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CHEMICAL RESEARCH, DEVELOPMENT & ENGINEERING CENTER

CRDEC-SP-054

HIGH SCHOOL APPRENTICESHIP

ELEVEN YEARS OF BENEFITS TO THE U.S. ARMY CHEMICAL RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

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PHYSICAL PROTECTION DIRECTORATE

September 1992

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U.S. ARMY ARMAMENT MUNITIONS CHEMICAL COMMAND

Aberdeen Proving Ground, Maryland 21010-5423

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(continued on page 2)

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13. ABSTRACT *(Maximum 200 words)*

This report summarizes the High School Science and Engineering Apprentice Program (SEAP) for 11 years at the CRDEC. Data is presented for each year to include the high schools that were represented and quantity of students selected from each school. Summary information is presented on the titles of the research activity for the students. The initial version of this report was assembled as a presentation for a Conference on Science, Math and Engineering (SME).

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11. SUPPLEMENTARY NOTES (Continued)

Research, Development and Engineering Center. In September 1993, this program will be formally transferred to the U.S. Army Chemical and Biological Defense Agency Business Office under Hayward Hulick.

PREFACE

The work described in this report was authorized under a DoD initiative for training high school students in science and engineering. The funding source was an overhead account. This work was started in June 1981 and completed in September 1992.

As of 1 October 1992, the U.S. Army Chemical Research, Development and Engineering Center will become the U.S. Army Edgewood Research, Development and Engineering Center. In September 1993, this program will be formally transferred to the U.S. Army Chemical and Biological Defense Agency Business Office under Hayward Hulick.

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Acknowledgments

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HIGH SCHOOL APPRENTICESHIP

ELEVEN YEARS OF BENEFITS TO THE U.S. ARMY CHEMICAL RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

The U.S. Army Chemical Research, Development and Engineering Center, Edgewood Area, Aberdeen Proving Ground, MD, has been an active participant in the High School Apprentice Program since 1981 when we had a modest start in sponsoring four students in our laboratory. I have been the single coordinator and major impetus in convincing our working scientists and engineers of the worth of the program.

I joined the already established program of the Naval Research Laboratory (NRL) in the Washington, DC, area and helped to establish a similar program at our laboratory. Mr. George Kelm of the Ballistic Research Laboratory (BRL) and I worked complimentary programs in our respective laboratories. Dr. Marilyn Krupsaw, Lin as she is called, is our primary point of contact in helping us to join the DC program.

Our goal was to offer local high school students an opportunity to spend 8 weeks during the summer in a laboratory atmosphere. They would perform experiments or other relevant work experience and then write a paper on the subject. For this effort, we established a stipend of $1,000 to cover their costs. To carry out the tasks with minimal amounts of paperwork, we were very specific to isolate this program from that of the normal summer hire program.

Our program grew over the years to the point where we were sponsoring at least 50 students each year. The operating technical staff was instrumental in selling the program to more mentors. They saw the worth of the student and heard the accolades of the mentors (Appendix A). This was augmented with the published reports of the students in an CRDEC Special Publication (SP). This SP was sent to all of the participating students, the high school principals, and the local legislators.

Our goal in all of the years was to select the most promising students. These students were chosen for their acceptable school grade point average, nomination statements from high school faculty, and personal statements from the students. In all of the years, we would get about three times as many applicants as we would appoint - 150-50.

There was no overt effort to contact specific schools or to appoint minorities, males, or females. The entire submission of applications was made available to all of the mentors: they chose the student based on credentials. Follow-up

interviews by the mentor and I augmented the selection process. Sons and daughters of the civilian and military families were afforded equal treatment in the selection/rejection process.

It became obvious that the mentors became involved with individual schools and advertised the program to the students at those schools. This became the primary reflection of our stewardship to the school system.

The following tables summarize the program over all of the years that we kept data. The years 1981 through 1983 were difficult to reconstruct but I did the best to find the statistics.

Tables 1 and 2 summarize the program for all of the 11 years. Here, total student participation, breakdown by schools, division by male and female, and where we could capture it, minority classifications. Table 2 shows where the students came from within the school systems.

Table 3 summarizes the early years, showing that the apprentices did go to college and did pursue a science and engineering degrees. This information is derived from our personal knowledge of the students as we talk to them during recruiting trips or hear from them by correspondence. There was no survey made of all of the students mainly because there is no mechanism nor charter to do so. This area can become a basis for a future study.

Table 4 illustrates some results we have gained from the students in accomplishing our mission. It is their studies and data collection that has enabled us to accomplish some of these tasks. This is only a summary of some positive results we can document. Many other tasks were accomplished. Other tasks are formally documented in CRDEC Special Publications CRDEC-SP-85003, CRDEC-SP-85010, CRDEC-SP-86022, CRDEC-SP-87025, and CRDEC-SP-028 and are summarized in Appendix B.

We extended all of our facilities and equipment to these students. Access to the electronic mail system allowed our first crisis to develop in 1987. Until that time, each student was given access to the CRDEC electronic mail system where they were allowed to collect their data and formulate their draft report. With this system, it was easy to find the reports, edit them, and then submit them for publication. This gave us a 2-month turn around in publishing the reports.

The crisis manifested itself when CRDEC Systems Security discovered that the students were "hacking" on the computer system with trading of passwords, improper log on, sending false messages, and transmitting personal greetings during peak demand for computer times. This problem existed at

TABLE 1

QUANTITY OF STUDENTS

DISTRIBUTED BY SEX, MINORITY STATUS AND ACADEMIC GRADE

YEAR	81	82	83	84	85	86	87	88	89	90	91	92
TOTALS	4	14	39	36	50	60	81	53	50	46	51	59
MEN	3	7		20	30	31	39	32	28	27	33	38
WOMEN	1	7		16	20	29	42	21	22	19	18	21
MINORITY	0	0		3	3	3	7	10	11	8	11	15
MAJORITY	4	14		33	47	57	74	43	42	38	40	44
GRADE 12	3	10		12	12	19	37	24	12	12	17	20
GRADE 11	1			14	14	37	34	22	25	21	23	19
GRADE 10		4		6	7	2	8	7	5	9	8	15
GRADE 9										2	3	5
OTHER										1		
TOTALS	4	14	39	36	50	60	81	53	53	46	51	59
YEAR	81	82	83	84	85	86	87	88	89	90	91	92

TABLE 2

QUANTITY OF STUDENTS

DISTRIBUTED BY HIGH SCHOOL

YEAR	81	82	83	84	85	86	87	88	89	90	91	92
ABERDEEN				1	3	4	9	2	1		1	1
BALTIMORE LUTHERAN				1	1	1		1		1		
BALTIMORE POLYTECH				3								
BEL AIR				1	1	5	7	6	10	9	5	5
BOHEMIA MANOR									1			
CALVERT HALL								1	2			2
CENTENNIAL										1	2	1
COMMUNITY				1	1							
C. MILTON WRIGHT				6	7	14	23	14	9	5	7	8
DUNDALK				1	1							
EASTERN VO-TECH										1		
EDGEWOOD				4	3	2	6	3	6	8	12	9
FALLSTON				3	7	9	7	2	5	7	2	2
FRANKLIN CITY								1				
GILMAN					1		1	1				1
HARFORD CHRISTIAN				1	1	2	1					
HARFORD TECH HIGH												1
HAVRE dE GRACE						2	3	2	1	3	2	3
JOHN CARROLL				4	5	4	7	5	4	4	6	2
JOPPATOWNE					4	4	6	2		2	4	10
KENWOOD				1								
LAKE BRANTLEY					1	1	1					
LOCH RAVEN								1	1			
LOYOLA HIGH								2			1	
MT. HEBRON								1	1			
NORTH EAST							1			1		1
NORTH HARFORD				2	4	3	5	4	3	1	2	2
PERRY HALL					3	3	1				3	2
PERRYVILLE				4	4	2	2	3	3		1	5
PIKESVILLE									1	1	1	1
RED LION												1
RISING SUN				3	3	3				2	1	1
SEVERNA PARK									1			
SUSQUEHANNOCK								2	2			1
WEST LAUDERDALE						1						
WOODLAWN							1					
TOTAL	4	21	39	36	50	60	81	53	53	46	51	59

TABLE 3

CRDEC APPRENTICES - CURRENT STATUS IN COLLEGE CAREER

YR	NAME	SCHOOL	YEAR	CAREER
82	GAVLINSKI	VPI	GRADUATE	ME AT AMSAA
86	ENGLISH	VPI	GRADUATE	ME
	GAVLINSKI	ST MARY	GRADUATE	RESEARCHER
	HATFIELD	VPI	GRADUATE	ME AT CRDEC
	OUELLETTE	VPI	GRADUATE	ME AT CSTA
	REES	BOSTON U	GRADUATE	ECONOMIST
	SAPONARO	U OF MD	GRADUATE	BUSINESS CPA
	SCAVNICKY	DELAWARE	GRADUATE	U OF DEL GRAD SCHOOL
	STROVEL	SHEPHERD	GRADUATE	JOURNALISM
87	GRAYSON	VPI	GRADUATE	GEOLOGY
	MONKS	TOWSON	GRADUATE	BUSINESS
	NOVAK	NAVAL ACAD.	SENIOR	NAVAL
	NUESSLEIN	VPI	GRADUATE	U OF ILL PHILOSOPHY
	RENARD	PITT	GRADUATE	EE AT BRL (CRAY)
	VINCENTI	ST MARY	GRADUATE	BIOLOGY & PRE-MED
	VANDENBOCHE	LOYOLA	GRADUATE	BIOLOGY
88	EICHENSHER	HOPKINS	GRADUATE	EE
	FIALA	CARNEGIE MELLON	GRADUATE	MATH
	SCHMIDT	OBERLIN	JUNIOR	PHYSICS
89	GERVASONI	LOYOLA	JUNIOR	BUSINESS
	RICKETTS	VILLA JULIE	FRESHMAN	SCIENCE
	STUEMPFLE	SHEPHERD	JUNIOR	MATH
	STUMP	SALISBURY	JUNIOR	PHYS ED
	VERVIER	UVA	JUNIOR	BIOLOGY

TABLE 4

CRDEC APPRENTICE ACCOMPLISHMENTS

YEAR	NAME	ACCOMPLISHMENT
1987	Kang	Prepared Government Patent Application for a Filter
1986	Hatfield	Prepared and Mapped Bacterial Planned DNA
	Knight	Categorized Catalytic Oxidation Rectors
	Rees	Evaluated Military Respirators
	Ouellette	Jet Turbine Dissemination Techniques
	Cayce	Installed 4-DEC Computer System Program
	Albert	Toxicity Effects of Brass on Plants and Soils
	Gavlinski	Evaluate Prior Escape Experiences on Rats
	Scheuren	Evaluate Lectin Enzyme Assay Detection Test
1988	Baesden	Evaluate Sub Munition Ejection Program
	DeVivo	Revision of Bacteriological Media
	Eichensehr	Surveillance Testing of Butyl Cloth

both CRDEC and BRL and was traced to one or two students who were clearly bent on disruptive behavior. Within CRDEC, 13 students were identified and terminated from the program. These students were terminated at the 6th week of the program, causing forfeiture of half the stipend. Parental furor erupted, and upon reporting the problem to an inquiry by the Commanding General, each parent and student was allowed a hearing with me. At that hearing, I presented the printed examples of the students' transgressions to the parent, and each student accepted the fault. Each parent was offered the opportunity to accept responsibility for their child, and the matter was resolved with each student finishing the program with pay.

