

SAN JUAN NM REGIONAL SCIENCE & ENGINEERING FAIR

JUNIOR AND SENIOR DIVISION

ABSTRACT & CERTIFICATION

TITLE: Totally RAD!

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Grade Level: 8th grade

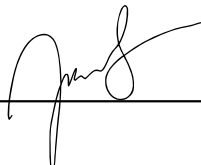
Type the Body of Your Abstract Here (250 Word Maximum)

How will long-term exploration in space affect the human body? Radiation is one of the most prominent dangers that must be addressed when considering space travel, basically detrimental to all parts of the body. This led to the researcher's question of how we can prevent the exposure of dangerous radiations to future Mars settlers? Totally RAD (radiation absorbed dose) does just that! Research and experiments are carried out to investigate the possible shielding materials for radiation protection for future space travelers. With an overwhelming 40-50 times the average radiation levels on Mars than Earth, currently the "Red Planet" is inhabitable. The researcher will use engineering countermeasures to find primary resources to shield Alpha, Beta, and Gamma particles. The two methods that the researcher will demonstrate to measure radiation exposure includes, the geiger counter method and the cloud chamber method. With the geiger counter, the researcher will place each material candidate between the radiation sources (Po-210, Sr-90, Co-60) and a detector (geiger counter). Using each of the different radiation sources, it will be determined which material blocks each radiation type and how much of the material is needed. The cloud chamber can be used to visually detect radioactive decay. The researchers' hypothesis that Magnesium will be the most sufficient material was determined through experiment, to be correct.

1. The student independently performed all procedures as outlined in this abstract Yes No
2. This project is a continuation. Yes No
3. This project is being presented at SJRSEF NMJAS Paper Competition

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Student's Signature



February 9 2021

Date

