Page 1

Alabama A&M University President’s Message .......................... 1

Dr. Andrew Hugine, Jr.

Posthumous Dedication ....................................................... 2

Dr. Mostafa Dokhanian

Alliance for Physics Excellence (APEX) ......................... 3

APEX Overview .............................................................. 3

APEX Goals ................................................................. 4

Physics Teacher Institute (PTI) ........................................ 5

Three APEX Components ............................................... 7

APEX Team Members ..................................................... 10

APEX Specialists, Scholars & Observers .......................... 18

ASIM Specialists .......................................................... 19

AMSTI Specialists ........................................................ 24

Scholars & Observers ...................................................... 25

Teachers by Cohort List .................................................. 27

Cohort 1 Biographies ..................................................... 28

Cohort 2 Biographies ..................................................... 33

APEX Partners .............................................................. 49

APEX Links ................................................................. 50
The future university students of Alabama are being prepared for a higher education in physics through the tools and skills gained by secondary education teachers participating in this program. Teacher preparation is critical to ensure that the opportunities for students are not lost in the fields of science and physics due to the lack of proper training in the critical years of high school education. The APEX Program addresses the need for proper teaching tools, pedagogies, and classroom engagement of the students. Further, APEX affords Alabama educators the valuable opportunity to acquire those skills through the workshops tailored to the often difficult to teach subject of physics. Alabama students, high school teachers, and in the future, higher education instructors will feel the positive impact of this forward-thinking approach to physics. It is hoped that APEX will serve as a model for educators in other educational fields as well.
DR. MOSTAFA DOKHANIAN (1957-2014)

Dr. Mostafa Dokhanian, Professor of Physics, in the AAMU Dept. of Physics, Chemistry & Mathematics, spearheaded the penmanship of the APEX program at Alabama A&M University. His tireless dedication was instrumental in bringing about the success of the proposal for the grant and the program’s implementation.

Dr. Dokhanian’s devotion to the program, as the Principal Investigator (PI) for APEX, was paramount to the success of its various activities and workshops. He died on the job after working late on one of the program’s workshops on January 26, 2014. Dr. Dokhanian was PI and Co-PI for various grants, including AAMU-REU, (PS)², and HBCU-UP.

For 22 years, Dr. Dokhanian taught many undergraduate and graduate students and worked on research projects in physics specializing in optics. As an academic advisor, he greatly influenced the education and lives of many undergraduate students, and also as an advisor or co-advisor to twelve M.S. and five Ph.D. students.

Dr. Dokhanian’s dedication to Alabama A&M University, its Physics Department, the many students he taught or helped to fund, his friends, and family led to his being highly valued, respected, and revered by all who knew him.
APEX OVERVIEW

The Alliance for Physics Excellence (APEX) is a Math & Science Partnership (MSP) Targeted project awarded and funded by the National Science Foundation for $8 million over a five-year period. The overall goal of APEX is to transform secondary physics education in Alabama by enabling physics teachers to acquire a deeper knowledge of physics content and employ more effective pedagogical strategies based on physics education research, enabling students to achieve higher gains.

APEX is serving as a comprehensive agent of change by successfully integrating cutting edge teaching practices into all secondary physics programs, directly impacting 25% of the physics teachers (with 41,000 students) throughout all Alabama school systems. APEX is led by Alabama A&M University and includes as core partners the University of Alabama at Tuscaloosa, Drake State Community & Technical College, American Association of Physics Teachers/Physics Teaching Resource Agents and Huntsville City School System. The partnership also includes supporting partners from the eleven Alabama Math Science & Technology Initiative regional in-service centers, Madison County schools, Scottsboro City schools, Madison City schools, and the Alabama State Department of Education.
APEX GOALS

- Increase the quantity of highly qualified pre and in-service physics teachers
- Enhance the quality of Alabama secondary physics education
- Establish an environment in which Alabama high school leadership (superintendents, principals, science coordinators) promotes research-based physics education in Alabama secondary school systems
- Identify and document successful pedagogical models and methods for teacher preparation and for in-service development of physics teachers
- Evaluate the implementation impact of APEX on teachers and students in their classrooms
PHYSICS TEACHER INSTITUTE (PTI)

More high school graduates need a physics background for the 21st Century workplace. However, over the past decade the number of highly-qualified physics teachers has not kept pace with the demand. The PTI is a three-year experience that offers participants a coherent program of study to deepen their physics Discipline Content Knowledge (DCK), Pedagogical Content Knowledge (PCK), and Technological Pedagogical Content Knowledge (TPACK). Each year the Physics Teacher Institute will consist of a two-week summer institute followed by three two-day workshops during the academic year (see table on next page for specifics). These two-day sessions will include:

- Nationally renowned educators on various topics of pedagogy
- Additional DCK and TPACK content
- Feedback and reflection on classroom application of summer workshop materials (research)
<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
<th>Third Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinematics</td>
<td>Fluid Mechanics</td>
<td>Electromagnetism</td>
</tr>
<tr>
<td>Newton’s Laws of Motion</td>
<td>Temperature &amp; Heat</td>
<td>Waves</td>
</tr>
<tr>
<td>Work, Energy, Power</td>
<td>Thermodynamics</td>
<td>Sound</td>
</tr>
<tr>
<td>Impulse &amp; Momentum</td>
<td>Electrostatics</td>
<td>Geometrical Optics</td>
</tr>
<tr>
<td>Circular Motion &amp; Rotation</td>
<td>Conductors &amp; Capacitors</td>
<td>Physical Optics</td>
</tr>
<tr>
<td>Oscillations &amp; Gravitation</td>
<td>Electric circuits</td>
<td>Atomic Physics</td>
</tr>
<tr>
<td>Projectile Motion</td>
<td>Magnetic Fields</td>
<td>Nuclear Physics</td>
</tr>
<tr>
<td>Misconceptions &amp; Ideas</td>
<td>Misconceptions &amp; Ideas</td>
<td>Misconceptions &amp; Ideas</td>
</tr>
<tr>
<td>Effective Teaching Strategies</td>
<td>Metacognition</td>
<td>Assessment Methods</td>
</tr>
<tr>
<td>Learning Environments</td>
<td>Collaborative Learning</td>
<td>Constructivist Epistemology</td>
</tr>
<tr>
<td>Class Management Systems</td>
<td>Social Media</td>
<td>Audio Podcasting</td>
</tr>
<tr>
<td>Blackboard</td>
<td>Groupware</td>
<td>Video Podcasting</td>
</tr>
<tr>
<td>Computer Modeling</td>
<td>Class Presentation Tools</td>
<td>Visualization Tools</td>
</tr>
</tbody>
</table>
THREE COMPONENTS OF APEX

1. Alabama Physics Education Center (APEC) - comprised of two components:
   i. Physics Teacher Institute (PTI) - a multi-year experience offering participants a coherent program of study to deepen their DCK, PCK and increase their TPACK
   ii. Physics Resource Enhancement Program (PREP) - a central clearinghouse for dissemination of best teaching practices

2. Physics Leadership Development (PLD) – aimed at involving teachers in every stage of policy-making affecting the physics curriculum

3. Physics Teaching Research (PTR) - establishes and sustains project outcomes in teaching and learning through development of a research priority, using a community of researchers focusing on physics education by action research
DISCIPLINE CONTENT KNOWLEDGE (DCK)

The primary goal of DCK is to raise awareness that 21st century physics courses must integrate components of exploration (EX), conceptual understanding (CU), and problem solving (PS) within a single unit of study.

- EX will include training in PASCO equipment, safety issues, and development of graphing analysis using computer programs such as Excel and Logger Pro.
- CU will introduce teachers to resources for conceptual questions that can be used through peer instruction methods.
- PS will address the development of reading and communication skills for problem solving.

Teachers will see a variety of approaches (graphical, numerical, analytical, and verbal) that may be used to solve the same problem. The AAPT/PTRA teacher resource guides will act as a model for this effort. When completed, teachers will have a ready set of resources appropriate for their teaching situation.
PEDAGOGICAL CONTENT KNOWLEDGE (PCK)

PCK is defined as a special amalgam of content and pedagogy that is uniquely the providence of teachers. PCK is the teacher’s comprehension of how to help students understand specific subject matter. It includes knowledge of particular subject matter topics, problems, and issues to be organized, represented and adapted to the diverse interests and abilities of learners.

TECHNOLOGY PEDAGOGICAL CONTENT KNOWLEDGE (TPACK)

TPACK builds on PCK and attempts to capture some of the essential qualities of knowledge required by teachers for technology integration in their teaching, while addressing the complex multifaceted and situated nature of teacher knowledge. Teachers shall be exposed to a systematic introduction into the use of technology as it pertains to pedagogics. Topics include presentation tools, simulations, visualization tools, podcasting, Wikis, blogs, groupware, and social media.
### APEX Management Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mohan Aggarwal</td>
<td>11</td>
</tr>
<tr>
<td>Barbara Cady</td>
<td>11</td>
</tr>
<tr>
<td>Vernessa Edwards</td>
<td>11</td>
</tr>
<tr>
<td>Dianne Kirnes</td>
<td>11</td>
</tr>
<tr>
<td>Marius Schamschula</td>
<td>12</td>
</tr>
<tr>
<td>Elizabeth VanderPutten</td>
<td>12</td>
</tr>
<tr>
<td>Matthew Edwards</td>
<td>12</td>
</tr>
</tbody>
</table>

