

ASBestos IN Soil (ASBINS) Update

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Presentation Overview

- What Australia wants (are we dreaming?)
- Analysing soil samples for free asbestos fibres
- Exposure pathway assessment
- Proposed assessment approach
- Churchill Fellowship overview
- Recommendations and contact details

What Australia Wants Or Needs?

- An asbestos specific, nationally consistent approach.
- Site-specific, health-based risk assessments conducted to determine risks to receptors.
- Differentiation between the risk and the hazard that asbestos poses to receptors. Moreover, the quantification of the respirable asbestos fraction.

Analysis for Free Fibres

- Modified Elutriator Method (draft)
 - Sample reduction using sieve then rifle splitter
 - Transmission electron microscopy (TEM) method to ISO 10312 (plus adjustments for soil medium)
 - Not peer reviewed
- Netherlands Standard NEN 5707 reduction method
 - Sample reduction predominantly through sieving
 - Scanning electron microscopy (SEM) method to ISO 14966
- Schneider *et al.* or CARB methods?

Exposure Pathway Assessment

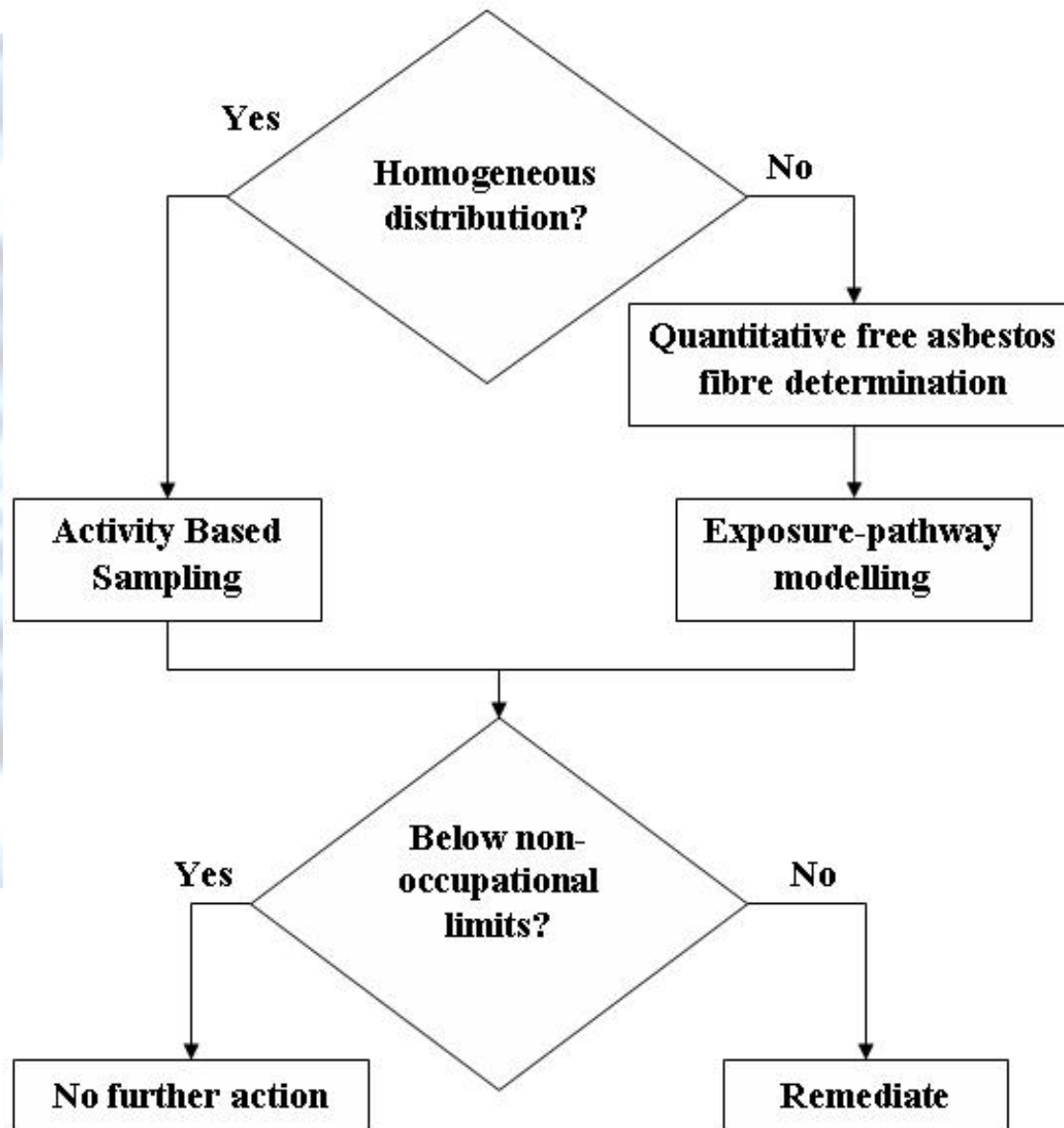
- Dust dispersion modelling in theory
 - Soil/air interface difficult task
 - Assumes all free asbestos fibres are liberated (for conservatism)
 - Can be an intensive process?
- Activity Based Sampling (ABS)
 - Scenarios that generate respirable dust on-site
 - Relatively easy process compared to sampling and dispersion modelling
 - Needs to be conducted during worst-case conditions
 - Approved method in US (SOP available)

