## BLAM Advantages in Viability Over Collison

Theoretically the BLAM should be able to deliver an aerosol with higher viability for a few reasons. The viability of the organisms that are potentially sprayed are affected by a multitude of factors such as oxygen exposure and relative humidity, but in addition to that it is also affected by the magnitude and direction of forces imparted onto the organism. Theoretically, if less frequent and lower magnitude forces are applied to the organism to aerosolize it, it should have a higher viability.

1) *Since the Collison is a nebulizer, it sprays the aerosol directly onto a hard surface to help break up the droplets even more. The BLAM avoids this by spraying either directly onto a bed of liquid, into a drying column, or with the new dilution system onto air moving the opposite direction.*

2) *The BLAM can be operated at a much lower air feed pressure then the Collison. The Collison is only meant to be used above 20 psi (for a single jet) to get the full characteristics of the device as shown by the manual, where as the BLAM can be operated at as low as 7 psi (also for a single jet). This is mainly caused by the different orifice geometries and ratios, but it results in lower magnitude forces being imparted onto the fluid to properly aerosolize it. It is also due to the fact that the BLAM utilizes a liquid feed channel which creates a "sheet" of fluid that the air is sprayed onto, where as the Collison utilizes a liquid feed channel which creates a "column" of fluid.*

3) *The BLAM allows for both Recirculation Mode and Single Pass Mode, or SPA mode, which allows the fluid you wish to aerosolize to be injected into the aerosol generator at your selected flow rate allowing you to control the amount of material aerosolized. The Collison only allows for Recirculation Mode which constantly recirculates the same liquid or material to be aerosolized over and over again. SPA Mode should have the ability to deliver a more viable aerosol because the biological agents are only passed through the aerosol generator once.*

4) *The BLAM can also be sprayed horizontally into a sanitary fitting to produce large micron size particles ideal for exposing the upper respiratory system.*

The BLAM's viability is essentially due to its efficiency in that it utilizes minimal energy to properly aerosolize a liquid.