### APEX Partners

- **Alabama Department of Education**
  - Martha A. Allison: 12
  - Tommy Bice: 13
  - Paul Norgaard: 13
  - Steve Ricks (AMSTI): 13
- **American Assoc. of Physics Teachers**
  - Jane Nelson: 13
  - Jim Nelson: 14
- **American Institute for Research**
  - Meredith Ludwig: 14
  - Carlos Rodríguez: 14
- **Facet Innovations**
  - James Minstrell: 14
- **Horizon Research, Inc.**
  - Eric Banilower: 15
  - Patrick Sean Smith: 15
- **Huntsville City Schools**
  - Cathy McNeal: 15
  - Debbie Miser: 15
  - Tommy Cross: 16
  - Brandi Little: 16
  - John Reutter: 16
  - Lesley Shotts: 16
- **J. F. Drake State Community & Technical College**
  - J. W. Harrell: 17
- **University of Alabama at Tuscaloosa**
  - Dennis Sunal: 17
  - Donna Turner: 17
Dr. Mohan Aggarwal
APEX Principal Investigator
Professor, Physics
Chair, Physics, Chemistry & Math Dept.
Alabama A&M University
Contact Information:
Address: P. O. Box 428
Normal, AL 35762
Work: (256) 372-8132
mohan.aggarwal@aamu.edu

EDUCATION:
Ph.D., Saha Institute of Nuclear Physics, Calcutta University
Master of Science in Physics, Roorkee University
Bachelor of Science in Physics, Chemistry & Math, Punjab University

Dr. Barbara Cady
APEX Director of Education
Professor, Special Education,
Alabama A&M University
Contact Information:
Address: P. O. Box 262
Normal, AL 35762
Work: (256) 372-4041
barbara.cady@aamu.edu

EDUCATION:
Ph.D., Speech Pathology & Audiology, University of Kansas
Master of Arts, Speech Pathology & Audiology, University of Alabama
Bachelor of Arts in Speech, Auburn University

Dr. Vernessa Edwards
APEX Co-Principal Investigator
Assistant Professor, Optics
Alabama A&M University
Contact Information:
Address: P. O. Box 1268
Normal, AL 35762
Work: (256) 372-8107
vernessa.edwards@aamu.edu

EDUCATION:
Ph.D., Alabama A&M University
Master of Science in Physics & Laser/Optics, Alabama A&M University
Bachelor of Science in AP Physics, Alabama A&M University

Dianne Kirnes
APEX Program Manager
Program Co-ordinator
Alabama A&M University
Contact Information:
Address: P. O. Box 1268
Normal, AL 35762
Work: (256) 372-8786
dianne.kirnes@aamu.edu

EDUCATION:
Master of Business Administration, Middle Tennessee State University
Bachelors in Management & Marketing, Middle Tennessee State University
Dr. Marius Schamschula
APEX Technology /Co-PI
Assistant Professor, Optics & Physics
Alabama A&M University
Contact Information:
Address:
P. O. Box 1268
Normal, AL 35762
Work: (256) 372-8226
marius.schamschula@aamu.edu

EDUCATION:
Ph.D., University of Alabama in Huntsville
Master of Science in Physics, San Diego State University
Bachelor of Arts in Physics, University of California at Berkeley

Dr. Matthew Edwards
APEX Internal Evaluator
Professor, Physics
Former Dean, School of Arts & Sciences
Alabama A&M University
Contact Information:
Address:
156 River Walk Trail
New Market, AL 35761
Work: (256) 337-0340
matthew.edwards@aamu.edu

EDUCATION:
Ph.D. in Physics, Howard University
Master of Science in Physics, Howard University
Bachelor of Science in Engineering Physics, North Carolina A&T State University

Dr. Elizabeth VanderPutten
Program Director
National Science Foundation
Contact Information:
Address:
Nation Science Foundation
4201 Wilson Blvd
Arlington, VA 22230
Work: (703) 292-5147
evanderp@nsf.gov

EDUCATION:
Ph.D. in Education Policy, The George Washington University
Master of Education, City University of New York
Bachelor of Arts in History, College of New Rochelle

Martha A. Allison
Science Education Administrator
Alabama Department of Education
Contact Information:
Address:
P. O. Box 302101
Montgomery, AL 36130-2101
Work: 334-353-9151
mallison@alsde.edu

EDUCATION:
Masters in Environmental Analysis & Management, Troy State University
Bachelors in Secondary Ed., Biology & History, Troy State University
Dr. Tommy Bice
State Superintendent of Education
Alabama Department of Education
Contact Information:
Address:
P. O. Box 302101
Montgomery, AL 36130-2101
Work: (334) 242-9700
tbice@alsde.edu

EDUCATION:
Ed.D., Auburn University
Masters, University of Alabama at Birmingham
Bachelors, Auburn University

Dr. Paul Norgaard
Secondary Science Specialist, AMSTI
Alabama Department of Education
Contact Information:
Address:
Gordon Persons Building
50 North Ripley Street
Montgomery, AL 36104
Work: (334) 353-9172
pnorgaard@alsde.edu

