



Workshop on Risk Assessment and Safety Decision Making Under Uncertainty

*Hosted by
Consortium for Risk Evaluation with
Stakeholder Participation (CRESP)
Vanderbilt University*

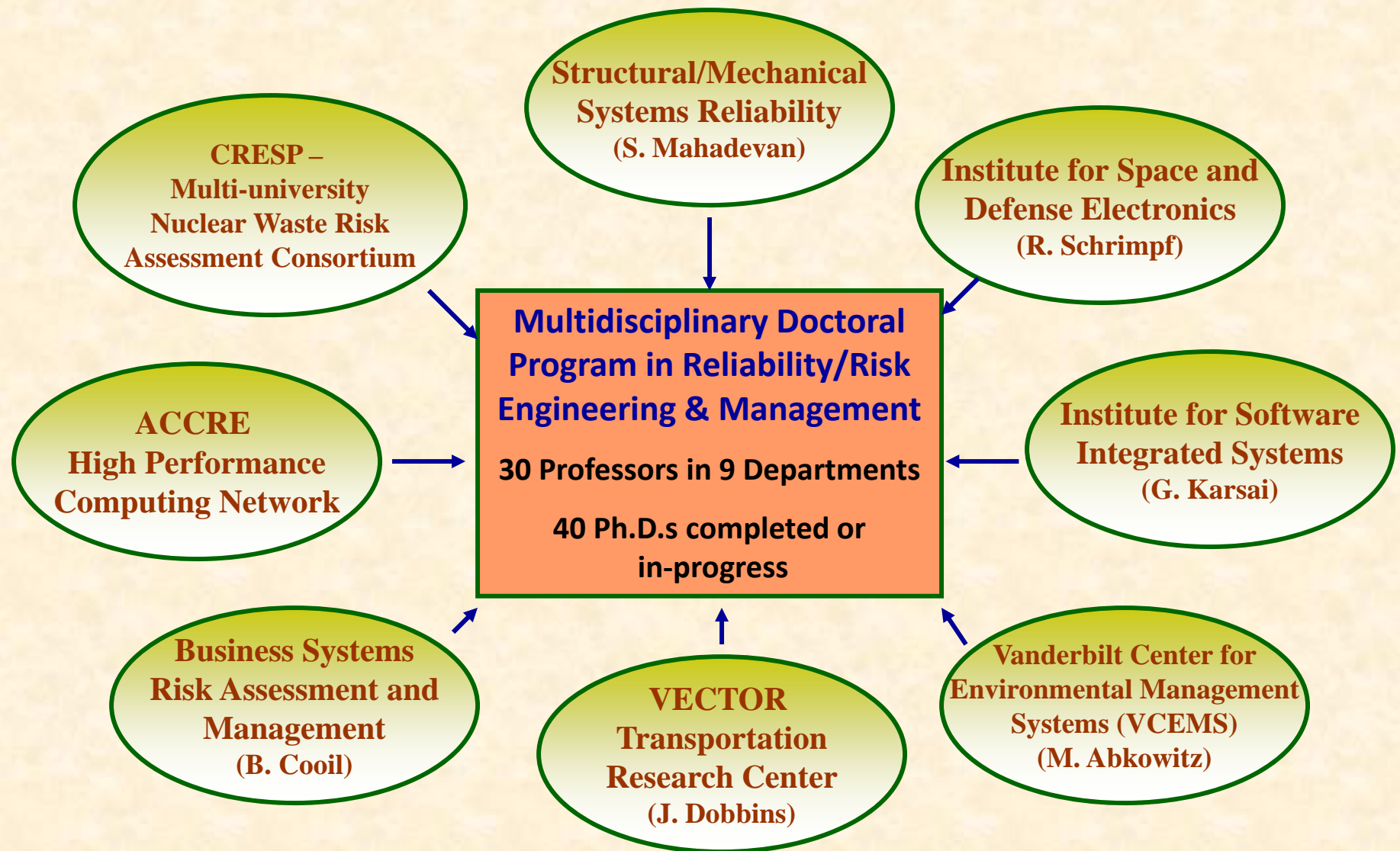
Vanderbilt University Civil & Environmental Engineering



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Reliability and Risk Engineering, Analysis, and Management at Vanderbilt





The Consortium for Risk Evaluation with Stakeholder Participation III (CRESP III)

