

**Introductory Remarks:**

This talk is premised on three disparate ideas: best practices from the science & engineering worlds, the German Alpine Club’s call for the promotion of a collegial feedback loop among climbers, and the observation that line ownership of safety is a prerequisite for quality risk management<sup>1</sup>. What connects these three ideas is the necessity both for individual contribution to the community and for community’s review of the individual contribution, whether the endeavor is science, risk management, or climbing. The application of constructive individual/community interactions to climbing may pose special challenges on account of the perception that climbing is an individual (anti-social) pursuit and the perception that experts have figured out how climbers should behave.

**Observations about research:**

From the individual perspective, good climbers are constantly engaged in research. This enterprise tends to be informal and anecdotal, based on happenstance rather than extensive exploration of the axes of a test matrix, based on word of mouth, based on published literature, from the internet to the climbing rags to the climbing equipment hang-tag to books. Climbers take in huge amounts of information, distill it, and make choices, and act based on this information. Climbers are able hypothesis testers; they are skilled at the conception, design, implementation, and evaluation of climbs and safety systems.

From a more formal science/engineering perspective, research closely guides climbing equipment and best practices. For example, equipment does not fail climbers—for the most part, the questions concerning the forces that occur during fall arrest and the requisite strengths of the equipment have been answered by research. The observation that climbers fail their equipment (often via misuse & abuse) suggests that the direction of future research will be closely linked to climber psychology and ergonomics.

Some questions cannot be answered by research. “I dropped this carabiner from the top of the climb *Intertwine*; it bounced twice on the cliff and fell in leaves. Can I still use it?” Such questions can only be answered by looking deeply into one’s soul.

**Exercise Objectives:**

- Provide the CWA with research directives
- Introduce participants to PREP as a model for collegial feedback
- Provide participants with an array of unknown things that are on people’s minds

<b>Schedule:</b>	Introductory remarks	10 minutes
	PREP Activity organization	5 minutes
	Individual Idea Generation I	10 minutes
	Peer Review I	10 minutes
	Group Focus Choice	5 minutes
	Individual Focused Idea Generation	10 minutes
	Peer Review/Focus II	10 minutes
	Proposal Generation	10 minutes
	Proposal Show & Tell	20 minutes

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<sup>1</sup> The citation listing is arbitrarily large; here I provide only three references that might lead to the tip of research iceberg: Schweirsch, Mersch, Trenkwalder, & Stopper, “Wovon hängen Kletterfehler ab?,” *Panorama*, 6/2004, 70-72  
Graham, Slocum, & Sanchez, Teaching High School Students and College Freshmen Product Development by Deterministic Design with PREP, *Journal of Mechanical Design*, July 2007, 129, 677-681  
Stewart, *Managing for World Class Safety*, Wiley & Sons, 2002