EDUCATION:
Ph.D. in Chemistry, Auburn University
Bachelor of Science in Chemistry, Western Carolina University

Steve Ricks
AMSTI State Director
Alabama Department of Education
Contact Information:
Address:
Gordon Persons Building
50 North Ripley Street
Montgomery, AL 36104
Work: (334) 353-9151
sricks@alsde.edu

EDUCATION:
Ed.S., Jacksonville State University
Master of Education, University of Montevallo
Bachelor of Science, University of Montevallo

Jane Nelson
AAPT/PTRA Certified Instructor
American Assoc. of Physics Teachers
Contact Information:
Address:
One Physics Ellipse
College Park, MD 20740-3845
Work: (301) 209-3311
nelsonjh@ix.netcom.com

EDUCATION:
Master of Education in Science Education, Memphis State University
Bachelor of Science in Chemistry, Florida State University
James (Jim) Nelson

AAPT/PTRA Certified Instructor
American Association of Physics Teachers
Contact Information:
Address:
One Physics Ellipse
College Park, MD 20740-3845
Work: (301) 209-3311
nelsonjh@ix.netcom.com

EDUCATION:
Master of Science in Physics, Clarkson University
Master of Education in Secondary Education, Temple University
Bachelor of Science in Physics, Lebanon Valley College

Dr. Carlos Rodriguez

APEX External Evaluator
Principal Researcher, Education Program
American Institute for Research
Contact Information:
Address:
1000 Thomas Jefferson Street NW
Washington, D.C. 20007
Work: (202) 403-5343
crodriguez@air.org

EDUCATION:
Ph.D. in Higher Education Administration, University of Arizona
Master of Arts in Bilingual-Bicultural Studies, University of Texas at San Antonio
Bachelor of Arts in English Literature, St. Edwards University

Dr. Meredith Ludwig

APEX External Evaluator
Principal Research Analyst
American Institute for Research
Contact Information:
Address:
1000 Thomas Jefferson Street NW
Washington, D.C. 20007
Work: (202) 403-5246
mludwig@air.org

EDUCATION:
Ed.D. in Educational Analysis, Clark University
Master of Education in Educational Analysis, Clark University
Bachelor of Arts in French, University of North Carolina

James Minstrell

Education Expert
Director of Operations & Co-Founder
Facet Innovations
Contact Information:
Address:
1314 NE 43rd St, Suite 207
Seattle, WA 98105
Work: (206) 634-9225
james@facetinnovations.com

EDUCATION:
Ph.D. in Curriculum & Instruction, University of Washington
Master of Science in Science Education, University of Pennsylvania
Bachelor of Arts in Geographic Information Systems, Univ. of Washington
Eric Banilower

APEX External Evaluator
Senior Researcher & Partner
Horizon Research, Inc
Contact Information:
Address: 326 Cloister Court
Chapel Hill, NC 27514
Work: (919) 489-1725
erb@horizon-research.com

EDUCATION:
Bachelor of Science in Physics, Haverford College
Doctoral coursework in Curriculum & Instruction, University of North Carolina

Dr. Cathy McNeal

Director, Assessment & Accountability
Huntsville City Schools
Contact Information:
Address: 200 White Street
Huntsville, AL 35801
Work: (256) 428-6966
mary.mcneal@hsv.k12.org

EDUCATION:
Ed.D. in Educational Administration Leadership, University of Alabama
Ed.S. in Library Media, University of Alabama
Master of Education in Library Media, Auburn University
Bachelor of Science in Art & Business Ed., Auburn University

Dr. Patrick Sean Smith

APEX External Evaluator
Senior Researcher & Managing Partner
Horizon Research, Inc
Contact Information:
Address: 326 Cloister Court
Chapel Hill, NC 27514
Work: (919) 489-1725
www.horizon-research.com

EDUCATION:
Ph.D. in Curriculum & Instruction, University of NC at Chapel Hill
Masters in Science Education
Bachelor of Science in Chemistry

Debbie Miser

Staff Development Coordinator
Talent Management Director
Huntsville City Schools
Contact Information:
Address: 200 White Street
Huntsville, AL 35801
Work: (256) 428-6973
dmiser@hsv.k12.al.us

EDUCATION:
Master of Education in Elementary Education, Alabama A&M University
Reading Specialist, Alabama A&M University
Tomeka Cross

Career Placement Coordinator
Job Placement Department
J. F. Drake State Community & Technical College
Contact Information:
Address:
3421 Meridian St.
Huntsville, AL 35811-1584
Work: (256) 551-7264
tomeka.cross@drakestate.edu

Dr. John Reutter

Dean, Research & Planning
J. F. Drake Community & Tech. College
Contact Information:
Address:
3421 Meridian St.
Huntsville, AL 35811-1584
Work: (256) 551-3119
john.reutter@drake state.edu

