GEORGIA INSTITUTE OF TECHNOLOGY — OFFICE OF CONTRACT ADMINISTRATION

PROJECT ADMINISTRATION DATA SHEET

[x] ORIGINAL [ ] REVISION NO. ____

Project No. E-21-615 GTRI/~~GTRC~~ DATE 8 / 7 / 84

Project Director: John Buck School/~~Dept~~ EE

Sponsor: GTE Laboratories, Inc., Waltham, MA

Type Agreement: Agreement No. GTE-840525

Award Period: From 1/1/84 To 9/30/84 (Performance) 9/30/84 (Reports)

Sponsor Amount:	This Change	Total to Date
Estimated:	$	$
Funded:	$ 11,485	$ 11,485

Cost Sharing Amount: $ n/a Cost Sharing No: ____

Title: "Industrial Undergraduate Research Participation (IURP) Program

ADMINISTRATIVE DATA OCA Contact Dennis Farmer x4820

1) Sponsor Technical Contact:

Dr. John F. Ambrose, Director
External Technical Affairs
GTE Laboratories, Inc.
40 Sylvan Road
Waltham, MA 02254

2) Sponsor Admin/Contractual Matters:

Mr. Robert E. Walrath
General Cousel-Intellectual Property
GTE Laboratories, Inc.
GTE Service Corporation
100 First Avenue
Waltham, MA 02254 (617)890-9200

Defense Priority Rating: n/a Military Security Classification: n/a

(or) Company/Industrial Proprietary: n/a

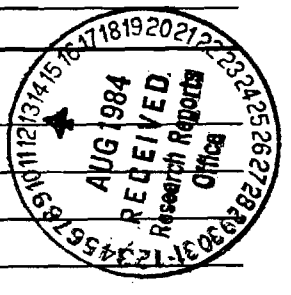
RESTRICTIONS

See Attached ____ Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval – Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

Equipment: Title vests with none

COMMENTS:



Sponsor I.D. #02.206.000.84.R02

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Procurement/EES Supply Services
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Reports Coordinator (OCA)
Research Communications (2)

GTRI
Library
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Other Newton

FORM OCA 4:383

GEORGIA INSTITUTE OF TECHNOLOGY OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

52118

Date October 3, 1985

Project No. E-21-615 School/~~Lab~~ EE

Includes Subproject No.(s) N/A

Project Director(s) John Buck GTRC /~~GIT~~

Sponsor GTE Laboratories, Inc., Waltham, MA

Title "Industrial Undergraduate Research Participation (IURP) Program"

Effective Completion Date: 9/30/84 (Performance) (Reports)

Grant/Contract Closeout Actions Remaining:

- [ ] None
- [X] Final Invoice or Final Fiscal Report
- [ ] Closing Documents
- [ ] Final Report of Inventions
- [ ] Govt. Property Inventory & Related Certificate
- [ ] Classified Material Certificate
- [ ] Other

Continues Project No. Continued by Project No.

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E-21-615

GTE IURP Program - Final Report

John A. Buck, Faculty Project Director July 27, 1984

My two weeks at GTE Laboratories occured between July 2 and July 13, 1984. During this time I worked closely with one of the students from my institution, chiefly in defining his course of action and goals for the summer. I also engaged in numerous discussions with other students in the program and with several GTE staff members.

During the first part of my stay, I planned the remainder of Mark Neifeld's project. Mark, a student from Georgia Tech, had completed the initial tasks I had assigned to him by the time of my arrival. He became sufficiently versed in the operations of GTE so that upon my arrival, we were able to develop a clear picture of what he could accomplish by the end of his stay. Mark's project was initiated by me, and involved the design and fabrication of ultrafast optoelectronic switches. The plan was for Mark to fabricate the devices at the Labs, whereupon they were to be tested at my laser facility at Georgia Tech. Details of material parameters and fabrication procedures were provided by Micheal Alexander of GTE, whose assistance was indispensable. Mike also provided the gallium arsenide wafers on which the devices were to be fabricated. Some silicon wafers for another class of devices were provided by Paul Poppert, also of the Labs. In addition to the fabrication project, Mark worked on a computer simulation of electrical pulse propagation effects in the devices. This study, while not affecting the current designs, should strongly influence future devices. The results of this work alone could provide publishable material if the study is conclusive.

GTE's initial interest in this work was expressed by Dr. Joseph Proud, who had worked previously with devices of this kind along with Scott Norman. During the latter part of my stay, Dr. Proud held a meeting which included myself, Neifeld, Alexander, Norman, and other members of his group,to discuss the project and its future

directions. Valuable input was provided, and the groundwork was laid for possible future interaction.

Other activities during my stay included my giving a seminar on past and present research interests, and discussions with members of the Nonlinear Optics Group for two of the afternoons. Out of these discussions came a few answers to some vital questions concerning other ongoing efforts of mine at Georgia Tech.

During my final days at GTE, I took an informal tour of the facility and met with a number of students in the program. Most of those with whom I visited were deeply involved in their projects and were ready to discuss their work in as much detail as I desired. There were a few cases of dissatisfaction which appeared to result either from personality conflicts between student and supervisor, or from apparent neglect of the student by his supervisor. It is not entirely surprising to me that cases of this kind occur. In my view, the fact that such cases were rare puts the program in a favorable light. I have no doubt that the prime benefactors of the program are the students. They have acquired a very realistic taste of the type of work, conditions (good or bad), and working methods that they will encounter in a research or industrial company. Many indicated to me their appreciation of the value of the program in terms of its influence on their senior year. The courses they select and their general attitude towards school are two of the factors which some students felt would be strongly affected. The senior year is a crucial time for any student, and I have come to regard even brief industrial experience as a necessity for most students before reaching this stage.

In summary, the benefits of the program to the students appear to be tremendous. I feel that I too have benefited substantially. I obtained the paid services of an excellent student and the use of GTE's facilities and expertise to further my own research efforts, while being given complete freedom to define the project and its direction. In the process, I established contact with a number of good people with whom I hope to maintain communication. It is my hope that future work of the type done this summer will be possible in collaboration with GTE.