Air Threshold Values

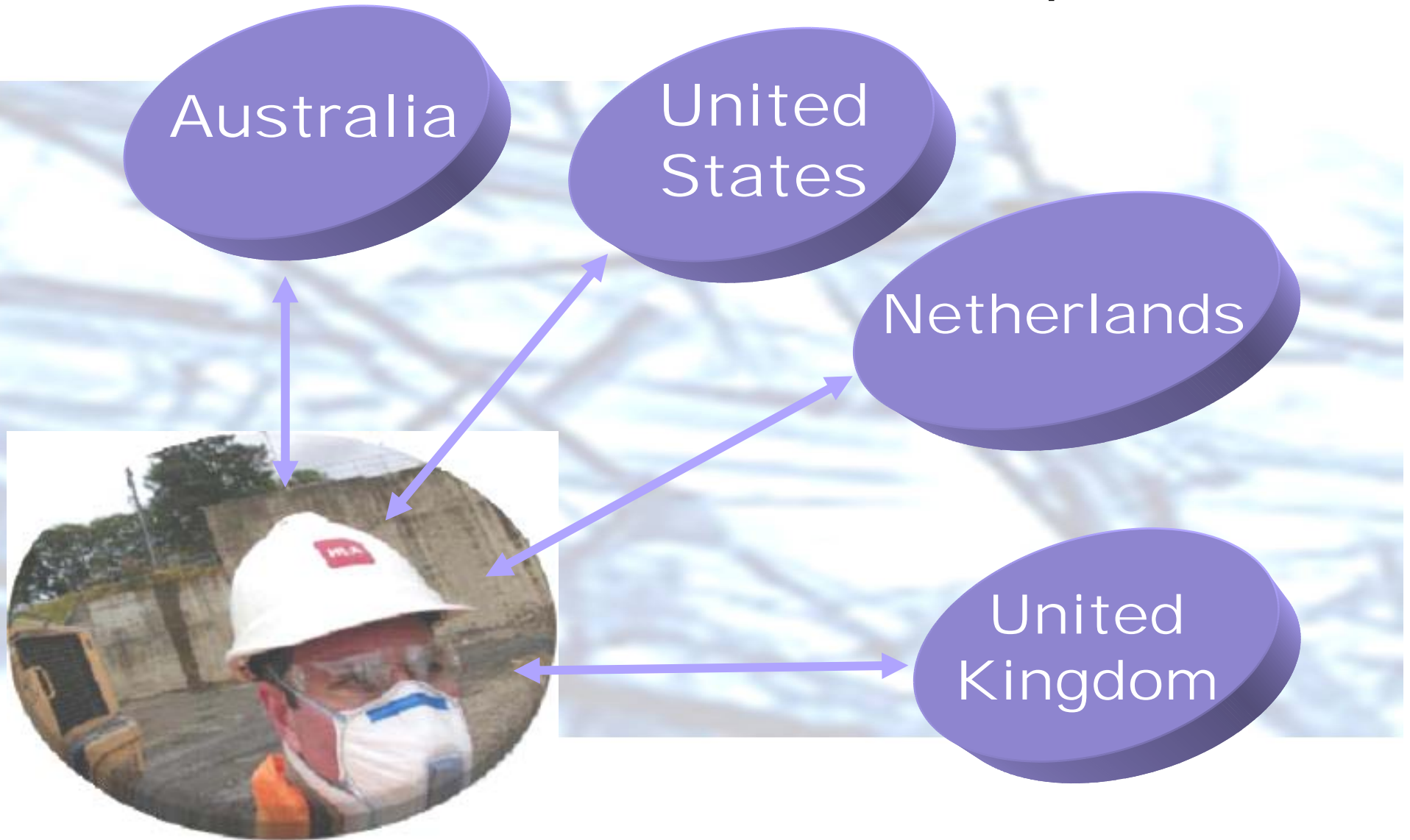
Netherlands threshold values:

- Negligible risk level (NR)
 - = 1 000 f/m³
 - = 0.001 f/ml
- Maximum permissible risk level (MPR)
 - = 100 000 f/m³
 - = 0.1 f/ml
- Potency factor for fibre type (ie. differentiation between serpentine & amphibole fibre types)

Proposed Assessment Approach



Churchill Fellowship



ASBINS (ASBestos IN Soil) Network Australia

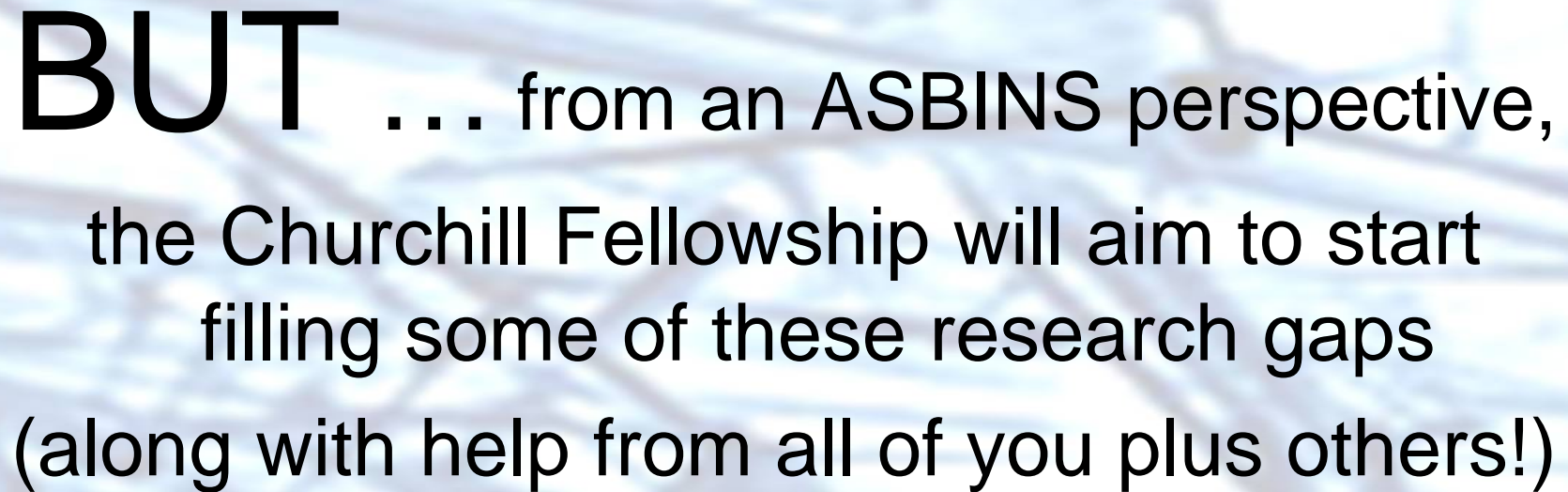
Goals of the Fellowship

- Findings provided to Contaminated Site Assessment NEPM review panel.
- Strengthen ties with leading jurisdictions.
- Develop bank of remediation case studies.
- Disseminate information to those involved in asbestos-contaminated land remediation.
- Provide Australian public with greater understanding of risks associated with asbestos.

Conclusions

Further research needed into:

- Asbestos degradation under varying conditions.
- Free fibre quantitative assessment.
- Dispersion modelling:
 - Ability of fibres to be liberated from soil;
and
 - Source-pathway-receptor models
(dispersion from contamination source).
- Activity Based Sampling (ABS).



BUT . . . from an ASBINS perspective,
the Churchill Fellowship will aim to start
filling some of these research gaps
(along with help from all of you plus others!)

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