E D U C A T I O N :
Ed.D. in Higher Education Administration, University of Alabama
M.B.A. in Management, University of North Alabama
Master of Science in Computer Science, Rutgers University
Bachelor of Science in AP Math., CA State Polytech. University

Brandy Little

Program Assistant
Title III & Planning
J. F. Drake State Community & Technical College
Contact Information:
Address:
3421 Meridian St.
Huntsville, AL 35811-1584
Work: (256) 551-1703
brandy.little@drakestate.edu

Lesley Shotts

Research & Grants Coordinator
Library & Technology Center
J. F. Drake State Community & Technical College
Contact Information:
Address:
3421 Meridian St.
Huntsville, AL 35811-1584
Work: (256) 551-5206
lesley.shotts@drakestate.edu
Dr. Dennis Sunal

Co-PI UA Action Research  
Professor, Secondary Science Education  
University of Alabama  
Contact Information:  
Address:  
College of Education  
520 Colonial Drive  
Tuscaloosa, AL 35401  
Work: (205) 348-7010  
dwsunal@bama.ua.edu

EDUCATION:  
Ph.D. in Curriculum, Instruction & Science Ed., University of Michigan  
Masters in Interdisciplinary Science, University of Michigan  
Bachelor of Science in Physics, University of Michigan

Dr. James W. Harrell, Jr.

Professor of Physics  
Physics Department  
University of Alabama  
Contact Information:  
Address:  
MINT Center, 134 Bevill  
Tuscaloosa, AL 35487  
Work: (205) 348-3785  
jwharrelljr@gmail.com

EDUCATION:  
Ph.D. in Physics, University of North Carolina  
Master of Science in Physics, University of North Carolina

Dr. Donna Turner

Data Collection Consultant  
Assistant Professor  
University of Alabama  
Contact Information:  
Address:  
College of Education  
520 Colonial Drive  
Tuscaloosa, AL 35401  
Work:  
dpturner@bama.ua.edu

EDUCATION:  
Ph.D. in Curriculum & Instruction/Science Ed., University of Alabama  
Education Specialist in Science, University of Alabama at Birmingham  
Master of Education in Biology, Alabama A&M University  
Bachelor of Science in Biology & Chemistry, Alabama A&M University

END OF APEX TEAM SECTION
### APEX Scholars & AMSTI/ASIM Specialists

#### Alabama Science in Motion Specialists
- Doreen Brisendine .......... 19
- Robin Chestnut .......... 19
- Julie Covin ............... 20
- Charles Hanke .......... 20
- Stan Hart ................. 21
- Elizabeth T. Holsenbeck .... 21
- Tommy Morgan ............ 22
- Bill Ossenfort ........... 22
- Christina Steele .......... 23

#### Alabama Math, Science & Technology Initiative Specialists
- Dan O’Halloran .......... 24
- Jeff Woods ............... 24

#### APEX Pre-Service Scholars & Classroom Observers
- Rocky Elmore ............ 25
- Kwyntero Kelso .......... 25
- Ashley Owens ............ 25
- Khyana Price ............. 25
- Tara Ray .................. 26
- Kaitlyn Marlowe .......... 26
- Marsha Simon ............. 26
- Marilyn Stevens .......... 26
Doreen Brisendine

ASIM Physics Specialist
University of North Alabama

Contact Information:
Address:
301 West Nassau Avenue
Muscle Shoals, AL 35661
Work: (256) 765-6944
Home/Cell: (256) 762-6953
dhbrisendine@una.edu

EDUCATION:
Masters in Education, Secondary Science, University of Alabama in Birmingham
Bachelors in Secondary Education, Athens State University
Bachelors in Animal Science, University of Connecticut

EXPERIENCE:
Sixteen years: Teacher, public education; seven years: ASIM Specialist.

APEX IMPACT OBSERVATIONS:
I now incorporate the four-step method into my workshops when appropriate.

Robin Chestnutt

ASIM Physics Specialist
University of South Alabama

Contact Information:
Address:
Physics Dept., D ILB 115
411 University Blvd. N.
Mobile, AL 36688-0002
Work: (251) 460-6927
Home/Cell: (251) 709-1244
robinc@southalabama.edu

EDUCATION:
Master of Education in Secondary Education General Science, University of South Alabama
Bachelor of Science in Secondary Education General Science, University of South Alabama

EXPERIENCE:
Five years: Teacher, Grand Bay High School; eighteen years: ASIM Specialist.

APEX IMPACT OBSERVATIONS:
Teachers in my district who have attended APEX use many of the activities in their classrooms and express that the activities and teaching strategies have improved their physics teaching and their students’ learning.
Julie Covin

Physics Specialist
University of Alabama

Contact Information:
Address:
10904 Middle Coaling Road
Cottondale, AL 35453
Work: (205) 348-6459
Home/Cell: (205) 531-3230
Jcovin@bamaed.ua.edu

EDUCATION:
Master of Education in Secondary Education, University of West Alabama
Bachelors in Secondary Education, University of Alabama

EXPERIENCE:
Twenty-two years: Teacher.

