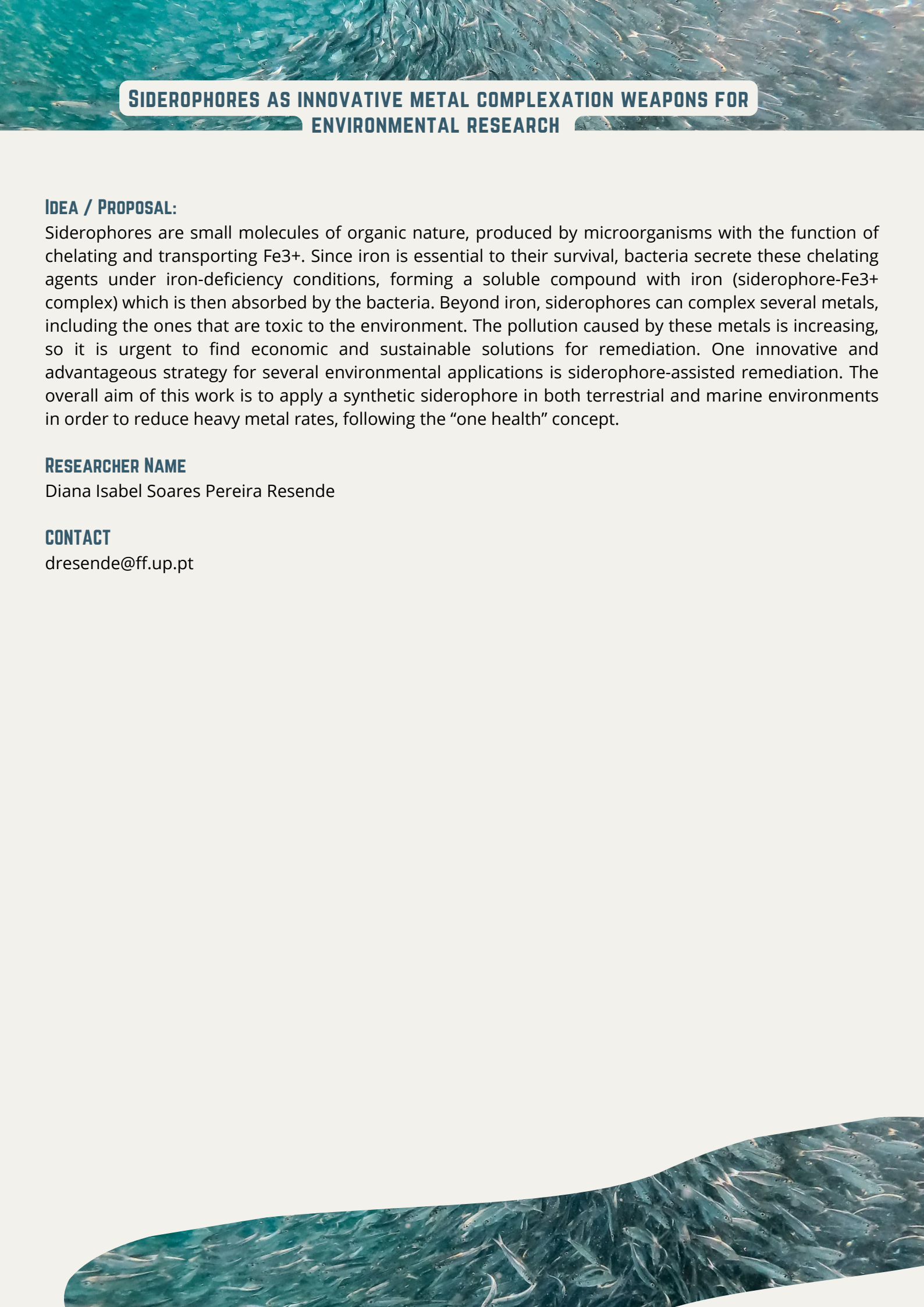




SIDEROPHORES AS INNOVATIVE METAL COMPLEXATION WEAPONS FOR ENVIRONMENTAL RESEARCH

IDEA / PROPOSAL:

Siderophores are small molecules of organic nature, produced by microorganisms with the function of chelating and transporting Fe^{3+} . Since iron is essential to their survival, bacteria secrete these chelating agents under iron-deficiency conditions, forming a soluble compound with iron (siderophore- Fe^{3+} complex) which is then absorbed by the bacteria. Beyond iron, siderophores can complex several metals, including the ones that are toxic to the environment. The pollution caused by these metals is increasing, so it is urgent to find economic and sustainable solutions for remediation. One innovative and advantageous strategy for several environmental applications is siderophore-assisted remediation. The overall aim of this work is to apply a synthetic siderophore in both terrestrial and marine environments in order to reduce heavy metal rates, following the “one health” concept.

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