

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, October 29
2:00 – 3:00 PM
Maria Sanford, Room 101

JACOBI'S TRIPLE PRODUCT IDENTITY AND THE Q-CALCULUS

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Abstract: In his book Quantum Calculus, V. Kac defines calculus in terms of the q -derivative, or Jackson derivative, which amounts to ordinary calculus without taking limits. We will see that many of the usual objects and results, such as Taylor's theorem, have analogues in quantum calculus. There are differences, however, that make quantum calculus very suitable for proving identities involving infinite q -series, which arise in number theory and combinatorics. In particular, we will talk about Jacobi's Triple Product Identity and how this can be used to prove Lagrange's Four Square Theorem, and the Euler Pentagonal Number Theorem.

For further information:
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