

1145-P5-2947 **J. Lyn Miller***, lyn.miller@sru.edu. *Outside-the-Box Thinking about Number Theory for Future Elementary Teachers...and for Math Majors*. Preliminary report.

Creative mathematical thinking for pre-service elementary teachers can be as basic as breaking them away from the common settings of demonstrating direct mastery, conceptual understanding, and/or justification of procedures. However, when it comes to elementary number theory, math majors often are no better equipped to make this break, for their own number theory experience exceeds that of the future K-6 teachers only by the inclusion of rigorous proof. Thus, there is a rich trove of creative thinking tasks that can be mined from the gap between mastery of 4th-8th grade number theoretic algorithms and their underlying concepts, and proving that those algorithms and concepts are valid. This talk presents a few examples of such tasks that are accessible to both groups of students. (Received September 25, 2018)