measuring devices in which participants will simply perform a normal breathing manoeuvre through the device.

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# Andrew Orfanos

VA Sciences

## The use of fractional exhaled nitric oxide as a potential marker of lung inflammatory processes

### Profile

Currently serving as the Division Director of Occupational Hygiene at VA Sciences, Andrew is a Certified Occupational Hygienist, and a Fellow of the Australian Institute of Occupational Hygienists (AIOH) with over 25 years of experience in occupational health, hygiene, and safety risk management.

Andrew is in his second year of his PhD at the Wollongong University where he is currently studying the Effect of Smelter Emissions on Worker Lung Function at the Sun Metals Zinc Refinery located in Townsville, North Queensland.

Andrew will today be talking about one component of his PhD, that being the use of fractional exhaled nitric oxide as a potential marker of lung inflammatory processes.



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# Dr. Sharann Johnson

IOHA NARC Chief Reviewer

## How many Occupational Hygienists is Enough?



This paper will present the facts about the numbers of occupational hygienists, current global trends and competency in occupational hygienists.

Previous papers have commented that 45,000 occupational hygienists would be needed globally based on the GDP of countries. However, the evidence today is that the number is much less. It is regulations and certain industries which are driving the demand for occupational hygienists. IOHA and the national associations are key to the growth. Furthermore, the national associations are the custodians of competency and professional development.

The world is changing, and to meet the demands the IOHA NARC (National Accreditation Recognition Committee) has changed the education pathways for candidates seeking professional competency assessments offered by credentialing organisations.

This paper will challenge you to think about how you can make a difference and protect worker health when the professional numbers are small and below a critical mass.

### Profile

Sharann has over 30 years' operational and management experience as the corporate occupational hygienist and senior health and safety manager working for global multinationals in oil and gas as well as mining.

Sharann is a great advocate for occupational hygiene and her commitment to leadership of the profession has seen her serve as the President, Secretary, Business Manager and currently Committee Chair for Professional Development and Education, of the Australian Institute of Occupational Hygienist. In 2012, was awarded the prestigious AIOH Pam de Silva Award for leadership and scientific integrity in the field of occupational hygiene.

Sharann is a Board member of OHTA, the Occupational Hygiene Training Association. OHTA courses were developed by occupational hygienists and have started the careers of many young occupational hygienists globally.

Sharann is currently the IOHA NAR Committee Chief Reviewer and the Past Chairperson of the IOHA NAR Committee. In 2022, Sharann was recognised for her contribution to occupational and community health by the Australian government with her Member of Australia Award during the Australia Day Honours list.

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# Miriska Gerber

Health New Zealand Te Whatu Ora

## Leading Work-Related Health Improvements in Uncertain Times



As health and safety professionals, rely on regulators like WorkSafe to guide, influence, and support our efforts to reduce work-related health risks. But what happens when that guidance feels uncertain—when the regulator is going through its own challenges? Improving work-related health has always required strong leadership, consistent focus, and collaboration across industry. This presentation explores how health and safety professionals can continue to drive improvements in work-related health, even when confidence in the regulator is low. Rather than viewing current challenges as a barrier, we'll reframe them as an opportunity for professionals to lead from within—shaping workplace health outcomes through proactive thinking, cultural influence, and practical action.

Crucially, this session will also explore the power of collective mindset. How do we shift from frustration or inaction to proactive engagement? How do we re-energise ourselves and our networks in times of uncertainty? Attendees will be invited to critically assess their own attitudes and assumptions, and consider how our professional response can either reinforce the problem—or be part of the solution. We'll briefly touch on the current pressures facing the regulatory environment and how this affects industry attitudes and approaches. More importantly, we'll focus on what we can control: shifting our mindset, finding motivation, and influencing positive change through engagement, innovation, and collaboration. The session will include an open, solutions-focused discussion where attendees can share strategies, ideas, and insights for continuing to reduce work-related health risks—without relying solely on the regulator to drive the change. At a time when leadership is more important than ever, this session is a call to stay the course, stay positive, and keep health at the centre of what we do.

