



10th IOHA International
Scientific Conference

Risk Assessment Landscape – Present and Future

Outline of the Session



- Introduction and audience analysis David O'Malley
- Risk Assessment – Today's landscape – Do we have the same starting point? Chris Laszcz-Davis & Andy Gillies
- Future Horizons / Opportunities Karen Niven
- Risk Perception & Communication – Language of Risk
Fred Boelter & Mary O'Reilly
- Audience Interaction Chris Laszcz-Davis & David O'Malley



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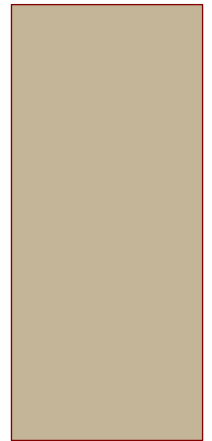
IOHA London 2015, 27-30 April
2015, Hilton London Metropole



RISK ASSESSMENT: CURRENT LANDSCAPE - U.S. AND EUROPE

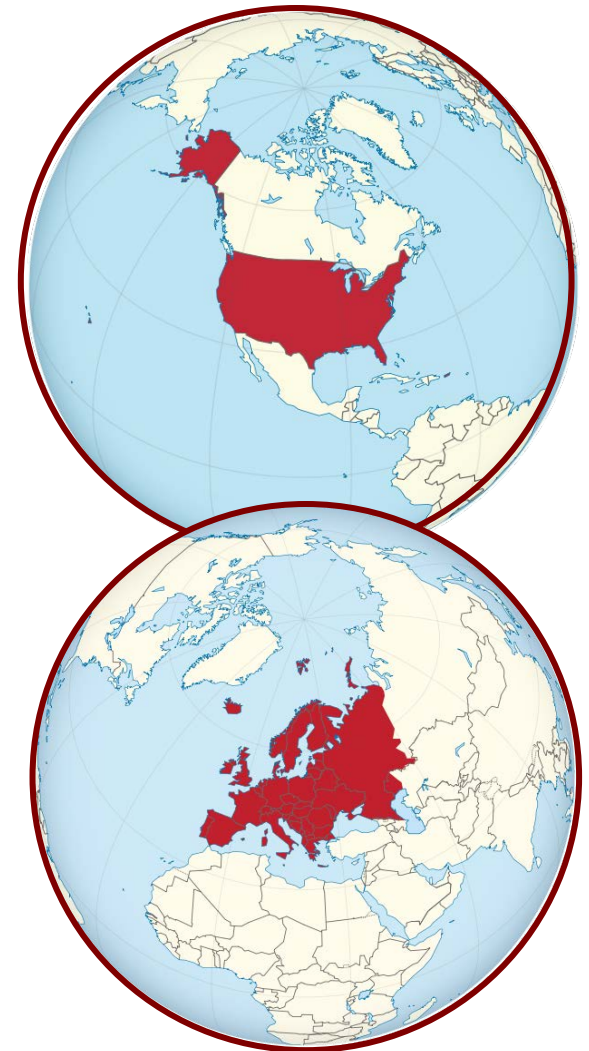
Chris Laszcz-Davis – MS, CIH, FAIHA, REPA
Andy Gillies – MSC, CFFOH, AIEMA

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PRESENTATION HIGHLIGHTS

- U.S. Landscape
- European Landscape
- Similarities and Differences
- Opportunities for Alignment

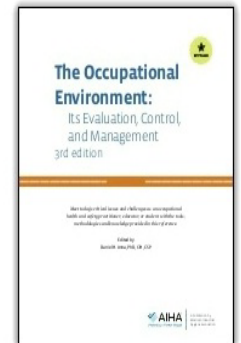
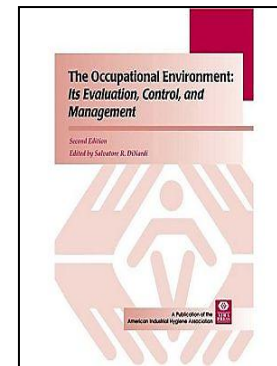


U.S. EVOLUTION OCCUPATIONAL RISK ASSESSMENT

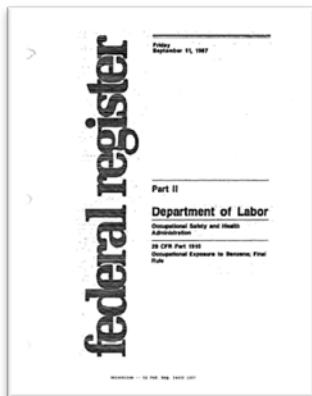
1980



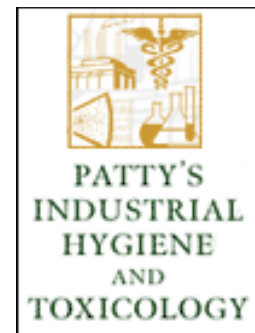
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2010