In all of our projects, we measured how much work was required to accomplish a task in man years. For the apprentice program, this translates into man weeks where every year each student provides eight man weeks of effort. The CRDEC uses the normalized rate of $60 per man hour or $2,400 per man week. Here we illustrate that we have leveraged the $1,200 8-week stipend by 16. That compares the $1,200 paid for 8 weeks to a full staff cost of $19,200. That is a sizeable return on investments.

The facts of the program can be manipulated in many ways; but, the conclusion to all of the information is that the CRDEC and all of the participating staff have provided STEWARDSHIP to the community. One needs no greater reward than that.

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APPENDIX A

TOTAL: 196 MENTOR PARTICIPATION ('84 - '92)

1.	GAVLINSKI	11 YEARS
2.	ARMSTRONG	8 YEARS
3.	SAPONARO	8 YEARS
4.	FAMINI	7 YEARS
5.	WEISS	7 YEARS
6.	CHENG	6 YEARS
7.	CLARK	6 YEARS
8.	FRITCH	6 YEARS
9.	MARCHAND	6 YEARS
10.	YEH	6 YEARS
11.	ASHMAN	5 YEARS
12.	CARRIERI	5 YEARS
13.	DEFRANK	5 YEARS
14.	FITZGERALD	5 YEARS
15.	HSU	5 YEARS
16.	WEBER	5 YEARS
17.	ALTHOUSE	4 YEARS
18.	CHURCH	4 YEARS
19.	COMPTON	4 YEARS
20.	JAMES	4 YEARS
21.	KRAYBILL	4 YEARS
22.	MITCHELL	4 YEARS
23.	NOVAK	4 YEARS
24.	STARKE	4 YEARS
25.	SCHLEIN	4 YEARS
26.	VALDES	4 YEARS
27.	YOUNG	4 YEARS
28.	ARCA	3 YEARS
29.	BATELKA	3 YEARS
30.	DITILLO	3 YEARS
31.	GIER	3 YEARS
32.	GROSS	3 YEARS
33.	GOODE	3 YEARS
34.	HUERTAS	3 YEARS
35.	KINNE	3 YEARS
36.	KRISHNAMURTHY	3 YEARS
37.	LAWHORNE	3 YEARS
38.	LIEBENBERG	3 YEARS
39.	LEE	3 YEARS
40.	MUMFORD	3 YEARS
41.	MILLER	3 YEARS
42.	SNYDER	3 YEARS
43.	SHETTERLY	3 YEARS
44.	SCHMIDT	3 YEARS
45.	WHITE	3 YEARS
46.	WASEL	3 YEARS

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APPENDIX B

SEAP STUDENT REPORTS

1984 SEAP STUDENT REPORTS reference: CRDEC-SP-85003

AUTHOR	TITLE
1. Timothy English	Analytical Techniques of Sorbents and Chemical Species Identification
2. Denise Hammond	Direct-Acting Chromogenic Detector Reagents
3. Samuel Hsu	The Physiological Effects of Pinacolyl Alcohol on Rats
4. Jack Peters	Developments in Air Plasma Studies
5. Jeffrey Adams Lisa Balliet John Jordan Gregory Tate	Physical Property Testing of the XM40 and the M17 Protective Masks
6. Kristin Call	Physical Protection
7. Charles Carter	Video Image Digitizing Analysis
8. Clare Ewald	Branch Record Automation
9. Christopher Jarusek	Technical Assessment of the Fit of the M17A1 Protective Mask Versus Facial Measurements
10. Daniel Kaplan	Characterization of the Model 260 Aerosol Generator
11. William McCullough	Prototype Maximization and Nonsubjective Sizing
12. John Prichard	Developmental Adhesive Testing Procedure
13. Paul Solomon	Spare Parts Analysis for Cost Reduction
14. Charles King	Simulant Analysis Using Gas Chromatography
15. John Albert	Computer Entry/Exit Model
16. Brian Brooks	Surface Reflection Three Dimensional Display
17. Patrick Engram	Palantiri
18. Maria Horsey	Data Base Program
19. John Kelley	A Curve-Fitting Program for Behavioral Studies
20. Ingrid Kohlstadt	Computers and Engineering Support
21. Stephen Saponaro	Computer Aided Design/Computer Aided Manufacture
22. Kerry Foster	The Effects of Physostigmine on Treadmill Performance in Rats
23. Lori Foster	A Preliminary Evaluation of the Baseline Running Wheel Activities of the Rat
24. Kristin Gavlinski Jenean Tulley	Veterinary Resources Support for Toxicology Research and Testing
25. Victoria Linkous	Immunochemical Techniques for Detection and Identification of Biological Materials
26. Michelle Miller	Preparation of Rat and Hamster Microsomes and Comparing Them Using the Ames Assay
27. Amelia Pare	The Effects of Physostigmine on Open-Field Activity
28. Mark Pare	Daily Activity Patterns in Ferrets
29. Roger Richmond	Teratogenicity of Hydra Attenuata and Xenopus Laevis as a Result of Toxic Insult
30. Jennifer Vervier	Antimicrobial Activity of Earthworm Coelomic Fluid
31. Vicki Wolff	Immunochemical Techniques for Detection and Identification of Biological Materials
32. Denise Walker	M51 Charcoal Dusting Test

1985 SEAP STUDENT REPORTS reference: CRDEC-SP-85010

AUTHOR	TITLE
1. Patrick Engram	IR Smoke Pots
2. Denise Hammond	Triple Quadruple Mass Spectrometry of Dimethylmethylphosphonate
3. Kelly Harmon	Drop Fate
4. Ingrid Kohlstadt	Ammonia Off-Gassing and Content Tests on Impregnated Carbons
5. Kathleen Sindt	Vapor Measuring Technique
6. John Yeh	The Making and Studying of Flakes
7. Jeffrey Adams Kevin Lugo Lisa Balliet John Jordan	Testing Protective Masks/Ultrasound Research/ Testing Burster Cases
8. John Cook	Design and Fabrication
9. Steven Yerman Christina Hull	The Optimization of the XM49 Filter Fabrication Process
10. Michael Rees	Attenuator Test of the M81
11. Barbara Starkey	State of the Art Filter Life Test Evaluation
12. Christopher Strovel	Turbulence Testing in a Subsonic Wind Tunnel
13. Todd Robinson	Testing of Masks and Hoods
14. William McCullough	Probe Location Study
15. Peter Albert	Testing the Toxicity of Brass Powder on the Environment
16. Elise Arle	Air Purification by Catalytic Oxidation
17. Steven Brown	Triple Quadruple Mass Spectrometry of Dipropylene Glycol Monomethyl Ether
18. Mark Unger Tammy Kile	Isolation and Purification of Enzymes
19. Michelle Miller	Using the Ames Assay to Screen Chemical Compounds
20. Robert Mroz	Chemical Reconnaissance: A Matter of Safety
21. Brian Nuesslein	A Summary of My Work Experience
22. John Packard	Soil Porosity: A Hurricane of Methods, A Drizzle of Data
23. Jennifer Vervier	DFPase from a Bivalve Mollusk (Rangia cuneata)
24. Brian Brooks	Computer Modeling and Statistical Analysis of Reflectance Data
25. Charles Crizer	Computer Modeling of Infrared Detectors
26. Clare Ewald	ACADA Test Results Data Base System
27. Matthew Gross	Program Debugging
28. Maria Horsey	Test Data and Linear Regression Program
29. Jeffrey Leo	DOD Apprenticeship: Final Report
30. Melanie Appel Debbie Robbins	Viewgraph
31. Stephen Root	Apprenticeship within the Information Services Branch at CRDC
32. Greg Tate Stephen Saponaro	Computer Aided Design
33. Mark Pare	Preparation of Equipment and Computer Programs for Evaluating a Behavioral Training Method in Rats
34. Michelle Renard	Decontamination of Chemical Agent Simulants by Means of Jet Engine Exposure
35. Kerry Foster	Conditioning a Group of Rats for a Learning and Performance Behavioral Test

1986 SEAP STUDENT REPORTS reference: CRDEC-SP-86022

AUTHOR	TITLE
1. Paul English	Transducer Calibration
2. Kevin Lugo	Vibration Tables/Grenade, Hand, and Smoke , M18
3. Christopher Strovel	Comparison of Data Reduction Techniques for Wind Tunnel Testing
4. Susan Knight	Air Purification by Catalytic Oxidation
5. Dyer Bennett	A Summer Work Experience in the Physical Protection Directorate
6. Steven Brown	My Summer at Decon Systems
7. Cynthia Bucci	Technical Data Files
8. Christine Castle	Robotically Automated Sample Handling Laboratory
9. Dawn Gilbert	Producibility Apprentice
10. Denise Hammond	Comparison of Electron Ionization and Atmospheric Pressure Ionization Mass Spectrometry
11. Thomas James Jeffrey Franz	Systems Engineering: The Silo
12. Paige Killian Sandra Samples Danielle Stephenson	Summary of a Work Experience in TD/CM
13. Thomas McMaster	NBC Sanator
14. Michael Rees	Evaluation of Military Respirators
15. Todd Robinson	Respiratory Testing
16. Michael Scavnicky Craig Proaps	Effects of Different Flowrates and Humidities on C2 Canisters
17. Greg Tate Stephen Saponaro	Computer Aided Design
18. Denise Williams Hae Jun	Special Summer Projects in Support of Jet Engine Decontamination Studies
19. Willard Barker	Working at CRDEC
20. Craig Hatfield Gary Peters	Preparing and Mapping of Bacterial Plasmid DNA
21. Robyn Holbrook Christina Houseknecht	Experimental Measurements of the Spreading of Chemical Surety Materials on Solid Surfaces
22. Patricia Kaminski	Technology Group Apprentice
23. Deirdre Haywood Theresa Keyes	Comparing Spread Factors
24. Christine Goeller Danielle Ouellette	Jet Turbine Dissemination/Analytical Technique
25. Girish Munavalli	Quantitative Studies of the Flourescence Enhancement Phenomenon Produced by Certain Detector Reagents When They are Contacted by Solutions of Organic Compounds
26. Todd Nelson	Molecular Modeling of Opiate Compounds
27. William Parker	Chemical Inventory and Data
28. Kathleen Sindt	Methyl Salicylate Diffusion
29. Jeffrey Burgee	Compiling a Database
30. Gail Cayce	Installation of DEC Computer Systems
31. Michael Franks	Apprenticeship within the Producibility Branch, CRDEC
32. Shawn Hannan	My Involvement with the Apprenticeship Program
33. Brian Nueslein	Learning and Using the Intel Computer
34. Debbie Robbins	Calculator