### Profile

Miriska is a passionate Health and Safety leader and Certified Occupational Hygienist in New Zealand. She leads Health New Zealand's National Programme for Hazardous Substances and Occupational Hygiene, serving on boards like HASANZ, WISE and NZOHS. With a Master's in Occupational Hygiene, Miriska has developed and imbedded various H&S strategies and change programmes, and has earned several industry awards. Committed to enhancing worker health, she offers training, education, mentoring, and consulting services, aiming to improve occupational health standards for present and future generations.



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# Leon Pretorius

## Exposure Science Consulting

### **Pesticide exposure assessments: Using skin swabs and biological monitoring as detection methods**



The agricultural sector in New Zealand is considered a primary industry, producing 40% of the country's merchandise export. Consequently, the use of pesticides within the agricultural sector amounts to significant amounts. Historical studies indicated that between 1984 and 1994 a peak of 3700 tons were used per annum (Holland and Hill, 1999). They further state that herbicides dominated the usage at 68% followed by fungicides at 24% and insecticides at 8%. Current trends remain similar in that pesticide usage equates to tonnages per annum (Hageman et al., 2019). It is well documented that pesticide use and application in occupational settings poses significant health risks, particularly when exposure is inadequately assessed or controlled.

Accurate quantification of pesticide exposure remains a challenge in occupational hygiene due to significant limitations associated with air sampling techniques, analytical methods, reliance on specialized equipment and high analytical costs. Additionally, air sampling fails to account for dermal exposure and subsequent absorption, a critical exposure pathway in pesticide uses and application. This study proposes to use an integrated approach through combining personal skin swabs and biological monitoring, to detect and quantify pesticide exposure more effectively.

The framework involves collecting skin swabs from high-contact dermal surfaces, such as hands, arms, and neck, to quantify external contamination. The skin swabbing can be complemented by biological monitoring, using biomarkers of exposure and effect, such as metabolite concentrations in blood and/ or urine, to assess internal dose and potential health effects. By combining these methods, the proposed approach provides a more comprehensive understanding of total exposure and its biological implications.

The talk/ presentation will outline health effects related to commonly used pesticides in New Zealand, the proposed methodologies of swabbing and sample collection, and highlight the conceptual and practical advantages of combining skin swabs with biological monitoring, as well as address the anticipated challenges. By shifting the focus toward alternative sampling methods other than air sampling, the objective is to promote alternative exposure assessment practices to determine pesticide exposure.

### **Profile**

Leon Pretorius is a Registered Occupational Hygienist (ROH) with the Southern African Institute of Occupational Hygiene (SAIOH) and holds a BSocSc Honours in Environmental Management. With 15 years of experience across 15 countries, he specializes in Exposure Science, an interdisciplinary field combining Occupational Hygiene and Environmental Monitoring. His work focuses on identifying and mitigating risks from hazardous agents to protect workers (Occupational Exposure) and communities (Public Health), ultimately improving overall well-being and quality of life.

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# Samantha Connell

Indorama Ventures PCL

## Scaling occupational hygiene capability: Implementing a digital solution for exposure assessment



Effective exposure assessment is critical for managing occupational health risks, yet many organizations face challenges due to limited occupational hygiene expertise. Indorama Ventures, a global chemical company, has implemented a software solution to streamline exposure assessments, enhance data visibility, and prioritize risk management actions. This system enables EHS generalists to support exposure assessment efforts, expanding the company's capacity despite a shortage of hygienists.

Designed to be intuitive, the software simplifies data entry and analysis, making risk trends more transparent across sites. To ensure successful adoption, system training is complemented by exposure assessment education, equipping EHS professionals with the knowledge to identify, assess, and mitigate risks effectively. This presentation will explore the development and implementation of the solution, lessons learned in upskilling a diverse workforce, and strategies for scaling occupational hygiene capabilities in a resource-limited environment.