U.S. EVOLUTION ENVIRONMENTAL RISK ASSESSMENT

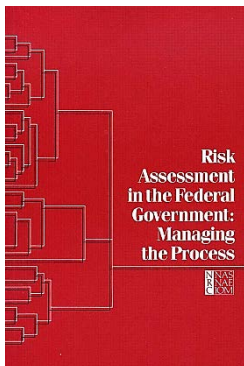
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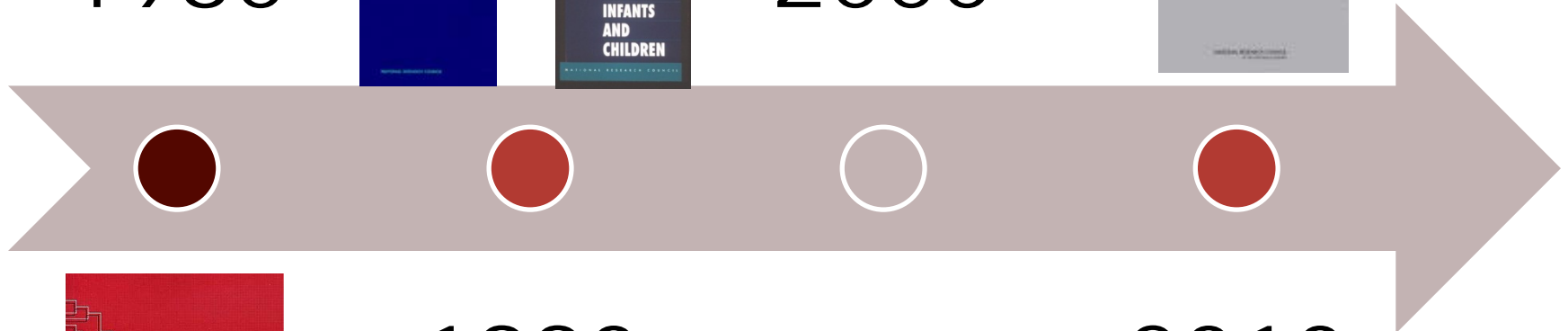
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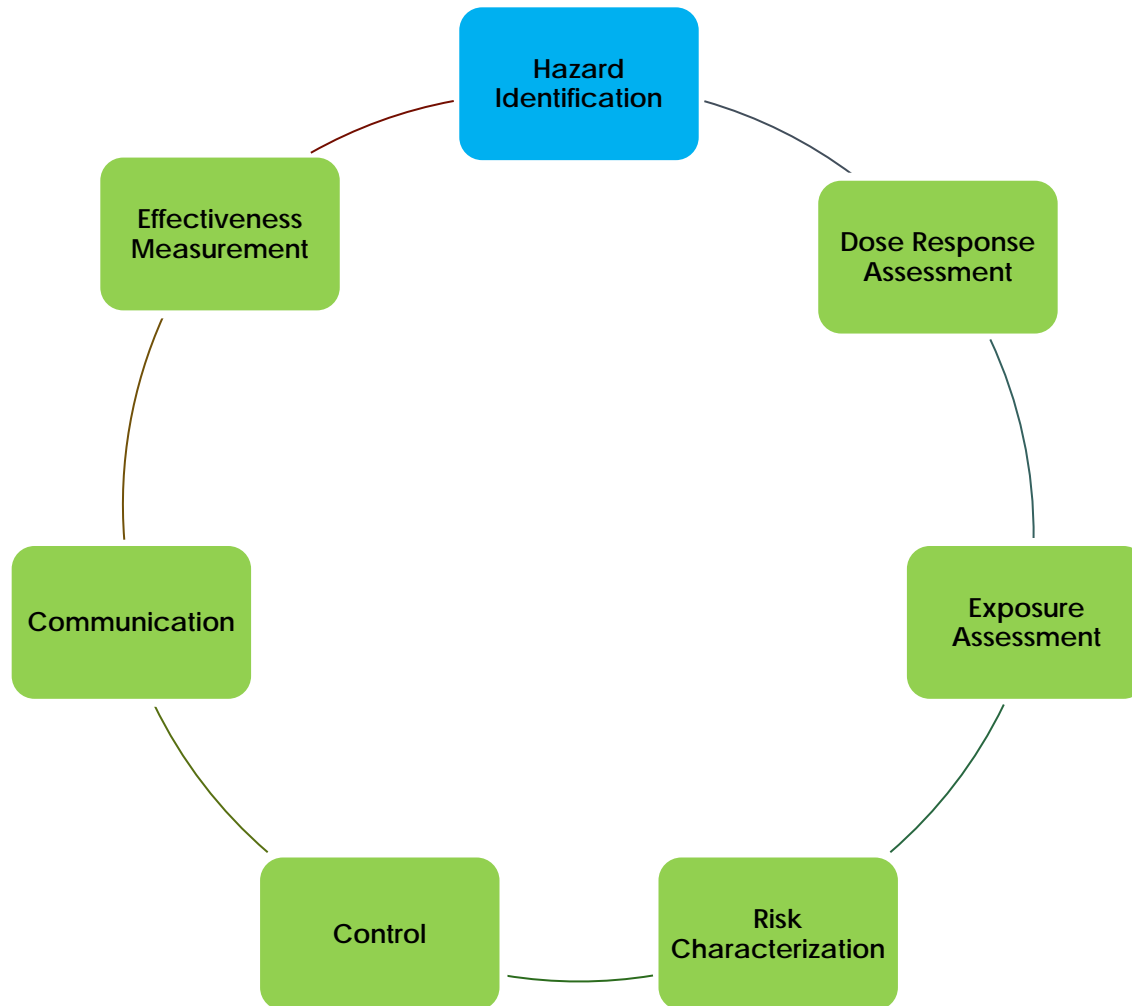
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U.S. EVOLUTION