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with Management Board: Craig Benson, Joanna Burger, Michael Greenberg,
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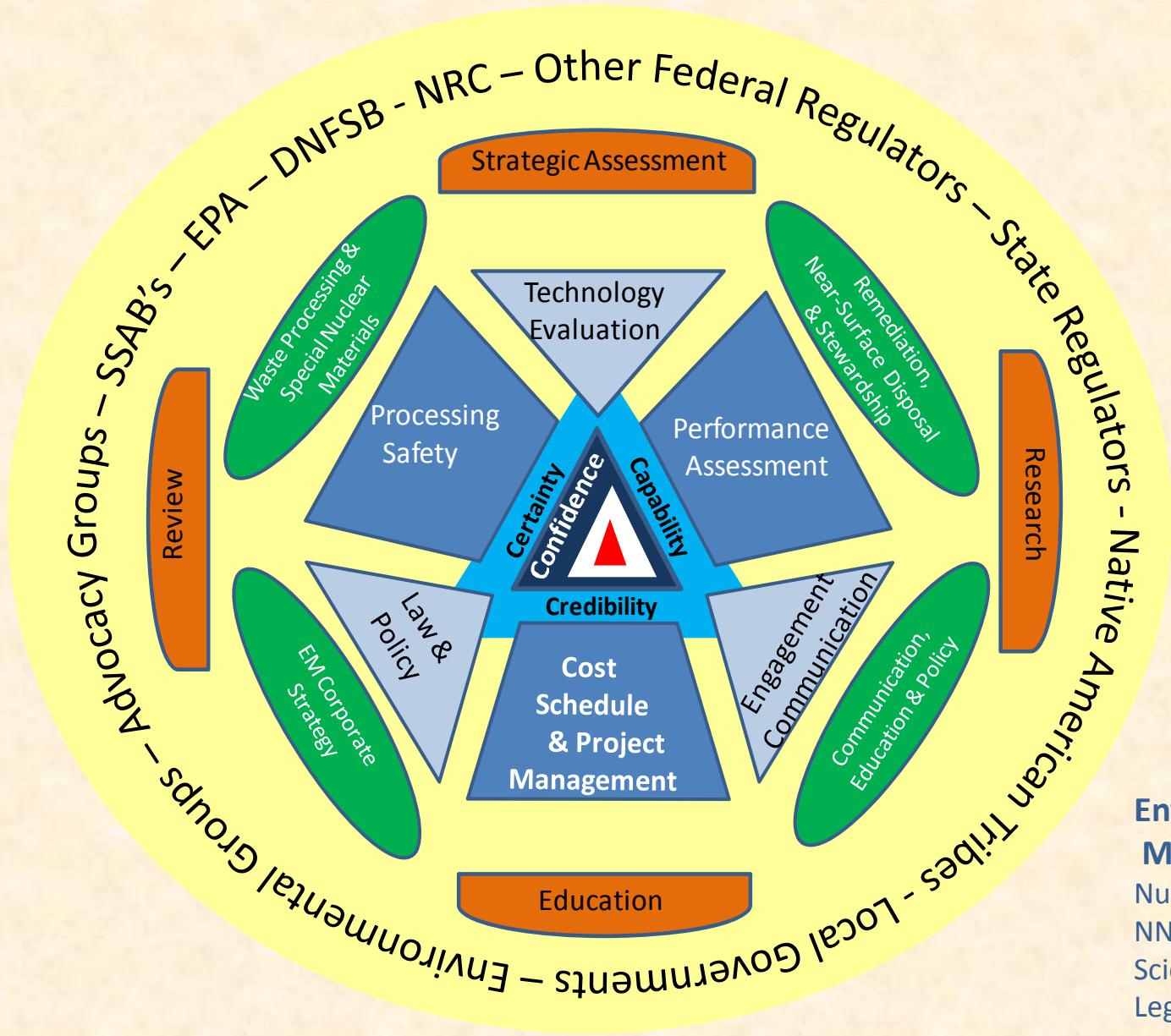
Other Participating Institutions: Rutgers University, New York University, Oregon State University, University of Pittsburgh, Howard University, University of Wisconsin, University of Arizona, Robert Wood Johnson Medical School, Georgia Tech