By leveraging technology and targeted training, Indorama Ventures is strengthening its approach to occupational health, demonstrating how large-scale organizations can enhance risk management without extensive in-house expertise.

### Profile

Samantha L. Connell, MSPH, CIH is Global Health Programs Director for Indorama Ventures Public Company Limited (IVL). As a subject matter expert in the Corporate EHS Center of Excellence, she develops and manages industrial hygiene programs with oversight of occupational health and health promotion. Samantha is Immediate Past President of the International Occupational Hygiene Association and holds a Bachelor of Science in Environmental Health Sciences and a Master of Science in Public Health.



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# Jamie Mallinder

Sentis

## Exploring work-related suicide: Insights from reviews and legislative changes



Work-related suicide is a critical yet often overlooked issue, with approximately 12% of suicides linked to workplace factors. A recent review in New Zealand revealed that 86% of these cases involved work-related stressors, 22% involved means associated with work, and 10% occurred within the workplace. These findings underscore the urgent need to address the profound impact of work on mental health.

This presentation examines the complex interplay between work design, social factors, and psychosocial environments that contribute to work-related suicide. It will distinguish between potential and actual cases, highlighting a structured process for assessing the role of work-related factors in suicide. Recent case studies will illustrate how organizations can identify root causes and implement targeted prevention strategies.

The session will explore:

- Industry-Specific Trends: Data by ethnicity and gender to identify vulnerable populations.
- Legislative Changes: Insights into proposed reforms in New Zealand and Australia to strengthen workplace prevention measures.
- Practical Recommendations: Proactive steps in work design, mental health support, and policy to reduce incidence rates.

By translating data-driven evidence into actionable insights, this presentation will inspire organizations to adopt tailored, robust strategies for suicide prevention. Together, we can foster safer workplaces and address one of the most challenging health issues of our time.

### Profile

Jamie Mallinder is a Principal Consultant at Sentis, with over 20 years of experience in Work Health and Safety (WHS). He specializes in psychosocial risk management and the prevention of work-related suicide. Jamie's expertise spans across sectors, where he has worked on integrating holistic safety practices that address physical, psychological, and social dimensions of workplace wellbeing. His recent work includes contributions to legislative reviews in Australia and innovative interventions in high-risk industries.

As a passionate advocate for mental health and suicide prevention, Jamie is involved in initiatives such as R U OK? and regularly speaks at national and international conferences. His deep commitment to creating safer workplaces, combined with his practical experience and research-driven approach, makes him a leading voice in the field of WHS.

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# Wendy Spence

## Business Health Services

### Workshop: Understanding diagnostic competence, validity, accuracy, reliability & repeatability

Occupational hygiene and health monitoring refers to the practice of systematically assessing and tracking a worker's health status by measuring their exposure to workplace hazards like chemicals, noise, dust, or vibration, to identify potential health risks and implement preventive measures to safeguard their well-being; essentially, it involves monitoring both the workplace environment and the worker's health to prevent work-related illnesses and injuries.

Determining health effects from workplace hazards is based on Exposure monitoring + Biological monitoring + Health monitoring

Health Monitoring involves conducting medical examinations or tests to detect, identify early signs of health problems related to workplace exposures, such as hearing tests for noise exposure, or lung function tests for dust exposure.

#### Importance of health monitoring

- Early detection of health risks: By monitoring exposure and health status, potential health problems can be identified early, allowing for timely interventions and preventive measures.
- Compliance with regulations: Ensuring adherence to workplace exposure standards set by regulatory bodies.
- Risk management: Identifying areas where exposure control measures need to be improved
- Worker protection: Contributing to a safer working environment by proactively managing potential health hazards

#### An overview of spirometry

Why do it: evidence-based need established. Documentation includes air levels / workplace exposure level documented

- Spirometry: understanding criteria for diagnosing lung conditions including the forced vital capacity (FVC) and forced expiratory volume in one second (FEV1). The ratio of FEV1 to FVC is used to determine if there is an obstruction. restrictive condition. What does LLN mean and its relationship to required action 2) identifying valid results
- Criteria for obstructive lung disease
- Criteria for restrictive lung disease
- Using spirometry to diagnose conditions - what how / why / - robust validated process.
- Spirometry: confounding factors for work vs non work causes
- Factors that can affect spirometry results
- Competency of practitioner and spirometry event: does either matter?