- **1980s:** Regulatory framework anchored in environmental movement
- **1983:** Red Book "Risk Assessment in the Federal Government: Managing the Process"
- **2008:** Silver Book "Science and Decisions: Advancing Risk Assessment"
- **2009:** Red Book update – Only do risk assessment with known purpose

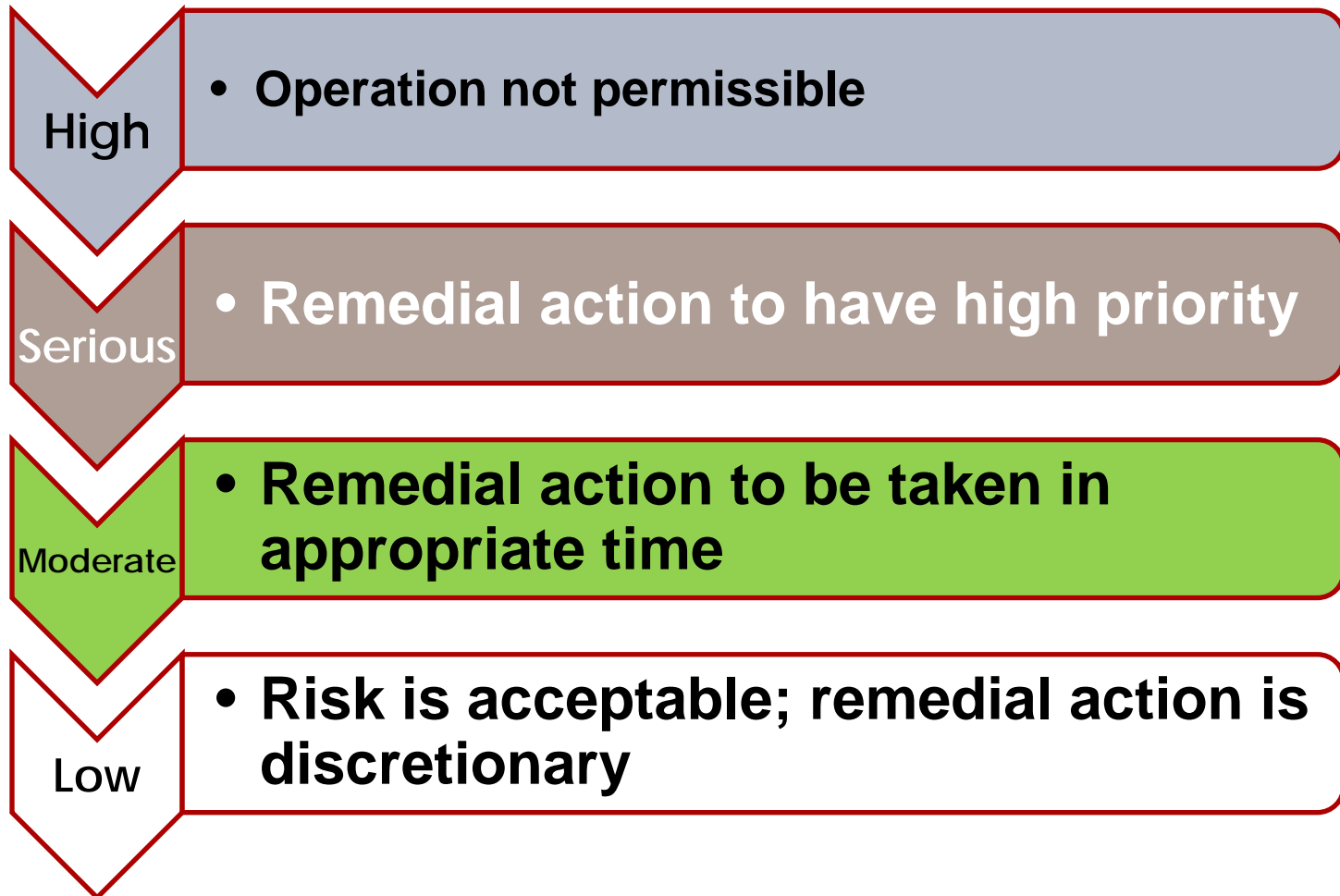
RISK ASSESSMENT ELEMENTS



RISK ASSESSMENT MATRIX

LIKELIHOOD OF OCCURRENCE OR EXPOSURE	CATASTROPHIC	CRITICAL	MARGINAL	NEGLIGIBLE
FREQUENT	HIGH	HIGH	SERIOUS	MEDIUM
PROBABLE	HIGH	HIGH	SERIOUS	MEDIUM
OCCASIONAL	HIGH	SERIOUS	MEDIUM	LOW
REMOTE	SERIOUS	MEDIUM	MEDIUM	LOW
IMPROBABLE	MEDIUM	LOW	LOW	LOW

RISK CATEGORY & ACTION



U.S. CHALLENGES TODAY

- **Differing methodologies** (environmental & occupational)
- **Control banding** (confused with risk assessment)
- **Individual versus governmental risk** decisions
- **"Zero risk"** popular when involuntary risk exists
- **Trend** - complex and broader assessments
- **Central to regulation** – sometimes generates uncertainty & hinders EH&S program efforts
- **Decision making gridlock**
- **Fiction** - well understood, widely used, transparent

U.S. OPPORTUNITIES

- **Improve** risk assessment decision-making tools
- **Improve** risk assessment science
 - **Standardize** basic EH&S science used
 - **Leverage** cumulative (combined) assessments
 - **Harmonize** dose response assessment
 - **Include** life cycle analyses, biomarker indicators
- **Improve** understanding of risk assessment by decision makers
- **Advocate** unitary voice on risk assessment methodology
- **Leverage** NIOSH Total Worker Health Program

EUROPEAN LEGISLATION: H&S RISK ASSESSMENT

- **Framework Directive on H&S** (89/391/EEC)
- **Purpose of risk assessment:**
 - Prevent occupational risks (ELIMINATION)
 - Provide information and training to workers
 - Organisation and means to implement necessary measures
- **Daughter Directives** – workplaces, work equipment, PPE, manual handling, display screen equipment
- **REACH Regulation**



RA EVOLUTION IN UK

Example: RA evolution in one EU Member State