AUTHOR	TITLE
35. Stephen Root	Computer Applications within the CRDEC Technical Library
36. Janet Sisk	Forms Management
37. Mike Thomassy	Learning Fortran and Using a CAD System
38. Peter Albert Jane Seiter	Toxicity and the Environment
39. Mark Pare Kristin Gavlinski	The Effect of Prior Escape Experience in Rats on Subsequent Conditioning to a Nondiscriminated Avoidance Schedule
40. Lara Holly	Bioavailability of Chromium from Whetlerite Dust
41. Heidi Reich	Enzyme Activity in Thermophiles and Halophiles
42. Amy Richeson	Environmental Studies and Laboratory Techniques
43. Rebeka Deas Kimberly Rodgers	Receptor Systems as Screens for Toxicity: Action of Organophosphates and Organochlorines
44. John Scheuren	Lectin Enzyme Assay Detection Test for Ribose and Isolation of DNA and RNA
45. Mark Unger	Pyruvate Kinase
46. Maria Wall	Biotech

1987 SEAP STUDENT REPORTS reference: CRDEC-SP-87025

AUTHOR	TITLE
1. Donna Clem	Generation of Cubic Sodium Chloride Aerosol Particles
2. Shavit Birenvige	Efficiency Testing Of An Electrical Aerosol Size Analyzer
3. Kristin Carmean	Diffraction of Infared Spectra on Polystyrene Spheres
4. Christina Houseknecht	Analysis by Pyrolysis/Gas Chromatography with Subsequent Data Processing
5. Christine Kutchey	Fiber Optic Detection
6. Brian Nueslein	Characteristics of Aerosol Generation and Detection
7. John Powell	Dynamic Measurements of Contact Angles
8. Dawn Simon	Temperature Effects on BPL and ASC Carbons
9. Christopher Strovel	Hot-Wire Anemometry
10. Sindhu Abraham	The Production of the M40 Mask and the C2 Canister
11. Dyer Bennett	Physical Protection Equipment Research
12. Christopher Caudill	Improved Chemical/Biological Agent Decontaminant
13. Jennifer Davis	Corrective Lens Study for Protective Masks
14. John Deas	M43 Mask, Producibility Engineering
15. Christine Goeller	IPE Challenge Testing
16. Deirdre Haywood	XM55 Large Area Screening System
17. Thomas James	NBC Detection Systems on the MICAD and CADNET
18. Steven Kang	Government Patent of the Product Improved M8A3/MI3A1 One-Man Gas Particulate Filter Unit
19. John Loper	Compression Pad Problems
20. Kevin Lugo Donna Vincenti	Developmental Test Procedures
21. Thomas McFall	MICAD/CADNET Testing
22. Thomas McMaster	NBC Sanator Parts List
23. Kevin Mish	XM55 Reliability Test Plan
24. Karen Poole	NBC Warning Network Testing in MICAD/CADNET Projects
25. Mark Radovich	Apprenticeship at Screening Smoke
26. Todd Robinson	Respiratory Testing
27. Michael Scavnicky	Speech Intelligibility in American Protective Masks
28. Trevor Smith	Preparing a Chemical Detector for Testing
29. Diane Sparks	Improved Chemical/Biological Agent Decontamination Project
30. Scott Wooddell	RASTI Test System & Voice Amplification
31. Lorie Sue Fleming	Charcoal Absorption
32. Wendy Hinton	Hydra Attenuata System for Detection of Teratogenic Hazards
33. Sandy Hsu Kelley Knight	Thin Layer Chromatography, Organic Synthesis, and Isolation and Purification of Enzyme
34. Lara Holly	Modification in a System for Computer-Assisted Chemical Inventory
35. Girish Munavalli	Fluorescence Enhancement Phenomenon Produced by Certain Detector Reagents When Contacted by Solid Organic Compounds
36. Todd Nelson	Molecular Modeling of Opiate Compounds

AUTHOR	TITLE
37. Lisa Priborsky Alex Framarini	The Effects of Chemicals on Sperm Cell Motility
38. Glen Wischhusen	Referee Standards
39. Marie Yeh	Catalytic Oxidation of Monomethylamine
40. Michael Adams	ICD Transmission Log
41. J. Steve Anthony	Computer Aided Design as Learned on Computervision
42. Willard Barker	Inside the Data Management Office
43. Steven Danielson	Working at PAD
44. Mary Craig Bonnie Grayson	Computer Programs for the Collection, Analysis, and Formatting of Behavioral Data
45. Michael Bredehoeft	Computer Systems
46. Gail Cayce	Document Instructions for File Transfer Communications and Create Project Schedules with Project Management Software
47. Paige Kilian Danielle Stephenson	Technical Data/Configuration Management Systems and Operations
48. Stephen Levin	Programming a Hewlett Packard 9845 B
49. David Maillett	Learning, Programming, and Teaching on an IBM-PC
50. Kevin Matthai	The Automation of the Business Clearance Memorandum
51. Christopher Novak Jami Hershfeld	Compiling a Data Base and Program to Process the Data
52. Robert Price	Researching the Effects of ESD on Integrated Circuits and Creating a Baseline Cost Estimate Worksheet Using 20/20 Spreadsheet Modeling Program
53. Kenneth Renard	Computer Programming for Office Automation
54. Debbie Robbins	Writing a Calculator Program for the VAX
55. Dorothy Spurlin	Creation of a Data Base File
56. Janet Sisk	Accessing the UNIX System
57. Michael Thomassy	Programming in C
58. Marie VandenBosche	Computer Applications within the CRDEC Technical Library
59. Carla Williams	Munitions Surveillance Report Database
60. Mark Gilbert	Robotically Automated Laboratory
61. Peter Albert	Organization of Veterinary Services Archives
62. Tim Braue	Techniques in Electron Microscopy and Pathology
63. Bonnie DeVivo	Enzymatic Decontamination
64. Zoya Fansler Tara Redican	Enzymology Research
65. Craig Hatfield	Determining Location of Gene Coding in a Thermophilic Bacteria
66. Christopher Lee	In Vitro Testing of Irritancy of Substances Foreign to the Eye
67. Deborah Lovelace	Kinetic Analysis of Muscarinic Receptor Binding in Cortex, Hippocampus, and Striatum
68. Joann Monks	The Development of an Enzyme Inhibition Assay
69. Jeanne Nuzman	Detection of Toxins
70. Cristin O'Rourke	The Effects of Carbachol on Cultured Embryonic Chick Retinal Cells

AUTHOR	TITLE
71. Danielle Oullette	Effects of Pyridostigmine on the Molecular Weight Forms of Cholinesterase in Rats
72. Padma Rajasekhara	Cellular Protien Determination as an Alternative to Animal Testing
73. Cheryl Sweeney	Inhibition and Aging Rates of Phosphorinanes on Cholinesterase

1988 SEAP STUDENT REPORTS reference: CRDEC-SP-028

AUTHOR	TITLE
1. Sindhu A. Abraham	The Production of the M40 and M30 Masks
2. W. Troy Baisden	Submunition Ejection Program for Adexjam with T-Rad
3. Jonathan Batchelor	Technical Data Preparation
4. Shavit Birenvige	Analyzing Aerosol Particles
5. Gregory M. Blake	Component Categorization of the XM22 Automatic Chemical Agent Alarm
6. Leslie Bowers	Collective Protection Equipment
7. Todd Coen	Isolation and Purification of Malic Dehydrogenase from Beef Heart
8. Darren Colvin Mary Beth Craig Bonnie Grayson	Hexavalent Chromium Content of Whetlerite
9. Steven Danielson June Hong	Computer-Assisted Analysis of Sperm Cell Motion for Toxicological Testing
10. Bonnie DeVivo	Revision of Bacteriological Media for Isolate 6-5
11. Andrew Dunn	A Programatic & Policy Profile of the U.S. Army Chemical Corps -- 1946 to Present
12. Phillip Eichensehr	Operations in Chemical Surveillance
13. John Fiala	Creation of a Logic-Based Threat Evaluator to Determine the Probability of a Bio. Attack
14. Charles Guido	A Prototype Database for the Compendium of Naturally Produced Hazardous Substances
15. Jonathon Heitz	Screening Plasmid DNA in Halophiles
16. Heidi Hudler	Literature Search on the Concerns of Ozone Depletion
17. Jennifer Hughey Donna Vincenti	Graphic Capabilities
18. Steven Kang	M43 & M40 Masks Producibility Engineering
19. Judith Kim Christine Kutchey	Adaptation of SP2/O-Ag14 Cell Line to Bovine Calf Serum-Supplemented Medium
20. Christopher Lee	Using the Eyetex Screen System
21. Michelle Lee Shirley Leung	Comparison of Monoclonal Antibodies and Polyclonal Antibodies for Use in Immunoassays
22. Michele Martin	Producibility of Modular Collective Protection Equipment
23. Timothy McAveney	Analog Circuitry: The Square Law Detector
24. William McGann	Molecular Structure Optimization and Data Basing
25. Anoopa Munavalli	Comparison of the Mutagenic Responses in Two Potential Mutagens
26. Christopher Novak	Master Industrial Engineering Plan Chart Production
27. Karen Poole	Chemical Agent Detection Network
28. Lisa Priborsky	Screening Tests for Detector and Capture Antibodies
29. Robert Price	Project Management and Documentation
30. Andrew Ptak	Project Management Systems
31. Mark Radovich	Apprenticeship at Screening Smoke
32. Tara Redican	Validation of Sampling Procedures for Methyl Salicylate
33. Kenneth Renard	Summer Apprentice Report
34. Vicki Roberts	Anthropometric Survey

1988 SEAP STUDENT REPORTS reference: CRDEC-SP-028

AUTHOR	TITLE
35. Mike Scavnicky	Using Pure-Tone Frequency Tests To Determine the Speech Transmission of Various Masks
36. Karl Schmidt	The Use of Tektronics Computer Aided Design Software: TekniCAD
37. Steve Schriver	Failure Analysis of an In-House Project
38. Aaron Shadis	Modification of CADDS System
39. Clifford Smith	Testing of Protective Masks in a Test Chamber Complex
40. David Sorkin	Computer Aided Design
41. Ronald Stump	The Fielding and Spare Parts Effort of the M17 Sanator
42. Margeret Thomas	Computer Applications in the Physical Protection Directorate
43. Steven Unger	MolDIS: A Molecular Graphics Package for the Hewlett Packard 9845B Microcomputer
44. Donna Williamson	Lectins and Their Use in Detecting Viruses and Bacteria
45. Thomas Wood	Devolopment of a Database Inventory of Equipment Catalogs and Modification of a Video for Marketing a Program