APEX IMPACT OBSERVATIONS:
I’ve very much enjoyed the strategy of white boarding as a formative assessment tool. The four-step method for analyzing graphical data is also extremely useful in helping students gain a better understanding of the relationship between variables. I love the Diagnoser.com website! I am using it as a formative assessment tool in my teacher trainings.

Charles Hanke

ASIM Physics Specialist
University of Montevallo

Contact Information:
Address:
999 Shades Crest Road
Birmingham, AL 35226
Work: (205) 665-6476
Home/Cell: (205) 901-5833
hankeC@montevallo.edu

EDUCATION:
Master of Education in Secondary Education
Bachelor of Science in Physics, Education, and Computer Information Science

EXPERIENCE:
Twenty years: Physics Teacher; nine years: Physics Specialist ASIM.

APEX IMPACT OBSERVATIONS:
I have seen my teachers implementing APEX training and more confidently implement new and revised lab experiences in their classrooms.
Stan Hart

ASIM Physics Specialist
University of Alabama at Birmingham

Contact Information:
Address: 436 Overlook Drive
Birmingham, AL 35222
Work: (205) 996-6998
Home/Cell: (205) 382-7148
stanhart@uab.edu

EDUCATION:
Masters, University of Alabama at Birmingham
Bachelors, Auburn University
Bachelors, University of Alabama at Birmingham

EXPERIENCE:
2003-present: Science in Motion Physics Specialist, University of Alabama at Birmingham; Teaching since 1993.

Elizabeth Tommi Holsenbeck

ASIM Physics Specialist
Alabama State University

Contact Information:
Address: 5062 County Road 13
Hardaway, AL 36039
Work: (334) 229-4776
Home/Cell: (334) 201-1986
eholsenbeck@alasu.edu

EDUCATION:
Bachelor of Science in Physics, Auburn University
Certification in General Science Secondary Education, University of Alabama

EXPERIENCE:
Nineteen years: Science Teacher, Jeff Davis High School-Physics, Chemistry, Physical Science, Principles of Technology, and Technology.

APEX IMPACT OBSERVATIONS:
I am thrilled with the impact APEX can make on physics in Alabama. Teachers will break out of the "giving the information" mode, allowing students to discover and internalize concepts. Alabama Physics Teachers now have learning cycles, formative assessment, video analysis, graphing for a reason, resources from Science in Motion specialists and more.
Tommy Morgan

ASIM Physics Specialist
Jacksonville State University

Contact Information:
Address: 730 Morgan Road
Gadsden, AL 35904
Work: (256)782-5304
Home/Cell: (256) 239-8626
tmorgan@jsu.edu

EDUCATION:
Master of Science in Education, Jacksonville State University
Bachelor of Science in Chemistry, Auburn University
Associate of Science in Math, Gadsden State Community College

EXPERIENCE:
1994-present: ASIM Physics Field Specialist, Jacksonville State University.

APEX IMPACT OBSERVATIONS:
I have observed that APEX teachers now use more hand on activities to deliver lessons. White boarding and the four-step analysis of graphs are often used. Formative feedback from Diagnoser is VERY popular.

William “Bill” Ossenfort

Physics Specialist
Troy University

Contact Information:
Address: 16659 Forest Hills Lane
Andalusia, AL 36420
Work: (334) 670-5927
Home/Cell: (334) 434-0850
wossenfort@troy.edu

EDUCATION:
Master of Science in Physics, Naval Postgraduate School
Bachelor of Science in Physics, Auburn University

EXPERIENCE:

APEX IMPACT OBSERVATIONS:
I keep getting to recruit teachers and communicate graphical analysis to my region. The modeling and graphical analysis has been a significant leap forward, especially for those teachers who have not had a strong background in physics.
Christina Steele

Physics Specialist
Auburn University

Contact Information:
Address:
1616 Clear Creek Drive
Prattville, AL 36067
Work: (334) 844-6950
Home/Cell: (334) 734-0448
christina.steele@auburn.edu

EDUCATION:
Master of Education in Secondary Science, University of Montevallo
Bachelor of Science in Chemical Engineering, Oregon State University

EXPERIENCE:
Chemical Engineer, International Paper; Science Teacher, Holtville
High School-Physics and Chemistry; Science Teacher, Prattville High
School-AP Physics C, Physics, and Chemistry; Physics Specialist,
Auburn University Science in Motion

APEX IMPACT OBSERVATIONS:
I serve several teachers that are participating in the APEX program. These teachers are very excited about the program. I have seen content growth and an increase in confidence.
EDUCATION:
Masters in Secondary Science Education, University of West AL
Bachelor of Science in Applied Physics, Auburn University
Bachelors in Secondary Education, Auburn University

EXPERIENCE:
Fifteen years: Physics Specialist, Alabama Science in Motion;
three years: High School Physics Teacher; PLD sessions participant,
Huntsville and Birmingham areas.