- Industrial Revolution – medical influence and enlightened employers
- Factories Acts 1833 and 1855
- Prescriptive, sector-specific legislation – “Dangerous Trades”
- Lord Robens Report 1972 – general goal-setting duties; principle of risk-based self-regulation
- “...so far as is reasonably practicable.” Goal setting responsibilities by employees.
- “The Tolerability of Risk” (HSE report, 1988)
- “Reducing Risks, Protecting People” (HSE report, 1999)



EUROPEAN CHALLENGES

- **One EU** – many individual cultures and traditions
- **Common rules** – different interpretation
- **EU legal instruments** – Regulations (doctrine of “direct effect”) and Directives (implemented by local laws).
- **Varied perception and acceptance** of risk
- **Enforcement** - contrast between prescriptive approach (e.g. German model) and goal-setting approach (e.g. British model)



EUROPEAN CHALLENGES

- **Hazard and Risk confusion** – poor understanding, jargon of risk experts (QRA, PRA), ALARP
- **Small or Medium Enterprises (SMEs)**– no time, no in-house expertise, no money, low priority
- **Precautionary Principle** – borrowed from Environmental arena
- **Behavioural factors** – human error, risk perception
- **Light touch regulation** – risk-based and proportionate, reduced regulatory burden

COMPARISONS - U.S. AND EUROPE

U.S.

- Often includes environmental components
- Risk perceptions influence outcomes
- Non-traditional elements (finance, social)
- Regulation enforcement focused.

E.U.

- Regulation enforcement varies; low level of fines
- REACH brings together EH&S risk assessment for chemicals

U.S. & E.U.

- Not that far apart-- basic challenges
- Confusion "hazard" vs "risk"
- RA approach methodologies & interpretations vary

OPPORTUNITIES FOR ALIGNMENT

- **Agree** on a common, science-based methodology
- **Develop** a standard curriculum for risk assessment and risk management education
- **Proportionate RA (development of practical hybrid qualitative and quantitative approaches)** for Small or Medium Enterprises.

