

THE COLLEGE OF SCIENCES AND MATHEMATICS &  
THE R. W. YEAGY COLLOQUIUM PRESENT:

# Automated Propositional Logic Proofs using Gentzen Deduction Trees

By

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In the mid 1930s, Gerhard Gentzen devised an algorithm to prove propositional logic theorems. Gentzen's method is similar to previous algorithms, in that it attempts to search for counterexamples to disprove a theorem, however it differs in that it breaks propositions into a number of *sequents*, each containing assumptions and conclusions.

While this results in a somewhat more intuitive proof, it has the added benefit of being very well suited to implementation by a computer. The use of trees, as well as a well-defined set of permitted operations, makes implementation of this algorithm far more natural than those of Gentzen's peers.