APPENDIX C

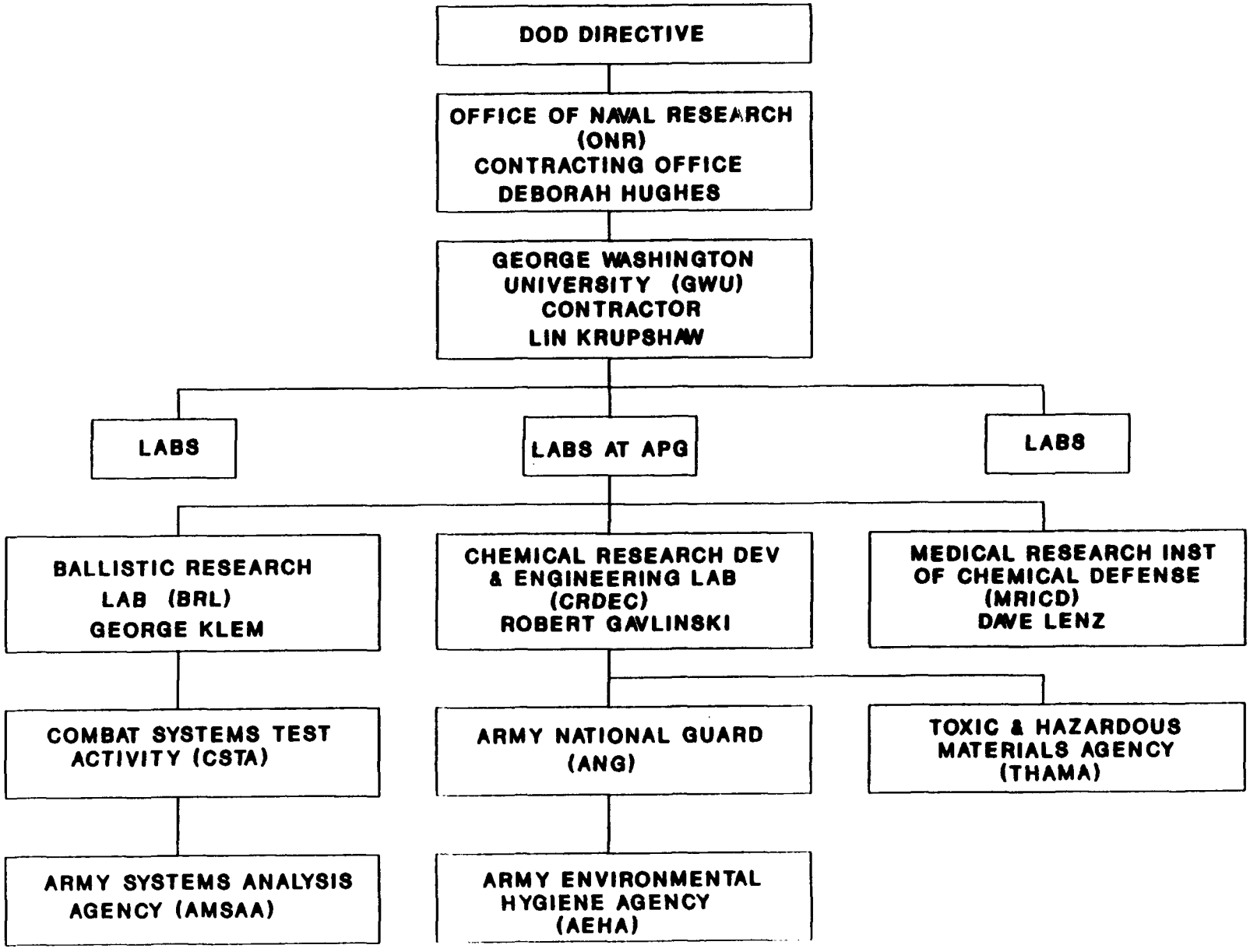
ORDER OF PRESENTATION

Order of Presentation

VG 1	Header
VG 2	Order of Presentation
VG 3	Overview (Figure 1)
VG 4	Statistics by Quantity by Sex, Minority and Academic Grade (Table 1)
VG 5	Statistics by School (Table 2)
VG 6	Observations of Program (Figure 2)
VG 7	Current Status in College Career (Table 3)
VG 8	CRDEC Apprentice Accomplishments (Table 4)
VG 9	Problems and Solutions (Figure 3)
VG 9A	Mentor Participation (Figure 4)
VG 10	Benefits (Figure 5)
VG 10A	Benefits of Apprenticeship Program (Figure 5 Alternative)

ORDER OF PRESENTATION

- OVERVIEW OF APPRENTICE PROGRAM AT CRDEC
- 1984-1992 STUDENT & SCHOOL STATISTICS
- OBSERVATIONS OF THE PROGRAM
- APPRENTICE'S CAREER FOLLOWUP
- EXCERPTS OF TECHNICAL REPORTS
- CONCLUSION


DOD DIRECTIVE
OFFICE OF NAVAL RESEARCH (ONR) CONTRACTING OFFICE DEBORAH HUGHES
GEORGE WASHINGTON UNIVERSITY (GWU) CONTRACTOR LIN KRUPSHAW
LABS
LABS AT APG
LABS
BALLISTIC RESEARCH LAB (BRL) GEORGE KLEM
CHEMICAL RESEARCH DEV & ENGINEERING LAB (CRDEC) ROBERT GAVLINSKI
MEDICAL RESEARCH INST OF CHEMICAL DEFENSE (MRICD) DAVE LENZ
COMBAT SYSTEMS TEST ACTIVITY (CSTA)
ARMY NATIONAL GUARD (ANG)
TOXIC & HAZARDOUS MATERIALS AGENCY (THAMA)
ARMY SYSTEMS ANALYSIS AGENCY (AMSAA)
ARMY ENVIRONMENTAL HYGIENE AGENCY (AEHA)

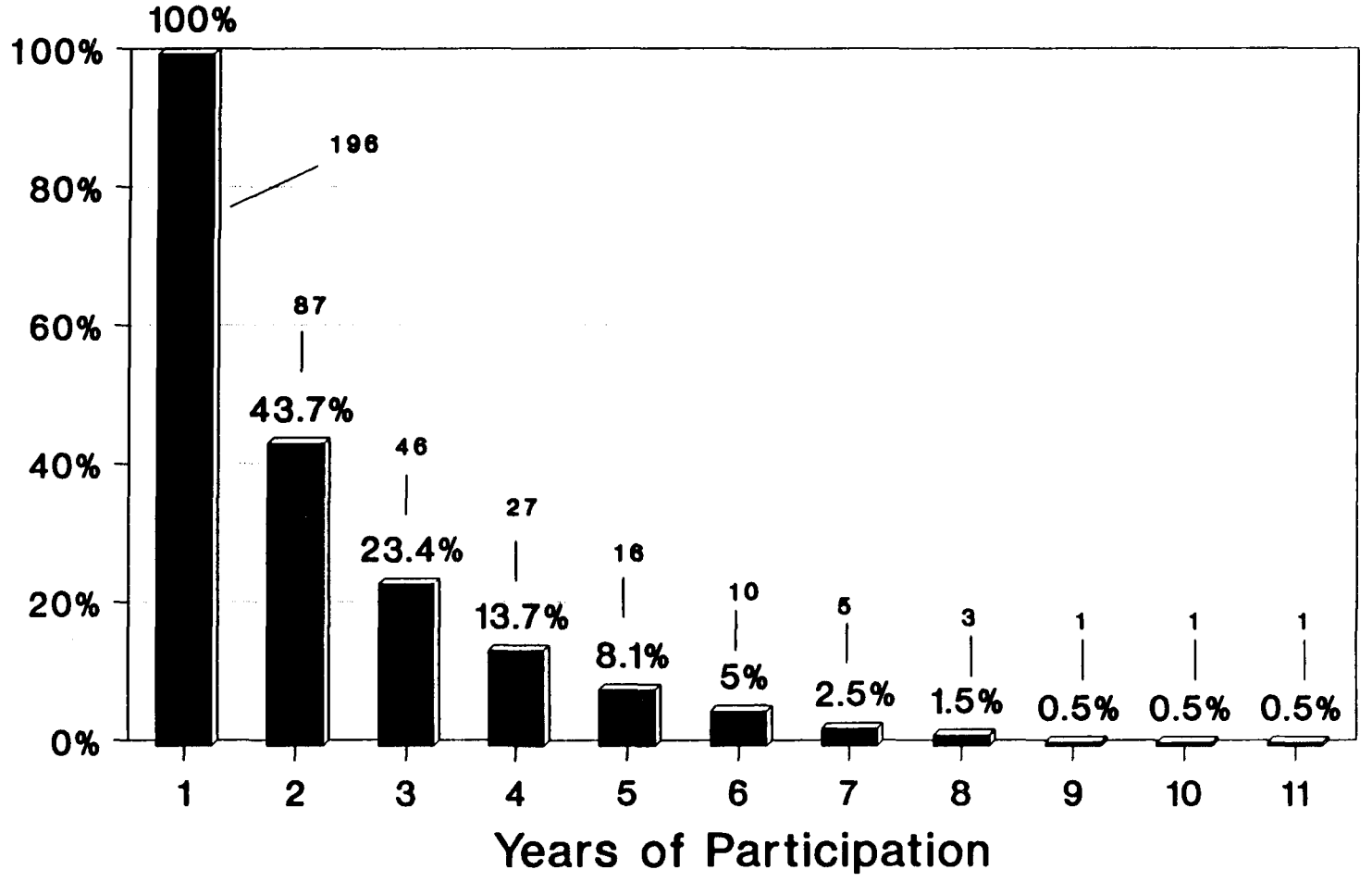
OBSERVATIONS OF THE PROGRAM

- HARFORD COUNTY (MD) PREDOMINANT
- APPROX 50/50 RATIO BOY TO GIRL
- APPROX 150/50 RATIO APPLICANTS TO APPOINTMENTS
- JUNIORS & SENIORS PREDOMINATE FOR SELECTION
- PUBLISHED REPORTS ARE IMPORTANT STUDENT GOAL
- STIPEND IS ADEQUATE METHOD OF COMPENSATION
- SCIENTIFIC STAFF FREED OF ROUTINE TASKS
- MINORITY PROGRAM NOT A PREDOMINANT FACTOR
- SCHOOLS & MENTORS FORM TECHNICAL BONDS
- STUDENTS REPEAT AT COLLEGE LEVEL AS CONTRACTORS
- STUDENT'S CAREER GOALS ARE FORMALIZED
- SUMMER INTERVAL OF 8 WEEKS IDEAL

PROBLEMS AND SOLUTIONS

- STUDENTS CAUGHT "HACKING" ON ELECTRONIC MAIL BY SYSTEMS SECURITY
- THIRTEEN STUDENTS WERE SUMMARILY TERMINATED AT THE SIXTH WEEK
- PARENTAL UPROAR
- PERSONAL CONFERENCE AMONG STUDENT, PARENT AND COORDINATOR
- STUDENTS CONFRONTED WITH PRINTED "HACKING" DOCUMENTATION IN PRESENCE OF PARENT - MOST ADMITTED TO FAULT
- PARENTS WERE REQUIRED TO ACCEPT RESPONSIBILITY FOR CHILDREN IN WRITING
- AGREEMENT REACHED, STUDENTS WERE RE-APPOINTED AND COMPLETED THE PROGRAM IN THAT YEAR
- SINCE 1988 STUDENTS ARE DENIED ACCESS TO ELECTRONIC MAIL

Percentage of Participation
Of 196 Mentors



BENEFITS TO CRDEC

- 8 WEEK INTERVAL FITS SUMMER STAFF SCHEDULE
- RETURN ON INVESTMENT IS 16 TO 1 BY DOLLARS ALONE
- EAGER AND TALENTED WORK FORCE AUGMENTATION

BENEFITS TO STUDENT

- HANDS ON EXPERIENCE
- PUBLISHED PAPER
- STIPEND COMPENSATION
- NETWORKING TO OTHER STUDENTS
- CAREER GOALS SOLIDIFIED
- MENTOR BONDING