# Wendy Spence

## Better Health Services

### Workshop: Understanding diagnostic competence, validity, accuracy, reliability & repeatability

An overview of audiometry

Why do it: evidence-base need established, and document includes noise levels / workplace exposure level duration frequency noise level

- Identify noise exposure history
- Key points about NIHL diagnostic criteria: ACC criteria; WorkSafe criteria
- Exposure history: work / non work. A detailed account of exposure to loud noises in the workplace, recreational activities, or other environments is crucial.

Audiogram findings:

- "Notch" at 4kHz: A significant dip in hearing threshold around the 4kHz frequency is a hallmark of NIHL.
- High-frequency hearing loss: Most noticeable hearing loss occurs in the higher frequencies (3kHz-6kHz).
- Bilateral symmetry: Hearing loss is usually present in both ears, although it may be slightly worse in one
- Practitioner competency, standard of practice
- Action required 1) referral work vs non work
- Competency of practitioner and Audiogram screening vs diagnostic testing: does either matter?



# Joost van Rooij

Caeser Consult

## The new ECETOC TRA worker tool 3.2: Utilising workplace measurements to evaluate and improve exposure predictions of the screening tool



The ECETOC TRA worker tool is widely used in Europe as a conservative screening tool to estimate inhalation and dermal occupational exposure in the risk assessment of chemicals. This TRA-tool is available for free at [www.ecetoc.org](http://www.ecetoc.org).

Since the publication of the TRA tool, several studies were published which evaluated the ECETOC TRA worker tool v2.0, v3.0 and v3.1 exposure predictions against workplace exposure measurements. In some instances, these publications reported that the occupational exposure was underestimated by the TRA tool. To gain more clarity about these reported underestimations and to identify possible improvements to the TRA tool, an ECETOC TRA working group has carried out a systematic evaluation of all validation studies published since 2010.

To this end, a protocol has been developed to define minimum quality criteria for occupational exposure measurements and to delineate the comparison of these measurements with the ECETOC TRA worker tool v3.1. Overall, 249 exposure scenarios (ES) comprising approximately 4,500 data points have been utilised to evaluate short-term and long-term inhalation, and dermal exposure predictions. The results of the evaluation will be presented at the conference.

### Profile

Joost van Rooij has over 30 years of experience as a consultant in occupational hygiene and toxicology. He is an occupational hygienist and toxicologist (EuroTox registered). He is owner of Caeser Consult and co-founder of Chemrade Software BV in The Netherlands.

Fields of special interest are: chemical exposure assessment tools, biological monitoring, REACH, solvents, PAH, asbestos, chromium, skin absorption of chemicals, retrospective exposure assessments related to health claims.

He was president of the Netherlands Occupational Hygiene Association (NVVA) from 2012 – 2024 (12 years). He lives in The Netherlands, is married and has three children.



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# Matt Sadgrove

Delta

## Managing nightshift fatigue in New Zealand electrical distribution industry - An internally based research reflection



Fatigue is a well-documented occupational hazard across multiple industries, including healthcare, aviation, and oil & gas. However, its impact on safety within the New Zealand electrical distribution sector has remained unexamined until now. This research investigated the extent to which the safety risks associated with nightshift work are managed in this high-risk industry.

Using a qualitative research design, the study incorporated a literature review, focus groups with Network Control Operators and Fault Responders, full of wonderful stories lived over a working collective of 265 years and Industry analysis of fatigue management documentation that was then current. A reflexive thematic analysis was conducted, identifying fourteen key themes related to nightshift fatigue and its management. The findings were evaluated against Deming PDCA (Plan-Do-Check-Act) model to assess the effectiveness of fatigue controls in the sector.

