"Can Commercial Air Disinfection Systems Improve Workplace Health?"

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Introduction:
Mishap Prevention and Hazard Abatement (MPHA) wants to create a repository of disinfection technologies against contagions, including COVID-19. This project aims to give the Navy more tools to improve defense against future pathogens.

Project Objective:
Assess 5 different disinfection systems, two using hydrogen peroxide (H$_2$O$_2$) and three using ultraviolet C (UV-C) light. We ranked them based on:
- Safety
- Cost
- Ease of installation and use

The testing site, a classroom in NBVC Port Hueneme Building 325, was chosen by the sponsors.

Interns utilized a zoning method to measure effectiveness at different distances from the systems.

Results / Accomplishments / Next Steps:
- The SCUVA T400 was the best overall with our unique scoring system.
- In the future this project could be used to assist with implementation of these systems into populated buildings
- Our project gives insight to future interns on how to perform successful biological experiments

<table>
<thead>
<tr>
<th>Name</th>
<th>Price(USD)</th>
<th>Ease of installation</th>
<th>Cost of Use Per Month</th>
<th>Disinfection</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUVA T400</td>
<td>734.77</td>
<td>Plug in, power on (2 pts)</td>
<td>8 hours a day $5.47 (2 pts)</td>
<td>94% (1 pts)</td>
<td>7</td>
</tr>
<tr>
<td>Dakota Safety CASPR Pro Duct Mount</td>
<td>1500 (2 pts)</td>
<td>2 24 hours a day $3.37 (2 pts)</td>
<td>94% (1 pts)</td>
<td>5</td>
<td></td>
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<tr>
<td>Dakota Safety CASPR Blu Tile</td>
<td>1700 (1 pt)</td>
<td>1 24 hours a day $0.94 (1 pt)</td>
<td>84% (0 pts)</td>
<td>4</td>
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<tr>
<td>Oranger Ceiling Mounted Germicidal UV-C</td>
<td>1777.25 (1 pt)</td>
<td>1 24 hours a day $6.73 (0 pts)</td>
<td>92% (1 pts)</td>
<td>3</td>
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<tr>
<td>UV Light Solutions Wall Mount Upper-Air UV Light</td>
<td>1069 (2 pts)</td>
<td>1 8 hours a day $2.50 (1 pt)</td>
<td>95% (2 pts)</td>
<td>6</td>
<td></td>
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</tbody>
</table>

Acknowledgements
This project would not have been possible without the help of our sponsors, Dave Chavez, Madeleine White, and Hunter Spence; our UCSB mentor, Erica Rivera; our Engineering Technician, Julio Luna; and Public Works Alex Navarro.