IRIS PSM June 2016 - Kissel
Q1. Dose Metric for Absorbed Dose

- Distribution (mass/area) matters (Kissel, 2011; Frasch et al., 2014). Above monolayer coverage, as N_{derm} goes up, fraction absorbed goes down.
- In dermatitis (also a point of entry effect), mass/area is conventional (Kimber et al., 2008)

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Q2. Modeling Dose

- Fraction absorbed is dependent upon load and not a constant for a given compound
- Absorption should generally be modeled as thermodynamic-gradient driven process (with caveat that some direct contact transfer can occur initially)
- Is there a practical distinction between PAH on fine soil particles not removed by washing and PAH absorbed into the stratum corneum?

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Q3. Scaling Absorbed Dose

- Risk estimates should make sense in light of human experience
- Background NMSC risk is high, probably undercounted
- Extreme scrotal cancer risk in 18th century chimney sweeps (Pott, 1775); coke oven workers do show excess scrotal/skin cancer risk (Doll, 1972)

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Q3. Scaling Absorbed Dose (cont'd.)

- $BW^{3/4}$ scaling reduces apparent risk by factor of 300 in 2014 document, applicability to point of entry effect questionable. Increased mouse skin permeability would partially compensate.
- cPAH multiplier is source of large uncertainty (correction for variable mobility in soil/other matrix?)