### Profile

Matt has over a decade and a half of experience leading strategic and operational HSEQ initiatives within high-risk, complex, multi-site operations. He is a recognised leader in HSEQ management, and his expertise has been sought after by industry organisations (Electrical Engineers' Association, Business Leaders Health & Safety Forum), where he has actively contributed to shaping healthy and safe industry practices.

He is currently the HSEQ Manager with Delta Utility Services, an infrastructure construction and maintenance company employing over 600 staff mostly across the South Island. As a member of the senior leadership team, he ensures that operations are carried out safely, responsibly, and efficiently while promoting a culture of safety, environmental stewardship, and operational excellence.



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# Nicholas Browne

## Air Matters

### Practical knowledge for the use of the Bayesian statistical model



The best practise interpretation of exposure data relies heavily on statistical methods to assess and control exposure agents. The use of Bayesian statistics is a powerful tool for Occupational Hygienists due to its power with even small amounts of data. It offers an approach that incorporates prior knowledge around exposure profiles typically found in the workplace. This presentation explores my experiences with the practical application of Bayesian statistics through IHStat\_Bayes, focusing on how they improve exposure assessment and decision-making around health risk.

Bayesian statistics differ from conventional statistical techniques in that it integrates prior distributions – such as historical exposure data – into the analysis. The incorporation of a ‘prior’ in Bayesian models make them particularly useful for small sample sizes, which are common in occupational exposure assessments. A key challenge in occupational hygiene is dealing with limited or incomplete exposure data. Bayesian models mitigate this issue by incorporating ‘prior’ information, thereby improving the reliability of exposure estimates.

One big advantage of Bayesian statistics in occupational hygiene is that it provides information about probability of a result through presentation of uncertainty. Bayesian methods can create full probability distributions, giving a more complete picture of exposure risks. This approach helps occupational hygienists make better decisions around the assessment of exposure levels from a typically small data set and utilising this estimate in the protection of worker health.

This presentation will provide practical examples from my experience using Bayesian statistics in occupational hygiene. I will demonstrate its usefulness through examples from a theoretical data set that will illustrate how Bayesian techniques can enhance decision-making in real-world scenarios. The discussion will focus on the use of IHStat\_Bayes as a user-friendly approach that does not require extensive expertise. This presentation aims to clarify Bayesian methods by presenting clear, practical applications tailored from my experience as an occupational hygiene professional.

I will cover a brief background of the Bayesian model used in IHStat\_Bayes, examples to show its power using sample data of varying size, as well as how the outcome can be used in health risk assessments. By embracing the use of Bayesian statistical methods, occupational hygienists can enhance their ability to evaluate levels of exposure and the assessment of health risks in a wide variety of workplaces. With a shift towards the use of probabilistic statistics we can improve the robustness of workplace exposure assessment and ultimately lead to safer workplace environments.

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# Nicholas Browne

## Air Matters

Practical knowledge for the use of the Bayesian statistical model

### Profile

Nick serves as the Principal Occupational Hygienist at Air Matters. He is dedicated to enhancing workplace health through client-focused occupational hygiene practices. He excels in navigating the dynamic challenges of both occupational hygiene and business leadership, blending scientific knowledge with strategic decision-making. Nick's drive, expertise, and leadership make him a respected figure in the industry, consistently striving for the best in every aspect of his work.



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# Muthia Ashifa

PT Adaro Energy Indonesia Tbk

## Strategy of Industrial Hygiene & Occupational Health Implementation in Integrated Energy Company



There are a large number of hazards linked to both the nature of the physical environment and the effects of hazardous substances in the mining sector that pose a potential risk to health and well-being. Protecting the occupational health of workers is an integral part of being a responsible mining company. The responsibilities for carrying out processes of anticipation, recognition, evaluation and control to eliminate or reduce risk to the lowest practicable level (As Low as Reasonably Practicable or ALARP). In doing so, the commitment is to complying with government regulations and standards relating to health risks that arise from the workplace.

