Ultraviolet radiation plays a crucial role in the development of skin cancer. The sun emits electromagnetic waves in the form of ultraviolet radiation, penetrating the human skin layers and contributing to skin burning, wrinkling, and aging. Overexposure to UV radiation can also produce reactive oxygen species (ROS), byproducts of oxidative metabolism, which cause untreatable cell damage and increase the risk of skin cancer. Sunscreen use blocks UV rays from the skin. Even low-protection sunscreen reduces non-melanoma skin cancer by about 40% and lowers the risk of melanoma skin cancer by 50%. However, many of the active ingredients found in sunscreen are harsh chemicals that further skin damage. In 2021, fourteen of the sixteen FDA-allowed sunscreen chemicals underwent scrutinization for their lack of effectiveness and safety concerns. For example, two chemicals, oxybenzone and octinoxate, which cause coral reef bleaching, ultimately kill the coral. Dramatic reduction in coral reef populations can disrupt the ecological balance and seriously impact the ecosystem. Our project is an innovative method to extract two sunscreen pigments from a marine bacteria, cyanobacteria, offering the opportunity to replace the traditional active ingredients in chemical sunscreens with nonhazardous pigments. This photosynthetic microbe produces two environmentally friendly pigments, scytonemin and mycosporine-like amino acids (MAAs), which shield the cell from 90% UV-A light and absorb UV-B radiation, respectively. We will directly induce the production of scytonemin in the cyanobacterium *Nostoc punctiforme* and engineer *Escherichia coli* to overexpress the gene required for the biosynthesis of MAAs, synthesized mycosporine-glycine gene (MysC). Combining these pigments with inactive but beneficial ingredients commonly found in other sunscreens produces an environmentally friendly sunscreen that will benefit both the ecosystem and humans.