APEX IMPACT OBSERVATIONS:
APEX has changed my approach to teaching and my perception of the
role of laboratory activities in physics instruction. Due to APEX,
hands-on activities used to build upon and challenge student thinking
have decreased the dependency upon labs to verify concepts taught
in class. Formative assessment of student thinking and
misconceptions are a significant part of instructional planning, so I
document how the physics teachers in my region have changed their
use and frequency of hands-on activities in their classrooms.

AMSTI Physics in Motion Coordinator
University of Alabama at Huntsville

Contact Information:
Address: 7806 Michael Circle
Huntsville, AL 35802
Work: (256) 824-2991
Home/Cell: (256) 361-6146
d0001@uah.edu

Jeff Woods
AMSTI-ASIM Physics Specialist
Athens State University

Contact Information:
Address: 26688 Cedar Break Trail
Madison, AL 35756
Work: (256) 216-6622
Home/Cell: 256) 777-9121
jwoods0001@charter.net

EDUCATION:
Masters, University of North Alabama
Bachelors, Harding University

APEX IMPACT OBSERVATIONS:
The best thing about the APEX program is that it is so practical. It is
not costly, and the ideas and equipment utilized can easily be made
part of any physics class. It follows a logical process of
development of ideas that is easy to understand.
Rocky Elmore

UA Pre-Service Scholar
Senior
University of Alabama
Contact Information:
Address:
College of Education; 520 Colonial Drive
Tuscaloosa, AL 35401

MAJOR:
Physics & Secondary Education

Kwyntero Kelso

AAMU Pre-Service Scholar
Junior
Alabama A&M University
Contact Information:
Address:
Dept. of Physics, Chemistry & Mathematics
P. O. Box 1268
Normal, AL 35762
kkelso@bulldogs.aamu.edu

MAJOR:
Physics

Ashley Owens

AAMU Pre-Service Scholar
Senior
Alabama A&M University
Contact Information:
Address:
Dept. of Physics, Chemistry & Mathematics
P. O. Box 1268
Normal, AL 35762
aowens12@bulldogs.aamu.edu

MAJOR:
Physics & Secondary Education

Khyana Price

AAMU Pre-Service Scholar
Junior
Alabama A&M University
Contact Information:
Address:
Dept. of Physics, Chemistry & Mathematics
P. O. Box 1268
Normal, AL 35762
kprice11@bulldogs.aamu.edu

MAJOR:
Physics & Secondary Education
Tara Ray

UA-Classroom Observer
Ph.D. Graduate Student
University of Alabama
Contact Information:
Address:
Dept. of Curriculum & Instruction
P. O. Box 870232
Tuscaloosa, AL 35487
tray@crimson.ua.edu

MAJOR:
Science Education

Kaitlyn Marlowe

UA Pre-Service Scholar
Ph.D. Graduate Student
University of Alabama
Contact Information:
Address:
Dept. of Curriculum & Instruction
P. O. Box 870232
Tuscaloosa, AL 35487

MAJOR:
Science Education

Marsha Simon

UA Pre-Service Scholar
Ph.D. Graduate Student
University of Alabama
Contact Information:
Address:
Dept. of Curriculum & Instruction
P. O. Box 870232
Tuscaloosa, AL 35487
mmstevens@crimson.ua.edu

MAJOR:
Educational Research

Marilyn Stevens

UA Pre-Service Scholar
Ph.D. Graduate Student
University of Alabama
Contact Information:
Address:
Dept. of Curriculum & Instruction
P. O. Box 870232
Tuscaloosa, AL 35487
mmstevens@crimson.ua.edu

MAJOR:
Science Education
# PTI IN-SERVICE TEACHERS

## Cohort 1
- Christina Marie Caldwell ... 28
- David L Hall ................. 28
- Mara Johnson ................. 29
- Mark Maddox ................. 29
- Angela Michelle McLeod .... 30
- Angela Olguin ............... 30
- Cynthia Phillips ............. 31
- Rochelle Polnitz Williams ... 31
- Timothy Williams ............ 32

## Cohort 2
- Krista Agerton ............... 33
- Timothy Ashley ............... 33
- Meredith Chiaro .............. 34
- Mary Kate Beane .............. 34
- Frances Coleman .............. 35
- Joan Crocker ................. 35
- David Frederick .............. 36
- Lee Grossenbach .............. 36
- Lynne Renee Hammonds ....... 37
- Deborah Harper ............... 37
- Jill Harrison ................. 38
- Gus Hembree .................. 38
- Phillip Herring ............... 39
- Kevin Horton .................. 39
- Timothy E. Horton ............ 40
- Sheri Humphrey ............... 40
- LaTisha Jackson .............. 41
- Brandi Jones ................. 41
- Michael Joreski ............... 42
- Jessica King .................. 42
- Samantha McKissack .......... 43
- Rhonda Miller ................. 43
- Jessica Moore ................. 44
- Rachel Morrison ............... 44
- Amy Martina Norton .......... 45
- Wendy Roberts ................. 45
- Justin Sanders ................. 46
- Brian Sexton .................. 46
- Chere Smith ................... 47
- Jennifer Talbot ............... 47
- Cynthia Thomas ............... 48
- Brian Usry ..................... 48