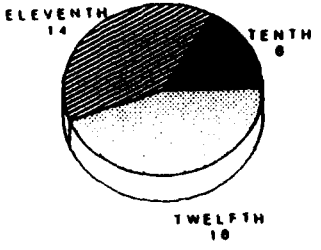
BENEFITS TO COMMUNITY

- STEWARDSHIP TO SCHOOLS CONFIRMED

BENEFITS OF APPRENTICE PROGRAM

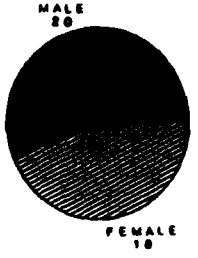
- COST PER STUDENT IS LOW ($1200 FOR 8 WEEKS)
- HIGHLY MOTIVATED HELPER TO THE MENTOR
- SCIENTIFIC ACCOMPLISHMENTS ARE WORTHWHILE
- EASY TO HANDLE THE PROGRAM
- CIVILIAN PERSONNEL OFFICE ASSISTANCE NOT REQUIRED
- NO MANPOWER SLOTS REQUIRED

1984 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

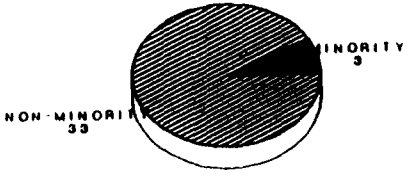


TOTAL 30 STUDENTS

1984 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



1984 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

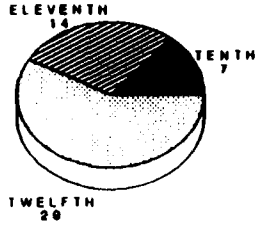


TOTAL 30 STUDENTS

1984 APPRENTICESHIP PROGRAM SUMMARYSHEET

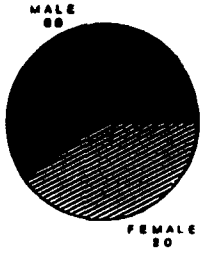
NAME	SCHOOL	GRADE	SEX	MINORITY
ADAMS, JEFFREYD.	ABERDEEN	11	M	N
ALBERT, JOHN P.	EDGEWOOD	11	M	N
BAILEY, LISA N.	PERRYVILLE	11	F	N
BROOKS, BRIAN P.	C. MILTON WRIGHT	11	M	N
CALT, KRISTIN B.	C. MILTON WRIGHT	11	F	N
CARTER, CHARLESE.	PERRYVILLE	11	M	N
ENGLISH, ANTHONY J.	FALLSTON	11	M	N
FOGARTY, PATRICK J.	BALTIMORELUTHERAN	11	M	N
HOWARD, CLARE A.	BEL AIR	11	F	N
FOSTER, KERRY L.	PERRYVILLE	11	M	N
FOSTER, JON	RISING SUN	11	M	N
GAVLINSKI, KRISTIN B.	C. MILTON WRIGHT	10	F	N
HAMMOND, DENISE M.	NORTH HARFORD	10	F	N
HORSEY, SARAH R.	NORTH HARFORD	10	F	N
[illegible]	CONOWINGO	11	F	Y
JAROSEK, CHRISTOPHER F.	EDGEWOOD	12	M	N
JORDAN, JOHN A.	JOHN CARROLL	12	M	N
KAPLAN, DANIEL L.	BALTIMOREPOLYTECHINST.	12	M	N
KELLEY, JOHN L.	C. MILTON WRIGHT	12	M	N
KING, CHARLES L.	EDGEWOOD	12	M	N
KONSTANTOPOULOS, THEODORE.	DUNDALK	11	M	N
KROUSE, VICTORIA F.	HARFORD CHRISTIAN	11	F	N
MCCULLOUGH, WILLIAM A.	EDGEWOOD	11	M	N
MILLER, MICHELLE Y.	C. MILTON WRIGHT	11	F	N
PAGE, ANGELA A.	RISING SUN	10	F	N
PAGE, MARK T.	RISING SUN	10	M	N
PHELPS, JACK D.	FALLSTON	11	M	N
PRICHARD, JOHN D.	C. MILTON WRIGHT	11	M	N
RICHARDS, RUFUS A. Jr.	BALTIMOREPOLYTECHINST.	12	M	N
RICHARDS, STEPHEN K.	PERRYVILLE	12	M	N
SOLOMON, PAUL E.	FALLSTON	12	M	N
YATE, GREGORY D.	JOHN CARROLL	12	M	N
TULLEY, JEREMY	JOHN CARROLL	12	M	N
VERVIER, JENNIFER M.	JOHN CARROLL	12	F	N
WEBER, DENISE L.	BALTIMOREPOLYTECHINST.	12	F	N
WOLFF, VICKI L.	KENWOOD	12	F	N

1985 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

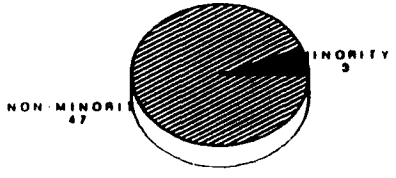


TOTAL 50 STUDENTS

1985 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



1985 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

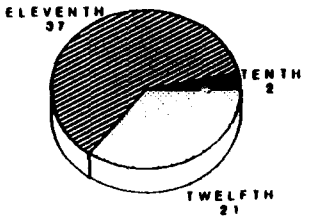


TOTAL 50 STUDENTS

1985 APPRENTICESHIP PROGRAM SUMMARY SHEET

NAME	SCHOOL	GRADE	SEX	MINORITY
ADAMS, JEFFREYD.	ABERDEEN	12	M	N
ALBERT, PETER J.	EDGEWOOD	12	M	N
APPEL, MELANIEM.	FALLSTON	12	F	N
ARLE, ELISEM.	FALLSTON	12	F	N
BAILEY, LISAM.	PERRYVILLE	12	F	N
BROOKS, BRIAND.	C. MILTON WRIGHT	12	M	N
BROWN, STEPHENJ.	RISING SUN	12	M	N
COOK, JOHN G.	JOPPATOWNE	12	M	N
CRITZER, CHARLESF.	NORTH HARFORD	12	M	N
ENGLISH, PAUL M.	FALLSTON	12	M	N
EWERAH, PATRICKJ.	BALTIMORE LUTHERAN	12	M	N
FORD, CLAREA.	BEL AIR	12	F	N
FOSTER, PERRY L.	PERRYVILLE	12	M	N
GAYLORD, KRISTINB.	C. MILTON WRIGHT	12	F	N
GROSS, MATTHEWF.	PERRYVILLE	12	M	N
HAMMOND, DENISEM.	NORTH HARFORD	12	F	N
HARDEN, KELLY B.	NORTH HARFORD	12	F	N
HORNE, MARY B.	NORTH HARFORD	12	F	N
HULL, CHRISTINAL.	PERRY HALL	12	F	N
HSU, SAMUEL S.	COMMUNITY	12	M	Y
JORDAN, JOHN A.	JOHN CARROLL	12	M	N
KILE, TAMARA L.	C. MILTON WRIGHT	12	F	N
KOHLSTADT, INGRIDC.	DUNDALK	12	F	N
LEO, JEFF J.	PERRY HALL	12	M	N
LINCOLN, VICTORIAL.	HARFORD CHRISTIAN	12	F	N
LUGO, KEVIN M.	ABERDEEN	12	M	N
MARTINEZ, MICHAELJ.	JOPPATOWNE	12	M	N
MCCULLOUGH, WILLIAMA.	EDGEWOOD	12	M	N
MILLER, MICHELLEY.	C. MILTON WRIGHT	12	F	N
MOOD, ROBERT C.	FALLSTON	12	M	N
MUESSLEIN, BRIAN J.	JOHN CARROLL	12	M	N
PARKARD, JOHN S.	FALLSTON	12	M	N
PAGE, MARK T.	RISING SUN	12	M	N
REES, MICHAELD.	FALLSTON	12	M	N
RENARD, MICHELLEJ.	EDGEWOOD	12	F	N
ROBBINS, DEBBIES.	LAKE BRANTLY	10	F	N
ROBINSON, TODD L.	JOPPATOWNE	10	M	N
ROOT, STEPHEN T.	PERRY HALL	10	M	N
SAPONARO, STEPHENK.	PERRYVILLE	11	M	N
SCHEUREN, JOHN D.	ABERDEEN	11	M	N
SINDT, KATHLEENA.	FALLSTON	11	F	N
STARKEY, BARBARA.	RISING SUN	12	F	N
STROVEL, CHRISTOPHERJ.	JOPPATOWNE	10	M	N
TATE, GREGORY V.	JOHN CARROLL	11	M	N
TULLEY, JENEANT.	C. MILTON WRIGHT	11	F	N
UNGER, MARK D.	C. MILTON WRIGHT	11	M	N
VERTIER, JENNIFERM.	JOHN CARROLL	12	F	N
WHITECOTTON, MARK D.	JOHN CARROLL	12	M	N
YEN, JOHN R.	C. MILTON WRIGHT	12	M	Y
YERRAM, STEVE H.	GILMAN	12	M	N

1986 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE



TOTAL 60 STUDENTS

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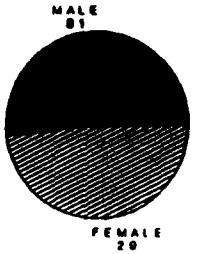
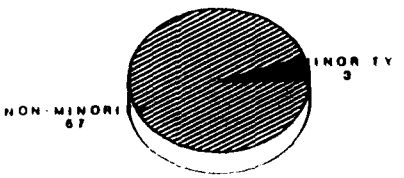


