

Attributes of a Strong, Positive Research Laboratory Safety Culture at Stanford

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It is important to have a common set of safety culture attributes (principles, characteristics, and traits) that describe a strong, positive safety culture across the broad range of research laboratory activities. These attributes describe patterns of interaction, group dynamics, communications and behaviors that appropriately emphasize safety, particularly in “goal conflict” situations (e.g., research production vs. safety, research schedule vs. safety, and cost of the effort vs. safety). Attributes are kept at a sufficiently high level of detail to ensure that they apply across the range of research activities and myriad types of relationships [horizontal relationships (i.e., peer to peer researchers, individual researchers within laboratory group, researchers to safety representatives, etc.) and vertical relationships (researcher to faculty-PI/laboratory manager, researcher to EH&S, faculty-PI to Department Chair, and faculty-PI/laboratory manager to EH&S)] that exist among persons and groups engaged in academic research laboratory activities. The following represent the attributes of a strong, positive academic research laboratory safety culture:

Attribute	Positive Safety Culture (Principles, Characteristics, Traits)
<i>Research Group Organizational Dynamics</i>	<ol style="list-style-type: none"> 1. Faculty-PI/laboratory manager and research group members maintain a safety conscious research work environment in which personnel feel free to raise safety concerns without fear of retaliation. 2. Faculty-PI/laboratory manager and laboratory research personnel demonstrate ownership for safety in their day-to-day research activities. 3. Decision-making reflects that safety is a priority over research production and is compatible with good research science. 4. Processes for planning and controlling research activities and tasks ensure that individual faculty-PIs, researchers, and other laboratory personnel communicate, coordinate, and execute their research work in a manner that supports safety. 5. Faculty-PI/laboratory manager ensures that the personnel, equipment, tools, procedures, and other resources needed to ensure safety in the academic research laboratory are available. 6. Faculty-PI/laboratory manager understands the risks of the research being conducted, are interested and actively involved in the laboratory safety program, and integrate safety into the laboratory research culture.
<i>Working Behavior within the laboratory</i>	<ol style="list-style-type: none"> 7. Laboratory members are considerate of others working in the laboratory and maintain a laboratory environment where safety and laboratory housekeeping are very important. 8. Laboratory members openly discuss laboratory safety concerns and prioritization regularly. 9. Laboratory members identify and manage their own safety environment and are receptive and responsive to queries and suggestions about laboratory safety from their laboratory colleagues. 10. Laboratory members conduct their research using protocols and procedures consistent with best safety practices in the laboratory. 11. Faculty-PI/laboratory manager evaluates the laboratory safety status themselves and know what to change, if needed, and how to manage the change to enhance safety in the laboratory.

Attribute	Positive Safety Culture <i>(Principles, Characteristics, Traits)</i>
<i>Communication about safety within the laboratory</i>	<ul style="list-style-type: none"> 12. Communication about safety within the laboratory 13. The laboratory group ensures that issues potentially impacting safety are identified and appropriately communicated commensurate with their risks and potential consequences. 14. The laboratory supports a continuous learning environment in which opportunities to improve safety are sought, communicated and implemented. 15. The feedback loop on identified safety issues (bottom-up and top down) is closed (addressed) at the faculty-PI/laboratory management level. 16. Safety discussions become part of regular laboratory meetings; near misses within the laboratory are consistently reported in a timely manner and safety information is requested by laboratory members to prevent future mishaps through understanding HOW and WHY laboratory near misses and accidents happen.
<i>Environmental Health & Safety</i>	<ul style="list-style-type: none"> 17. EH&S provides easily accessible laboratory safety information. 18. EH&S staff promotes laboratory safety improvement while trying to reduce the inconvenience to laboratory members. 19. EH&S staff is involved in the early stages of laboratory and experimental design and provides technical consultation and safety support. 20. EH&S supports adaptation and localization of safety procedures by laboratory members so long as they meet the intent of the safety requirements. 21. EH&S communicates lessons learned from incidents and near-misses so others may improve safety practices (unless egregious actions, ongoing investigations or litigation preclude the sharing of details).
<i>Organizational Attitudes towards Safety</i>	<ul style="list-style-type: none"> 22. Roles, responsibilities, and authorities for safety in academic research laboratories are clearly defined and reinforced. 23. The organization's decisions ensure that safety in academic research is maintained as a priority and supported. 24. The organization ensures that the facilities, infrastructure, programs and other resources needed to ensure safety in academic research conducted at the institution are available. 25. Management acknowledges and rewards exemplar laboratory safety experiences and promotes as examples to other laboratories.