In one of coal mining in Indonesia, there are 5 elements of managing Industrial Hygiene & Occupational Health (IHOH); to conduct a health risk assessment, managing IHOH programs based on four health pillars of health program, management of ill-health in the workplace, fitness for work assessment and health monitoring, medical emergency management, IHOH reporting and maintaining records and leading and lagging indicator implementation. One of the strategy to implement all of those elements is through IHOH dedicated personnel and champions from all subsidiaries within the company. They were developed with basic and advanced industrial hygiene competencies and also managing occupational health in the workplace, not only for clinical aspects but also leading in handling critical condition, like pandemic. Thus, these elements contributes to preventing occupational health-risks and improve the health status and work capacity of the employees.

### Profile

- Bachelor of Public Health (SKM) from University of Indonesia
- Master of Occupational Health & Safety (M.K.K.K) from University of Indonesia
- Industrial Hygiene Specialist (HIU) from Indonesian Industrial Hygiene Professional Certification Body
- Certified Contract Management Specialist (CCMs)

Muthia is an experienced occupational health and safety (OHS) practitioner for 16 years in integrated energy companies (coal mining, oil and gas and mining services). Currently working at as SHE System & Compliance Department Head in one of Indonesian integrated energy producer company, based in Jakarta. Her previous roles were Head of Industrial Hygiene & Occupational Health (IHOH) Department, OHS Compliance Superintendent, QHSE System Superintendent, HSE Superintendent & HSE Officer in PT AEI.

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# Muthia Ashifa

PT Adaro Energy Indonesia Tbk

## Strategy of Industrial Hygiene & Occupational Health Implementation in Integrated Energy Company

### Profile cont.

Highlights of her roles are:

- Recently appointed as one of "Kelompok Kerja Pelaksana Program Keselamatan & Kesehatan Kerja Nasional Tahun 2024 - 2029" based on Keputusan Menteri Ketenagakerjaan Republik Indonesia Nomor 200 Tahun 2024.
- Lead the development of IHOH department in corporate functions and set KPIs of leading & lagging indicators for Adaro Group. Furthermore, development of technical guidelines, competencies development baseline and provide analysis and review for companies target and business unit performances.
- Certified as Sustainability Report Specialist start in 2014 with responsibilities to carrying out data collection and analysis related to HSE aspects in the context of sustainability reports throughout Adaro group.
- Creating and executing comprehensive sustainability strategies aligned with the company's overall business goals, including setting measurable targets and KPI's on HSE; zero fatality and occupational illnesses prevention program, safety maturity level assessment program, occupational health risk assessment, employee wellness program and health services at the workplace management.
- Co-project leader for Environmental and Social Management System (ESMS) based on World Bank' International Finance Corporation (IFC) Performance Standard at 2x100 MC coal-fired power plant during construction phase.
- Project leader for development, implementation and certification of HSE management system integration based on ISO 9001, ISO 14001 & ISO 45001 at coal processing and barge loading facilities. The result was granted certification for three management systems from SGS Indonesia.
- Ensuring adherence to relevant HSE laws, regulations, and reporting requirements to stakeholders and internal business units.
- Identifying and implementing new technologies and sustainable solutions to improved productivity; identification of industrial hygiene & occupational health direct measurement in workers.

### Organization

- President of IIHA 2025 – 2028 of Indonesian Industrial Hygiene Association (IIHA).
- Committee member of Indonesian Mining Safety Professional Association.



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# Richard Wilkinson

Tetra Tech Coffey



## Identifying psychosocial risk factors for occupational hygienists

In Australia and New Zealand (ANZ) it is thought that approximately 25% of construction workers are affected by mental health issues. Standard working conditions in the construction and demolition industry are long working hours, driven by strict program delivery and tight budgets, generating tense and highly stressful workplaces. Such conditions can cultivate psychosocial hazards that adversely affect the mental health of workers, manifesting in anxiety, depression, and even suicide. In ANZ although construction workers, in general, have a higher suicide risk as compared to the general male population, young construction workers have an unusually high suicide risk (about twice that of young workers in other industries).