1986 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

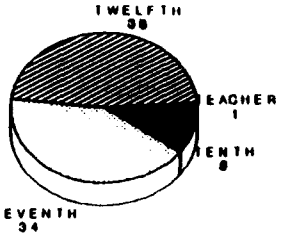


TOTAL 60 STUDENTS

1986 APPRENTICESHIP PROGRAM SUMMARY SHEET

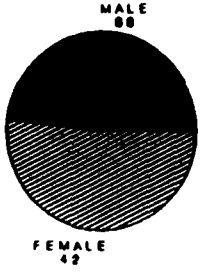
NAME	SCHOOL	GRADE	SEX	MINORITY
ALBERT,PETER J.	EDGEWOOD	11	M	N
BARKER,WILLARDD.,Jr.	C. MILTON WRIGHT	11	M	N
BENNETT,OTER M.	PERRYVILLE	11	M	N
BOLD,STEPHEN J.	RISING SUN	12	M	N
BUCK,CYNTHIA J.	JOHN CARROLL	10	F	N
BURGEE,JEFFREY N.	BEL AIR	11	M	N
CASTLE,CHRISTINE M.	BEL AIR	11	F	N
CAYCE,GAIL E.	FALLSTON	11	F	N
CRAS,REBEKAH A.	HARFORD CHRISTIAN	11	F	N
ENG,JEW PAUL H.	FALLSTON	12	M	Y
FRANKLIN,ALEXANDROP.	HAVRE DE GRACE	11	F	N
FRANKS,MICHAELE.	PERRY HALL	11	M	N
FRANZ,JEFFREY W.	JOHN CARROLL	11	M	N
GAYLOSKI,KRISTIN B.	C. MILTON WRIGHT	12	F	N
GILBERT,DAWN M.	C. MILTON WRIGHT	12	F	N
GOETTER,CHRISTY INE C.	C. MILTON WRIGHT	12	F	N
HANNAN,SHAWN M.	FALLSTON	12	M	N
HARROLD,DENISE M.	NORTH HARFORD	11	F	N
HATFIELD,CRAIG E.	FALLSTON	11	M	N
HAYWOOD,DEIDRE N.	ABERDEEN	11	F	N
HOLBROOK,ROBYN M.	HARFORD CHRISTIAN	11	F	N
HOLLY,LARA J.	C. MILTON WRIGHT	11	F	N
HOOGERHEYDE,CHRISTINA M.	NORTH HARFORD	11	F	N
JAMES,THOMAS E.	ABERDEEN	12	M	Y
JUN,JAE S.	PERRY HALL	12	M	Y
KAMINSKI,PATRICIA	C. MILTON WRIGHT	12	F	N
KEYES,THERESA	C. MILTON WRIGHT	12	F	N
KILLAM,PAIGE C.	C. MILTON WRIGHT	11	F	N
KNIGHT,SUSAN L.	NORTH HARFORD	11	F	N
LUCAS,KEVIN	ABERDEEN	11	M	N
MCMASTER,THOMAS B.	FALLSTON	11	M	Y
MUNAVALLI,GILLY	C. MILTON WRIGHT	11	F	Y
NELSON,TODD M.	EDGEWOOD	11	M	N
OBRIEN,BRIAN J.	JOHN CARROLL	11	M	N
OURLETTE,DANIELLE K.	C. MILTON WRIGHT	11	F	N
PAGE,MARK J.	RISING SUN	12	M	N
PARKER,WILLIAM R.	BEL AIR	12	M	N
PETERS,CARL N.	FALLSTON	12	M	N
POPE,CRAIG S.	WEST LAUDERDALE	12	M	N
REES,MICHAEL O.	FALLSTON	12	M	N
RICO,HEIDI E.	C. MILTON WRIGHT	11	F	N
RICHESON,AMY H.	BEL AIR	12	F	N
ROBBINS,DEBBIE S.	LAKE BRANTLY	11	F	N
ROBINSON,TODD I.	JOPPATOWNE	12	M	N
RODGERS,KIMBERLY D.	FALLSTON	12	F	N
ROOT,STEPHEN Y.	PERRY HALL	11	M	Y
SAMPLES,SANDRA K.	JOPPATOWNE	11	F	Y
SAPONARO,STEPHEN K.	PERRYVILLE	12	M	N
SCAVNICKY,MICHAEL J.	JOPPATOWNE	10	M	N
SCHUMEN,JOHN P.	ABERDEEN	12	M	N
SEITER,JANE J.	RISING SUN	12	F	N
SIMMONS,KATHLEEN A.	FALLSTON	12	F	N
SISK,JANET L.	C. MILTON WRIGHT	11	F	N
STEPHENSON,DANIELLE S.	NORTH HARFORD	11	F	N
STOVEL,CHRISTOPHER W.	JOPPATOWNE	11	M	N
TATE,GREGORY W.	JOHN CARROLL	12	M	N
THOMASSY,MICHAEL C.	BEL AIR	12	M	N
UPPER,MARK D.	C. MILTON WRIGHT	12	M	N
WALL,MARIE N.	C. MILTON WRIGHT	12	F	N
WILLIAMS,DENISE L.	HAVRE DE GRACE	12	F	N

1987 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE



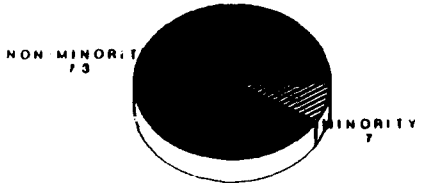
TOTAL 80 STUDENTS & 1 TEACHER

1987 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



TOTAL 81

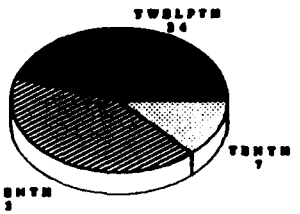
1987 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS



1987 APPRENTICESHIP PROGRAM SUMMARY SHEET

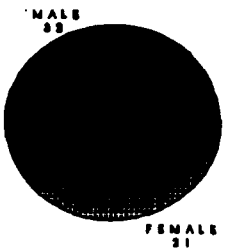
NAME	SCHOOL	GRADE	SEX	MINORITY
ABRAHAM, SINDHU A	C. HOLTON WRIGHT	11	F	Y
ADAMS, MICHAEL D	C. HOLTON WRIGHT	11	M	N
ALCOTT, PETER J.	EDMUNDS	12	M	N
ANTHONY, JOHN D	DEL AIR	12	M	N
BARNES, WILLARD D. JR	C. HOLTON WRIGHT	12	M	N
BENNETT, DIED M.	PERRYVILLE	12	M	N
BIRDSTYNE, SHAVIT	JEFFERSON	11	M	N
BLAKE, TIM C.	JEFFERSON	11	M	N
BOSSHART, MICHAEL D.	C. HOLTON WRIGHT	11	M	N
CARLSON, KRISTEN L.	NORTH EAST	12	F	N
CASSELL, CHRISTOPHER C.	C. HOLTON WRIGHT	11	M	N
CAYCE, GAIL E.	FALLSTON	12	F	N
CLEM, DONNA	ARUNDEL	?		N
CRAIG, MARY E.	ARUNDEL	11	F	N
DANIELSON, STEVE G	JOHN CARROLL	11	M	N
DAVIES, DEBORAH L	C. HOLTON WRIGHT	10	F	N
DAVIES, JENNIFER	C. HOLTON WRIGHT	10	F	N
DEAN, JOHN A.	HARFORD CHRISTIAN	11	M	N
FANDLER, DORA E	JOHN CARROLL	11	F	N
FELD, JODY A.	C. HOLTON WRIGHT	12	F	N
FLEMING, LORI E.	C. HOLTON WRIGHT	12	F	N
FRANCESCHI, ALEXANDRA P	HOUSE OF GRACE	12	M	N
GILBERT, MARK E.	DEL AIR	12	M	N
GUILLOT, CHRISTINE C.	C. HOLTON WRIGHT	12	F	N
GRAYSON, DEBORAH E.	NORTH HARFORD	11	F	N
HATFIELD, CRAIG E.	FALLSTON	12	M	N
HAYWOOD, DEBORAH M	ARUNDEL	12	F	N
HOOSFIELD, ANNE L	EDMUNDS	12	F	N
HOPPER, MARY L.	ARUNDEL	12	F	N
HOLT, LORA E.	C. HOLTON WRIGHT	12	F	N
HOLMESWORTH, CHRISTINA M	NORTH HARFORD	12	F	N
HON, SANDY P.	FALLSTON	11	F	Y
JAMES, THOMAS E	ARUNDEL	12	M	N
KARR, STEPHEN	GILMAN	11	M	Y
KILLAM, PAIGE E.	C. HOLTON WRIGHT	12	F	N
KNIGHT, KELLY E.	ARUNDEL	11	F	N
KUYCHET, CHRISTINE M.	JOHN CARROLL	11	F	N
LEE, CHRISTOPHER C.P.	DEL AIR	11	M	Y
LEVIS, STEPHEN M.	FALLSTON	10	M	N
LOPER, JOHN M.	ARUNDEL	12	M	N
LOVELACE, DARRIAN A.	EDMUNDS	12	F	N
LUND, KEVIN M.	ARUNDEL	12	M	N
McFALL, THOMAS M.	JOHN CARROLL	12	M	N
McMASTER, THOMAS M.	FALLSTON	12	M	N
MILLETT, DAVID M.	FALLSTON	11	M	N
MOTHAS, KEVIN W.	JEFFERSON	11	M	N
MUSO, KEVIN J.	JOHN CARROLL	11	M	N
NOBLE, JOANN M.	C. HOLTON WRIGHT	11	F	N
NUNNELLI, SUSAN V	C. HOLTON WRIGHT	12	F	Y
NELSON, TODD M.	EDMUNDS	12	M	N
NOYCE, CHRISTOPHER B.	C. HOLTON WRIGHT	10	M	N
OBERLIES, BRIAN J.	JOHN CARROLL	12	M	N
OLIVER, JEANNE M.	ARUNDEL	10	F	N
OUELLETTE, DANIELLE E.	C. HOLTON WRIGHT	12	F	N
O'BOURKE, CRISTIN M.	DEL AIR	11	F	N
POOLE, SANDY L.	C. HOLTON WRIGHT	11	F	N
POWER, JOHN V.	NORTH HARFORD	11	M	N
PRIBONSKY, LISA A.	C. HOLTON WRIGHT	11	F	N
PRICE, ROBERT D.	C. HOLTON WRIGHT	11	M	N
RADOVICH, MARK T.	DEL AIR	11	M	N
RAJAMEHADA, PADMA	PERRY HALL	12	F	Y
REDICAN, TARA M	EDMUNDS	11	F	N
REHARD, KENNETH D.	EDMUNDS	10	M	N
RIDDICK, DEBBIE E.	LAKE CHARLY	12	F	N
ROBINSON, TODD L.	JEFFERSON	12	M	N
SCANDICCI, MICHAEL J	JEFFERSON	11	M	N
SIMMS, DAWN A	HOMELAND	11	F	N
SISK, JANIS L	C. HOLTON WRIGHT	12	F	N
SMITH, TROYER L.	HOUSE OF GRACE	12	M	N
SPARKS, DIANE M.	C. HOLTON WRIGHT	11	F	N
SPALDING, DOROTHY J.	HOUSE OF GRACE	11	F	N
STEPHENSON, DANIELLE D.	NORTH HARFORD	12	F	N
STORMS, CHRISTOPHER W	JEFFERSON	12	M	N
SWEENEY, CHERYL A.	DEL AIR	11	F	N
THOMASEY, MICHAEL C	DEL AIR	12	M	N
VANDERBECKE, DAVID L.	FALLSTON	10	F	N
VINCENTI, DONNA M.	PERRYVILLE	10	F	N
WILLIAMS, CARLA Y.	JOHN CARROLL	11	F	N
WISCHMANN, OLIVE	NORTH HARFORD	12	M	N
WORRELL, SCOTT P	C. HOLTON WRIGHT	11	M	N
YEH, DAVID A	C. HOLTON WRIGHT	12	F	Y

