



THE FACULTY OF THE UNIVERSITY OF DELAWARE
WITH THE APPROBATION OF THE BOARD OF TRUSTEES
HEREBY ADMIT

Jorge Alberto Penaloxa Giraldo

TO THE DEGREE OF

Doctor of Philosophy

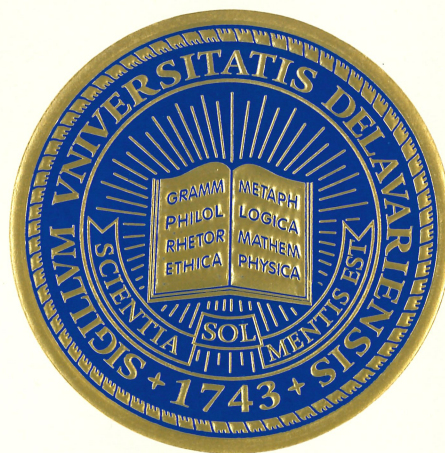
WITH ALL THE RIGHTS, HONORS, AND PRIVILEGES THERETO APPERTAINING,
GIVEN UNDER THE SEAL OF THE UNIVERSITY AT NEWARK, DELAWARE,
THIS TWENTY-FIFTH DAY OF MAY, TWO THOUSAND AND TWENTY-FOUR.

Dennis Assanis

PRESIDENT

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