Due to the financial competitive nature of construction and demolition young occupational hygienists with relatively limited industry experience can be thrown into this environment. Generally working alone at site, often seen as outsiders and a hinderance to the process leading to resentment, which is daunting and isolating. Long working hours in isolation and a potential hostile work environment appears to be the perfect recipe for psychosocial hazards to generate mental health issues and burn out for occupational hygiene professionals.

As an industry we sell WHS solutions for so many scenarios, therefore we need to lead the way to anticipate, recognize, evaluate and control psychosocial risk factors for the working environments we create for our people, not only in the field but most critically within our own businesses.

Let this presentation highlight an industry issue which is too often ignored or hidden under the carpet. If this presentation can help one worker or save one life, then it was more than worth it.

### Profile

Richard is a Certified Occupational Hygienist (COH)®, Licensed Asbestos Assessor (LAA) and principal consultant at Tetra Tech Coffey. Richard is a proud University of Wollongong alumni, study a Masters of Occupational Hygiene under Dr. Jane Whitelaw and the team which was a life changing experience!

He is the current FAMANZ 2024 Derek Miller award winner for an outstanding contribution to the hazardous materials industry. Richard sits on the National Association of Testing Authorities (NATA) Australia Accreditation Advisory Committee as industry representative for Asbestos and associated Occupational Hygiene and is a NATA Technical Assessor in the field of Chemical Testing. With over 16 years' experience in risk assessment, hazardous materials and occupational hygiene consulting and analysis, Richard provides project management, technical leadership, quality assurance and risk-based solutions to industry.

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# Bridgette Jennings

Fletcher Building

## What businesses really need from occupational hygiene reports

Changing from a Consultant to an in house hygienist has given me an opportunity to understand how businesses use occupational hygiene data, what their challenges are in terms of turning data into positive change, and how we can work together to leverage our unique positions.

### Profile

Occupational hygiene is my passion and I have been working as a hygienist since 2003. I enjoy helping assessing exposure risk to health hazards, demystifying exposure monitoring and health monitoring data, and showing businesses a pathway to control implementation for their team's health. I think strategically but also enjoy getting into the data.



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# Suzanne Broadbent

## COH Resources

### Australian exodus - Gold and Dust?



There will be two parts to the workshop:

1. What does work as an Occupational Hygienist in Western Australian mines look like? How one Hygienist made the move - including the challenges, complexities, changes and solutions. Regulatory, cultural, corporate, technical - differences and commonalities.
2. Dust and RCS. How can we use Direct Reading Instruments (or Real-time monitoring) to make decisions to protect the health of workers? What can you do to make the instruments more useful? And an app to help establish action levels/decision-making criteria.

### Profile

Suzanne Broadbent is a previous President of NZOHS and Fellow Member. She is also MAIOH and COH and has over 20 years experience (mostly in NZ). Suzanne has a MSc (Env Science, Physics, Chemistry) and Post Grad quals in Occupational Hygiene (Worksafe Australia), Radiochemistry and Toxicology. Her recent work has included working at the Telfer Gold mine (operated by the worlds largest Gold Miner, Newmont) in the Great Sandy Desert in Western Australia.



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# Karla Anderson

## Air Matters

### Using Generative AI to Generate Occupational Hygiene Reports

Generative Artificial Intelligence (AI) has emerged as a tool to streamline work practices in many industries. This research utilises the ChatGPTo1 engine to generate two types of occupational hygiene reports typically produced by an occupational hygiene consultancy detailing the outcomes of a workplace exposure assessment to either noise or chemical (formaldehyde) exposure.

Three levels of prompting of the AI engine were used to provide information and guidance to the engine. Randomly generated exposure results and generic observational data based on the authors professional experience were also provided to the AI engine where relevant. The reports generated with different levels of prompting were evaluated for technical accuracy, relevance and readability by occupational hygiene professionals with differing levels of technical experience in the field of occupational hygiene.

