

Abstract Submitted  
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**Interdisciplinary Research and Education in STEM in a Discipline Dominated Academic Structure- Research and Education at the Cross Roads** SOLOMON BILILIGN, North Carolina A&T State University — Major issues in society - developing alternate sources of energy and a sustainable environment, improving health, and minimizing the effects of climate change require a collective effort by different disciplines working in interdisciplinary groups. Many major breakthroughs in science take place at the boundaries or intersections of disciplines. The need to create a new generation of students who combine a rigorous disciplinary depth with the ability to reach out to other disciplines and work in interdisciplinary teams is more urgent. There is a consensus that the current academic administrative structure is the most important barrier to interdisciplinary collaboration; other barriers like poor communication, etc., emanate from it. How can interdisciplinary education and research flourish while maintaining strong backgrounds in the disciplines? How can universities lower or remove barriers to faculty participation in interdisciplinary education and research and create porous, flexible, less redundant environment that facilitates the flow of ideas, people and resources across disciplinary boundaries? Is possible to have disciplines without disciplinary departments? In this short paper, the barriers and the challenges for developing interdisciplinary education and research will be summarized, lessons from some successful attempts and failures will be presented, and some approaches will be recommended for further discussion.

Solomon Bililign  
North Carolina A&T State University

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