Using Astrobiology to Introducing the STROMATOLITES (*Studying Totally Rad Objects in Modern and Ancient Thermal, Oceanic,Lithified, and Interlayered Textures on Earth/Exoplanets Syndicate*): an International Collaborative Early Career Research Group in Astrobiology

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Motivation: A concerning issue in STEM is the lack of true cross-collaboration between disciplines (Dodson et al., 2010). This lack of collaboration can have compounding negative effects on science by preventing the integrative connections and findings that develop from discourse between scientists of different disciplines. Moreover, the notion of 'publish or perish' - the idea that one must publish many first-author papers in high impact journals to be a successful academic - can reduce cross-collaboration by polarizing perspectives and narrowing the field of view (De Rond and Miller, 2005). The field of astrobiology offers opportunities to combat these problematic aspects of science, as it requires collaborations that extend across expertise and institutions. As such, we and future generations of astrobiologists must learn to effectively work together and hold each other to account to maintain high standards of scientific rigor. One of the ways in which to foster accessible, interdisciplinary collaboration is to create early career research (ECR) groups that support budding astrobiologists. The STROMATOLITES (*Studying Totally Rad Objects in Modern and Ancient Thermal, Oceanic, Lithified, and Interlayered Textures on Earth/Exoplanets Syndicate*) is one such group, organized and driven by ECRs from around the globe, many of whom do not have a large astrobiology community at their current institution.

How to Foster Collaboration in a Group: There are numerous ways to form effective lab groups (e.g., Dodson et al., 2010). Support and encouragement from institutions to establish collaborative ECR groups can greatly facilitate international exchange, but this support is rarely offered. Here, incentive and inspiration has come directly from ECRs passionate about making connections within astrobiology. Our ECR group, the STROMATOLITES, have utilized a number of strategies to cultivate collaboration: 1) establishing friendships in addition to collegial research relationships; 2) meeting on a rotating time basis so that members across all timezones are able to attend; 3) working on interdisciplinary projects that utilize the diverse scientific background of group members; 4) developing a general support network, including notifying group members of recent job/grant postings, discussing relevant literature, and providing resources for mental health and diversity initiatives; 5) sharing outreach resources which can aid in establishing science outreach programs in more isolated locations; 6) utilizing a number of ways to communicate and exchange information between members, e.g., Slack, Zoom meetings, email, Google Docs and Jamboard; and 7) not having standard organizational roles so that people are able to contribute as little or as much as is personally feasible.

Interactive Applications: We wish to gauge community awareness around the issues related to collaboration in science that we, as ECRs, face. We will use a polling website (e.g., Strawpoll) to benchmark audience experience, and a word cloud generator to highlight common or rare experiences with collaborative efforts in STEM. We will then lead a community discussion around how these issues are currently being addressed and how ECR groups can help drive change.

References:

De Rond M. and Miller A. N. (2005) J. Manag. Inq., 14(4), 321-329.

Dodson M. V. et al. (2010) Biochem. Biophys. Res. Commun., 2, 1155-7.