### Profile

Karla Anderson has been an Occupational Hygiene Consultant at Air Matters for two years and is a Technician member of NZOHS. She previously spent eleven years in environmental health with the New Zealand Defence Force and five years in civilian scientific consultancy at Industrial Research Ltd. She holds a Master of Science in Polymers and Coatings Science and a Bachelor of Science in Chemistry. Additionally, she has earned the ICertOHTA and various BOHS qualifications in Asbestos and Local Exhaust Ventilation. Recently, she has developed a keen interest in leveraging Artificial Intelligence to improve efficiency and save time.



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# Al Threlfall

Blackstone Occupational  
Health and Hygiene



## Science Speaks: 3 Powerful Ways to Connect with Non-Scientists

The strength of Occupational Hygiene lies in building meaningful connections with those we serve in the workplace. In an era dominated by 'Google Academics' and AI tools like ChatGPT, we face unprecedented challenges in persuading a skeptical audience of our message. This session will delve into effective strategies to navigate skepticism, foster trust, and enhance understanding of our valued scientific principles.

### Profile

Al Threlfall (Certified Occupational Hygienist) is Blackstone's Principal Consultant.

Since 2011 Al has been lucky enough to work with some of Australia and New Zealand's best Occupational Hygienists across a variety of industries and environments. As an Occupational Hygienist for New Zealand's workplace health safety regulator, he assisted businesses meet their duties under the Health and Safety at Work Act through engagement and education. Key to his practice has been understanding how work is actually done and using that understanding to apply practical controls to reduce exposure.



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# Dr. Sage Robinson

Exposure Science Consulting

## Copper Chromium Arsenate (CCA): An occupational exposure assessment and control implementation story



Copper Chromium Arsenate (CCA) is an important wood preservative containing oxides of hexavalent chromium (47.5%), copper (18.5%), and inorganic arsenic (34%), with widespread use across the Asia Pacific region. Exposure to CCA can lead to a variety of health effects, depending on the level and duration of exposure. The most common routes of exposure are through inhalation of sawdust or wood smoke, ingestion of contaminated food or water, and direct skin contact. Short-term exposure to CCA can cause irritation of the skin, eyes, and respiratory tract. Long-term exposure can lead to more serious health effects, such as an increased risk of cancer, including lung cancer, skin cancer, and bladder cancer. Arsenic exposure has also been linked to cardiovascular disease, diabetes, and developmental effects in children, as such waste streams from such sites needs to be considered from an environmental health perspective.

This presentation uses a health risk assessment of a number of New Zealand CCA plants to convey lessons learned in both the methodology of assessment and practical control strategies employed to mitigate worker exposure. The presentation has a focus on cost effective control and assessment strategies that can be applied to the typically low cost treatment operations often found throughout the Asia Pacific region where the majority of business are small to medium enterprises.

### Profile

Sage Robinson is Exposure Science Consulting's Principal Occupational Hygienist and a Certified Occupational Hygienist (COH®) with the Australian Institute of Occupational Hygiene (AIOH). Sage completed his Ph.D. in organic and analytical chemistry from the University of Otago, a Masters of Occupational Hygiene and Toxicology from Edith Cowen University, and a Level 8 Graduate Certificate in Workplace Health and Safety from the University of Newcastle. He is a professional member of both the New Zealand Occupational Hygiene Society (MNZOHS) and Australian Institute of Occupational Hygiene (MAIOH) and served on the NZOHS Council from 2019, including as the President from 2024 to 2025.



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D.A.L founded in 1995, is a New Zealand owned and operated occupational hygiene consultancy and analytical laboratory specialising in asbestos management and exposure assessments. Accredited by IANZ, they provide nationwide services creating healthier, safer workplaces and homes for all kiwis.



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The logo for AtSource consists of the word "atsource" in a white, lowercase, sans-serif font, set against a dark blue rectangular background.

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Terry van Dijk e: [terry@pacificears.com](mailto:terry@pacificears.com) p: 07 542 36 59

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