CRESP Mission

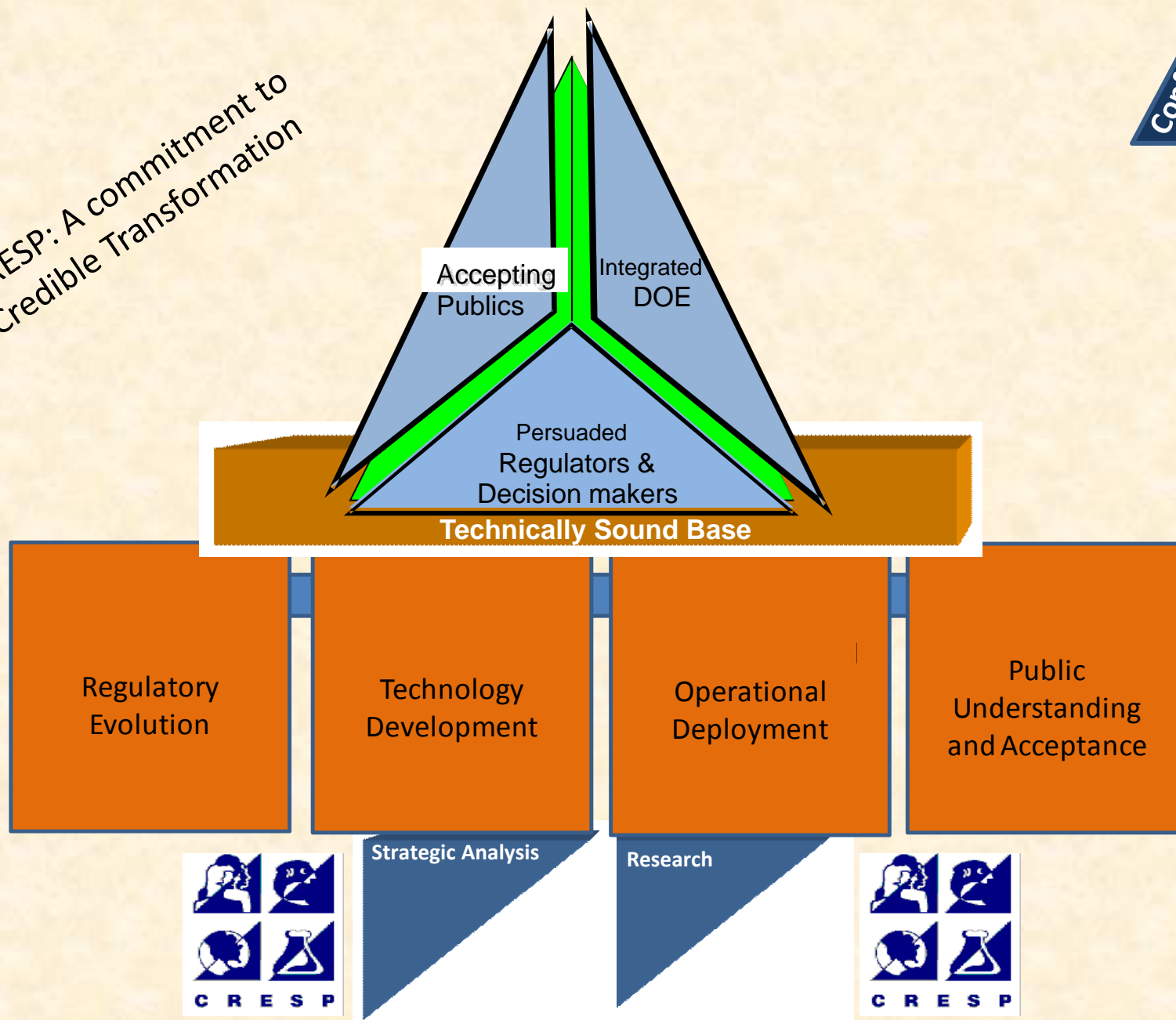
Support safe, effective, publicly-credible, risk informed management of existing and future nuclear waste from government and civilian sources through independent strategic analysis, review, applied research and education.

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CRESP: A commitment to Credible Transformation



Workshop Questions

- When and what type of risk assessment should be used as part of safety decisions?
- How should deterministic and probabilistic risk assessment techniques and results be integrated?
- How are and should risk assessment results be used in decision making?
- What are current policies and processes used by federal agencies and private industries to guide use of risk assessments in safety management?
- What are key lessons learned and can best practices be identified?

Workshop Observations and Summary

- PRA is an additional tool for integrated safety management, not a substitute for other tools
- A screening process is needed to identify when PRA should be used
- Development and evaluation of scenarios provides important insights into opportunities for focusing safety improvements
- Human factors is an important component of PRA and needs to consider latent and external factors

Workshop Observations and Summary

- Communication and Education is essential and an on-going need and challenge
 - Defined lexicon
 - Training of practitioners and decision makers
 - Clarity regarding aleatoric and epistemic uncertainties
 - Representation of consequences, frequencies and benefits trade-offs – risk analysis vs. value judgements of risk management decisions
 - On-going interaction with decision makers and external stakeholders

Workshop Observations and Summary

- Data gathering, including performance monitoring and precursors, should be part of process development and implementation in support of PRA
- On-going use of PRA as part of safety management (maintenance, change management)
- Independent Peer Review is a critical part of PRA, as well as other safety management processes

Thank You!

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