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FIELD	GROUP	SUB-GROUP	Gas Turbines, Propulsion, Combustion, reprints. <i>(MGM)</i>		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Eleven students participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) program during the 1987-88 academic year. During this year: one new Ph.D. candidate completed two qualifying exams and initiated his thesis research; one new Ph.D. candidate withdrew from the program and is now permanently employed at a participating company; four M.S.M.E. candidates completed their thesis and are now permanently employed at a participating company; five M.S.M.E. candidates have completed their course work, and are working on their thesis projects.					
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~~ANNUAL SUMMARY REPORT~~

August 1987 - August 1988

RESEARCH AS PART OF THE  
AIR FORCE RESEARCH IN AERO PROPULSION TECHNOLOGY  
(AFRAPT) PROGRAM

GRANT AFOSR - 86 - 0305

Sanford Fleeter

August 1988

Thermal Sciences and Propulsion Center  
School of Mechanical Engineering  
Purdue University  
West Lafayette, Indiana 47907

Prepared for

Directorate of Aerospace Sciences  
Air Force Office of Scientific Research



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The status of the eleven students who participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) Program at Purdue during the 1987-88 academic year is summarized in the following.

**MICHAEL  
ANDRUSZKIEWICZ**

**Thesis Advisor:** Professor Sanford Fleeter  
**Research Topic** Forced Response of Advanced Turbomachine Blade Rows  
**Company Affiliation** General Electric - Cincinnati  
**Current Status** Mr. Andruszkiewicz has completed approximately 50% of his Ph.D. course work, has passed two Ph.D. qualifying exams, and has initiated his thesis research.

**JAMES ELEY**

**Thesis Advisor:** Professor Sanford Fleeter  
**Research Topic** Unsteady Flow Generated Structural Dynamic Blade Response  
**Company Affiliation** Pratt & Whitney - Florida  
**Current Status** Mr. Eley has completed his M.S.M.E. Thesis titled "Aerodynamics of an Oscillating Cascade With Flow Separation" and has accepted a permanent position at Pratt & Whitney - South.

**DANIEL GIORDANO**

**Thesis Advisor:** Professor Sanford Fleeter  
**Research Topic** Periodic Unsteady Flow Visualization and Analysis  
**Company Affiliation** Allison Gas Turbines  
**Current Status** Mr. Giordano has completed most of his M.S.M.E. course work and has initiated his thesis research. Also, he has been awarded the 1988 AIAA Gordon C. Oates Propulsion Award for first year graduate students.

**WILLIAM HAMILTON**

**Thesis Advisor:** Professor Sanford Fleeter  
**Company Affiliation** Pratt & Whitney - Connecticut  
**Current Status** Failed 2 out of 3 Ph.D. qualifying exams and has chosen to return to Pratt & Whitney - North on a permanent basis.

**GREG HEBERT**

**Thesis Advisor:** Professor William G. Tiederman  
**Research Topic** Comparison of Steady and Unsteady Flows in a Turbine Stator Cascade  
**Company Affiliation** Allison Gas Turbines  
**Current Status** Mr. Hebert has completed his M.S.M.E. program and is returning to Allison Gas Turbines on a permanent basis.

**ADAM LIPPERT**

**Thesis Advisor:** Professor Paul Sojka  
**Research Topic** Auto-Ignition of Endothermic Fuels  
**Company Affiliation** TEXTRON Lycoming  
**Current Status** Mr. Lippert

**DOUGLAS MORGAN**

**Thesis Advisor:** Professor John Sullivan  
**Research Topic** Concentration Measurements in a Cold Flow Model Annular Combustor Using Laser Induced Fluorescence  
**Company Affiliation** General Electric - Cincinnati  
**Current Status** Mr. Morgan has completed his M.S.M.E. program and is currently employed at AVCO

**JOSEPH NEAL**

**Thesis Advisor:** Professor Sanford Fleeter  
**Research Topic** The Effects of Loading on the Aerodynamics of an Annular Cascade of Three-Dimensional Airfoils  
**Company Affiliation** General Electric - Lynn  
**Current Status** Mr. Neal has completed his M.S.M.E. program and is currently employed at Pratt & Whitney - Florida.

**JEFF WHITLOW**

**Thesis Advisor:** Professor Arthur H. Lefebvre  
**Research Topic** Fuel Thermal Stability  
**Company Affiliation** Pratt & Whitney - Florida  
**Current Status** Mr. Whitlow has completed his coursework and is currently writing his M.S.M.E. thesis.

**JACK WHITE**

**Thesis Advisor:** Professor William G. Tiederman  
**Research Topic** Turbulence in Positive and Negative Pressure Gradient Boundary Layers  
**Company Affiliation** Allison Gas Turbines  
**Current Status** Mr. White has completed the majority of his M.S.M.E. course work and has initiated his thesis reseach.

**JAMES WOLFF**

**Thesis Advisor:** Professor Sanford Fleeter  
**Research Topic** Unsteady Viscous Flows in Airfoil Cascades  
**Company Affiliation** Garrett Engine Division  
**Current Status** Mr. Wolff has completed his M.S.M.E. course work and is currently finishing his thesis research. Mr. Wolff will be remaining in the Purdue AFRAPT program to a Ph.D. degree.