1988 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

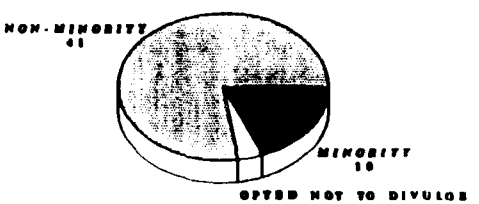


TOTAL 53 STUDENTS

1988 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



1988 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

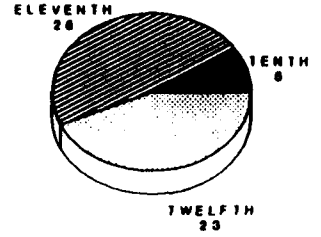


TOTAL 53 STUDENTS

1988 APPRENTICESHIP PROGRAM SUMMARY SHEET

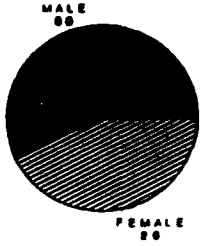
NAME	SCHOOL	GRADE	SEX	MINORITY
ABRAHAM,SINDHUA.	C. MILTON WRIGHT	12	F	Y
BAISDEN,W. TROY	FALLSTON	11	M	N
BATCHELOR,JONATHANS.	FRANKLIN COUNTY HIGH	10	M	N
BIRENZVIGE,SHAVIT	JOPPATOWNE	12	M	N
BLAKE,GREGORYN.	C. MILTON WRIGHT	10	M	N
BOWERS,LESLIEL.	NORTH HARFORD	12	F	N
BREDEHOEFT,MICHAELD.	C. MILTON WRIGHT	12	M	N
COEN,TODDC.	NORTH HARFORD	12	M	N
COLVIN,DARRENA.	ABERDEEN	12	M	N
CRAIG,MARYE.	ABERDEEN	12	F	N
DANIELSON,STEVENG.	JOHN CARROLL	12	M	N/A
DEVIVO,BONNIEL.	C. MILTON WRIGHT	12	F	N
DUNN,ANDREWH.	JOHN CARROLL	12	M	N
EICHENSEHR,PHILLIPA.	EDGEWOOD	12	F	N
FIALA,JOHNC.	BALTIMORE LUTHERAN HIGH	12	M	N
GRAYSON,BONNIES.	NORTH HARFORD	12	F	N
GUIDO,CHARLESC.	LOYOLA HIGH	11	M	N
HEINZ,JONATHONM.	BEL AIR	11	M	N
HONG,JUNE E.	MT. HEBRON HIGH	12	F	Y
HUDLER,HEIDIE.	HAVRE DE GRACE	12	F	N
HUGHEY,JENNIFERL.	PERRYVILLE	12	F	N
KANG,STEVEN	GILMAN	12	M	Y
KIM,MOLLY	C. MILTON WRIGHT	12	F	Y
KUTCHEY,CHRISTINEM.	JOHN CARROLL	12	F	N
LEE,CHRISTOPHERC. P.	BEL AIR	12	M	Y
LEE,MICHELLEC. H.	BEL AIR	12	F	Y
LEONG,SHIRLEY	BEL AIR	12	F	Y
MARTIN,MICHELEL.	FALLSTON	12	F	N
MCAVENEY,TIMOTHY	JOHN CARROLL	12	M	N
MCGANN,WILLIAMT.	C. MILTON WRIGHT	12	M	N
MYERS,STEVEN	JOHN CARROLL	12	M	N
NUNAGALL,ANOOPAV.	C. MILTON WRIGHT	12	F	Y
NOVAK,CHRISTOPHERE.	C. MILTON WRIGHT	12	M	N
POOLE,KAREN L.	C. MILTON WRIGHT	12	F	N
PRYBORSKY,LISAA.	C. MILTON WRIGHT	12	F	N
PRICE,ROBERTO.	C. MILTON WRIGHT	12	M	N
STAR,ANDREWF.	LOYOLA HIGH	12	M	N/A
RADOVICH,MARKT.	BEL AIR	12	M	N
REDICAN,TARAM.	EDGEWOOD	12	F	N
RENARD,KENNETHD.	EDGEWOOD	12	M	N
ROBERTS,VICKIL.	HAVRE DE GRACE	12	F	N
SCAVNICRY,MICHAELJ.	JOPPATOWNE	12	M	N
SCHMIDT,KARLE.	SUSQUEHANNOCK	11	M	N
SCHRIVER,STEVENP.	COEN RAVEN	11	M	N
SHADIS,AARONS.	SUSQUEHANNOCK	11	M	N
SMITH,CLIFFORDB.	C. MILTON WRIGHT	11	M	N
SORRIN,DAVIDL.	CALVERT HALL	11	M	N
STUMP,RONALDV.	BEL AIR	10	M	Y
THOMAS,MARGARETA.	C. MILTON WRIGHT	12	F	N
UNGER,STEVENE.	C. MILTON WRIGHT	12	M	N
VINCENT,DONNAM.	PERRYVILLE	11	F	N
WILLIAMSON,DONNAL.	NORTH HARFORD	11	F	N
WOOD,THOMASO., JR.	PERRYVILLE	11	M	N

1989 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

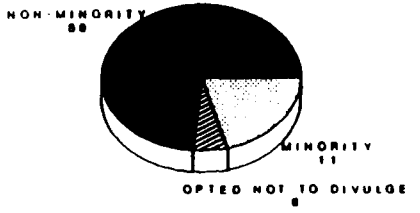


TOTAL 88 STUDENTS

1989 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



1989 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

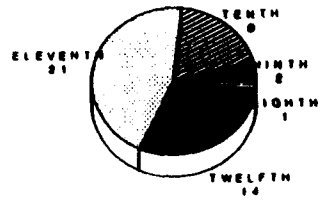


TOTAL 88 STUDENTS

1989 APPRENTICESHIP PROGRAM SUMMARY SHEET

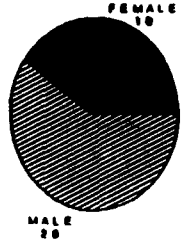
NAME	SCHOOL	GRADE	SEX	MINORITY
ANDERSON,LORRETAR.	FALLSTON	10	F	N
BAISDEN,GILLIAM	FALLSTON	12	M	N
BEISSER,BRYAN	BEL AIR	11	M	N
BOWERS,LESLIE	NORTH HARFORD	11	F	N
BUSCHORN,J. M.	SEVERNA PARK	11	M	N
CALDWELL,KIMBERLY	FALLSTON	11	F	N
CLAYTON,AMY	LOCH RAVEN	11	F	N
CROUSE,HANS	C. MILTON WRIGHT	11	M	N
DEVILBO,BONNIE	C. MILTON WRIGHT	11	F	N
EICHENAUER,PHILLIPA.	EDGEWOOD	11	F	N
FREY,ANNE	BEL AIR	11	F	N
GARAY,THERESA	PERRYVILLE	11	F	N
GERVASONI,GILLIAN	EDGEWOOD	11	F	N
GOAG,AARON	FALLSTON	11	M	N
HEITZ,HEATHER	BEL AIR	11	F	N
HEITZ,JONATHON	BEL AIR	11	M	N/A
HONG,JUNE	MOUNT HEBRON	11	F	N
HUGHEY,JENNIFER	PERRYVILLE	11	F	N
KELLY,DENNIS	CALVERT HALL	11	M	N
KIM,JUDITH	C. MILTON WRIGHT	11	F	N
LANES,PETER	BEL AIR	11	M	N
LEE,KAREN	JOHN CARROLL	11	F	N
LEE,MICHELLE	BEL AIR	11	F	N
LILLY,MARK	JOHN CARROLL	11	M	N
MCGUIRE,WILLIAM	C. MILTON WRIGHT	11	M	N
MEYER,SCOTT	JOHN CARROLL	11	M	N
MILLER,MICHAEL	EDGEWOOD	11	M	N
NAHAVALI,AMOOPA	C. MILTON WRIGHT	11	F	N
SANDTSKY,THOMAS	BEL AIR	11	M	N
SHIRLEY,[illegible]	C. MILTON WRIGHT	11	M	N
SKOOVLICH,CHRISTOPHER	BEL AIR	11	M	N
REED,BRIAN	C. MILTON WRIGHT	11	M	N
RICKETTS,KAREN	EDGEWOOD	10	F	N/A
SCHMIDT,KARL	SUSQUEHANNOCK	12	M	N
SCHRIVER,GORDON	EDGEWOOD	12	M	N
SCHRIVER,STEVEN	LOCH RAVEN	12	M	N
SCOTT,CELEY	HAVRE DE GRACE	12	F	N
SHADIX,AARON	SUSQUEHANNOCK	12	M	N
SHAHASA,ELIZABETH	PIKESVILLE	12	F	N
SMITH,CLIFFORD	C. MILTON WRIGHT	12	M	N
SMITH,SCOTT	ABERDEEN	12	M	N
SORKIN,DAVID	CALVERT HALL	12	M	N/A
STARNES,DAVID	NORTH HARFORD	12	M	N
STENDEBACH,KARL	EDGEWOOD	12	M	N
STUMP,RONALD	BEL AIR	12	M	N
UNGER,STEVEN	C. MILTON WRIGHT	12	M	N
VANDERBOSCHE,MARIE	FALLSTON	12	F	N
VERVIER,DANIELLE	JOHN CARROLL	12	F	N
VINCENTI,DONNA	PERRYVILLE	12	F	N
WALZ,DEREK	JOHN CARROLL	12	M	N
WARDICK,GERARD	BEL AIR	12	M	N
WASYLCZOK,MARY	BOHEMIA MANOR	12	F	N
WILLIAMSON,DONNA	NORTH HARFORD	12	F	N

1990 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

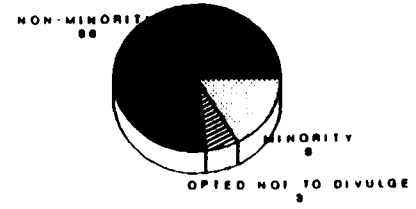


TOTAL 47 STUDENTS

1990 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY SEX



1990 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS

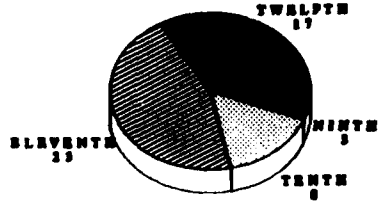


TOTAL 47 STUDENTS

1990 APPRENTICESHIP PROGRAM SUMMARY SHEET

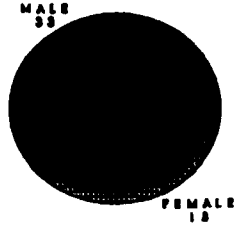
NAME	SCHOOL	GRADE	SEX	MINORITY
ANDERSON,LORRETAR.	FALLSTON	11	F	N
AVIS,KATIE	FALLSTON	12	F	N
BERRY,CHRISTINEA.	JOHN CARROLL	12	F	N
BRALEY,RYANA.	C. MILTON WRIGHT	12	M	N
BROOKS,REBECCALAVOHN	C. MILTON WRIGHT	12	F	N
CAREY,CORNELIUS	EDGEWOOD	11	M	N
COMPTON,ERIKAB.	FALLSTON	11	F	N
COX,JOHNB.	EDGEWOOD	11	M	N
CRAGG,GAYLAD.	PERRYMANSUN	11	F	N
CRAVEN,PATRICIAA.	FALLSTON	12	F	N
CROUSE,LEEL.	C. MILTON WRIGHT	12	M	N
CROUSE,MARSIL.	C. MILTON WRIGHT	12	F	N
DAVIS,GABRIELA.,JR.	C. MILTON WRIGHT	12	M	N
DEMMERLE,KAMURAIJ.	JOPPATOWNE	11	M	N
DITTEO,JOE	NORTHEAST	10	M	N
EICHENSEER,PHILLIPA.	EDGEWOOD	10	F	N
EVANS,JENNIFERM.	BEL AIR	11	F	N
FIALA,DITTIARP.	BALTIMORELUTHERAN	11	F	N
GANTERT,JOHNP.	BEL AIR	11	M	N
GENDASON,ARIB.	PERRYVILLE	10	M	N
GERVASONI,GILLIANG.	EDGEWOOD	10	F	N
GOBLE,ANNAS.	EDGEWOOD	12	F	N
GROSS,MATTHEWR.	BEL AIR	12	M	N/A
HARRIS,JASONL.	EDGEWOOD	12	M	N
HOLLY,MICHELLEE.	HAVREDE GRACE	12	F	N/A
HUSSAIN,AHMED T.	BEL AIR	12	M	N
KARAOUSOS,DEMETRI	BEL AIR	11	M	N
KING,JEFFERY S.	EDGEWOOD	11	M	N
KOTSWAMY,MANICKAM	CENTENNIAL	12	M	N/A
LEE,BENJAMIN Y.	JOHN CARROLL	12	M	Y
LUCY,MARK A.	JOHN CARROLL	11	M	Y
MARCOO,DAVIDP.	BEL AIR	11	M	N
MCGUIRT,KATHLEENM.	BEL AIR	11	F	N
MEYER,CARLP.	FALLSTON	11	M	N
MEYER,CHRISTOPHERS.	JOPPATOWNE	11	M	N
MOTHERSHEAD,MATTHEWC.	FALLSTON	11	M	N
NICKETT,KAREEM	EDGEWOOD	11	M	N
PICCART,DANIELLEM.	NORTH HARFORD	11	F	N
PRINCE,TINAL.	PERRYMANSUN	12	F	N
PUMP,RONALD D.	BEL AIR	11	M	N
THOMAS,JERRY M.,JR.	EASTERNTECH	11	M	N
THORSON,LAURENE.	HAVREDE GRACE	10	F	N
VERVIER,DANIELLEK.	JOHN CARROLL	11	F	N
WALDON,ANGELENEY.	HAVREDE GRACE	10	F	N
WALLS,ROBERT L.,JR.	EDGEWOOD	10	M	N
WARDICK,GERARDT.	BEL AIR	10	M	N
WHITNEY,MICHELLEL.	FALLSTON	11	F	N

1991 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE



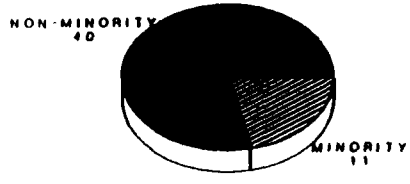
TOTAL 51 STUDENTS

1991 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



TOTAL 51 STUDENTS

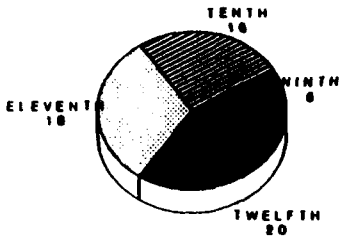
1991 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS



1991 APPRENTICESHIP PROGRAM SUMMARY SHEET

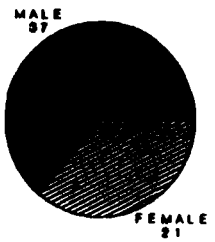
NAME	SCHOOL	GRADE	SEX	MINORITY
ACHERMAN,THOMAS	LOYOLA	11	M	N
BERRY,CHRISTINE	JOHN CARROLL	12	F	N
BETTER,AMY	C. MILTON WRIGHT	10	F	N
BLONDO,CHARLES	FALLSTON	11	M	N
BONOW,JENNIFER	JOPPATOWNE	11	F	N
BRADLEY,CHRISTINE	PERRYVILLE	11	F	N
CAREY,CORNELIOUS	EDGEWOOD	11	M	N
COX,JOHN	EDGEWOOD	11	M	N
CRAGG,GAYLA	RISING SUN	12	F	N
CROUSE,LEE	C. MILTON WRIGHT	12	M	N
DAVIS,HARRY	JOPPATOWNE	12	M	N
DONAHOE,GREGARY	JOHN CARROLL	12	M	N
EDWARDS,JAMES	EDGEWOOD	11	M	N
FITZGERALD,ADAM	EDGEWOOD	11	M	N
GINDLE,DANIEL	JOHN CARROLL	11	M	N
GILLIS,CHRISTIAN	PERRY HALL	12	M	N
GRANT,CHRISTIE	C. MILTON WRIGHT	12	F	N
HONVILLE,ROBERT	EDGEWOOD	12	M	N
CAPOZZO,PETER	PERRY HALL	12	M	N
GANTERT,JOHN	BEL AIR	12	M	N
GARY,CHAD	JOPPATOWNE	12	M	N
HENDRICKSON,ARIL	PIKESVILLE	10	F	N
GLOVER,CRAIG	EDGEWOOD	11	M	N
HARRIS,JASON	EDGEWOOD	11	M	N
HEITZ,HEATHER	BEL AIR	12	F	N
HERNANDEZ,DENNIS	JOHN CARROLL	11	M	N
KAPOLKA,NICOLE	EDGEWOOD	11	F	N
KING,TRACIE	PERRY HALL	10	F	N
KING,JEFFERY	EDGEWOOD	10	M	N
KIRSCHNER,TIMOTHY MANIKAM	CENTENNIAL	9	M	N
KUNSELMAN,MICHAEL	C. MILTON WRIGHT	12	M	N
LANE,TRAVIS	NORTH HARFORD	12	M	N
LIM,GELIN	JOPPATOWNE	12	F	N
LOCKWOOD,JESSICA	PERRY HALL	12	F	N
MEEHAN,BRIAN	JOHN CARROLL	12	M	N
MILLER,JENNIFER	EDGEWOOD	11	F	N
MORHAR,ARELL	BEL AIR	11	M	N
OATES,ELIZABETH	ABERDEEN	12	F	N
OSWALD,JOEL	HAVRE DE GRACE	12	M	N
OTTEGEL,CHARLES	BEL AIR	11	M	N
POORMADALA,ASHA	CENTENNIAL	11	F	N
REAM,CHRISTIE	C. MILTON WRIGHT	10	F	N
SAVAGE,CHRISTINE	C. MILTON WRIGHT	10	F	N
STUART,DANIELLE	NORTH HARFORD	10	F	N
SMITH,DAVID	EDGEWOOD	12	M	N
STATHAM,FITZCHOK	EDGEWOOD	12	M	N
TEVAULT,NEIL	C. MILTON WRIGHT	12	M	N
VERSTER,DANIELLE	JOHN CARROLL	12	F	N
WALDON,ANGELINE	HAVRE DE GRACE	12	F	N
WEST,SCOTT	BEL AIR	12	M	N
WHITNEY,MICHELLE	FALLSTON	12	F	N

1992 APPRENTICESHIP PROGRAM BREAKDOWN BY GRADE

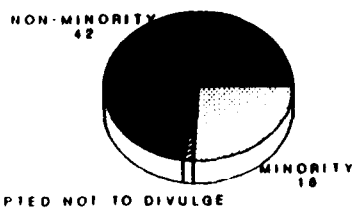


TOTAL 60 STUDENTS

1992 APPRENTICESHIP PROGRAM BREAKDOWN BY SEX



1992 APPRENTICESHIP PROGRAM BREAKDOWN BY MINORITY STATUS



TOTAL 60 STUDENTS

1992 APPRENTICESHIP PROGRAM SUMMARY SHEET

NAME	SCHOOL	GRADE	SEX	MINORITY
APPLING,KAENA	JOPPATOWNE	11	F	Y
BAKER,ALAN		10	M	N
BARRETT,BRANDON	BEL AIR	10	M	N
BAYNE,KARYN	BEL AIR	10	F	N
BUCHER,JOHN		10	M	N
BOND,JOHN	GILMAN	10	M	N
BOYD,TIMOTHY	C. MILTONWRIGHT	12	M	N
BRADLEY,CHRISTINA	PERRYVILLE	12	F	N
BRANNEL,		12	F	N
BRUCH,ROBERT	EDGEWOOD	9	M	N
CARTER,MARC	CALVERT HALL		M	N
CROUSE,LEE C.	C. MILTONWRIGHT	12	M	N
CUTSAIL,BENJAMIN	JOPPATOWNE	12	M	N/A
DAVIS,HARRY	JOPPATOWNE	12	M	N
EDWARDS,JAMES	EDGEWOOD	12	M	N
EVANS,KRISTIE	C. MILTONWRIGHT	12	F	N
EVERETT,DARNELL		12	M	N
FEINMAN,DANIEL	JOHN CARROLL	12	M	N
FABIAN,DIRK	CALVERT HALL	12	M	N
GALECKI,GARRY	PERRYVILLE	12	M	N
GARY,CHAD	JOPPATOWNE	12	M	N
HAMILTON,AMY	EDGEWOOD	12	F	N
HAMMOND,BRIAN		12	M	N
HELM,SCOTT	PERRYVILLE	12	M	N
JARLA,JULIE	C. MILTONWRIGHT	12	F	N
KING,JEFFREY	EDGEWOOD	12	M	N
KELLY,	EDGEWOOD	12	F	N
KOTSIMARLOTHYMANICHAN	EASTERN TAL	12	F	Y
KLOSS,CHRISTOPHER	NORTH HARFORD	12	M	N
LAYTIN,JASON	SUSQUEHANNOCK	12	M	N
LAWS,AMANDA		12	F	N
LOVE,WADE	C. MILTONWRIGHT	10	M	N
LEAF,SAMANTHA	RISING SUN	12	F	N
LIN,DEBORAH	JOPPATOWNE	12	F	N
MARKOWITZ,ALEX	PIKESVILLE	12	M	N
MILLER,JENNIFER	EDGEWOOD	12	F	N
MUNN,WILLIAM	PERRYVILLE	12	M	N
MAGGIE,SUE		12	F	N
OATES,ELIZABETH	ABERDEEN	12	F	N
PHILLIPS,KEITH	JOPPATOWNE	10	M	Y
POLOMAC,ATIM	EDGEWOOD	12	M	N
REINHARDT,CHRISTOPHER	FALLSTON	12	M	N
RICE,TASHA		12	F	N
SANDUCK,NATHAN	C. MILTONWRIGHT	10	M	N
SARVER,EVAN	HAVRE DE GRACE	12	M	N
SALMONES		12	M	N
SAVAGE,CHRISTINE	C. MILTONWRIGHT	10	F	N
SIMS,CHIE		10	M	N
STEWART,DANIELLE	NORTH HARFORD	12	F	N
SOTO,JOHN	PERRY HALL	12	M	N
SPANGLER,CHARLES	EDGEWOOD	12	M	N
STITZ,KATHRYN	BEL AIR	10	F	N
TAYLOR,MICHAEL	JOPPATOWNE	12	M	N
VAN PROOYEN,KRISTINA	EDGEWOOD	10	F	N
WALLACE,KEVIN	PERRYVILLE	11	M	N
WASHINGTON,ROBYN	C. MILTONWRIGHT	12	F	N
WALTERMYER,HEIDI	RED LION	12	F	N
WELL,DENVER	BEL AIR	11	M	N