---

**National Science Foundation MSP Project**

**Alabama A&M University**
Christina Marie Caldwell

Science Teacher
School: Gadsden City High School
District: Gadsden City
Principal: Keith Blackwell
Superintendent: Dr. Ed Miller
Contact Information:
Address: 102 Foxwood Way
Attalla, AL 35954
Work: (256) 543-3614
Home/Cell: (256) 393-0027
ccaldwell@gcs.k12.al.us
ASIM Specialist: Tommy Morgan

EDUCATION:
Master of Education in Secondary Education General Science, Jacksonville State University
Bachelor of Science in Secondary Education General Science, Jacksonville State University

EXPERIENCE:
Ten years: teacher, Gadsen City High School-AP Physics and Physics (four years); four years: Science teacher, Emma Sansom High School-Physics.

APEX IMPACT OBSERVATIONS:
APEX has been the most beneficial workshop I have ever attended. It has given me tools to reduce the time I lecture and increase students’ hands-on activities, all while increasing their physics knowledge.

David L. Hall

Science Teacher
School: Sylacauga High School
District: Sylacauga City Schools
Principal: Jason Bryant
Superintendent: Michael Freeman
Contact Information:
Address: 1016 Sedgefield Drive
Sylacauga, AL 35150
Work: (256) 249-0911
Home/Cell: (256) 872-4810
halld@sylacauga.k12.al.us
ASIM Specialist: Chuck Hanke

EDUCATION:
Master of Education, University of Montevallo
Bachelor of Science in Physical Science & Biology, Troy University
Mara Johnson

Science Teacher
School: Midfield High School
District: Midfield City Schools
Principal: Reggie Ware
Superintendent: Demica Sanders
Contact Information:
Address:
116 2nd Avenue Northeast
Alabaster, AL 35007
Work: (205) 923-2833
Home/Cell: (205) 807-5566
mjohnson@midfield.k12.al.us
ASIM Specialist: Stan Hart

EDUCATION:
Master of Education in Biology Education, Alabama State University
Bachelor of Science in Biology, University of Montevallo

EXPERIENCE:
Fifteen years: Science Teacher (currently: Chemistry, Physics, and Biology).

APEX IMPACT OBSERVATIONS:
Before APEX, I only received professional development and training as a Physics Teacher via Alabama Science In Motion. Since participating in the APEX program, I have learned and experienced so many things that are assisting me in becoming a better teacher, especially in physics. I am so grateful for the opportunity to further explore the world of physics as a teacher through APEX.

Mark Maddox

Science Teacher
School: Sparkman High School
District: Madison County
Principal: Michael Campbell
Superintendent: Dr. David Copeland
Contact Information:
Address:
111 Steele Drive
Madison, AL 35758
Work: (256) 837-0331
Home/Cell: (256) 653-7888
sparkman.physics@gmail.com
ASIM Specialist: Dan O’Halloran

EDUCATION:
Master of Divinity, Southern Baptist Theological Seminary
Bachelors in Secondary Education (Majors: Physics & Math), Auburn University

EXPERIENCE:
Fifteen years: Teacher, public High School; five years: Teacher, college.

APEX IMPACT OBSERVATIONS:
APEX has impacted my classroom by making me more hands-on conscious and giving me a plethora of new ideas for effective physics instruction.
Angela Michelle McLeod

Science Teacher  
School: Pleasant Grove High School  
District: Jefferson County  
Principal: Wayne A. Byram  
Superintendent: Dr. Craig Pouncey  
Contact Information:  
Address: 3527 Jeanne Lane, Hueytown, AL 35023  
Work: (205) 379-5250  
Home/Cell: (205) 441-7354  
amcleod@jefcoed.com  
ASIM Specialist: Stan Hart

EDUCATION:  
Master of Education in Secondary Science Education, University of Alabama at Birmingham  
Bachelor of Science in Biology (Minor: Chemistry), University of Alabama at Birmingham

EXPERIENCE:  

APEX IMPACT OBSERVATIONS:  
My teaching has completely changed. I have a student focused classroom as opposed to a teacher centered classroom. My students love physics class. We are always “doing things.” I believe my students really have a deeper understanding of physics concepts.

Angela Olguin

Science Teacher  
School: Ashford High School  
District: Houston County  
Principal: James Odom  
Superintendent: Tim Pitchford  
Contact Information:  
Address: 410 Burt Drive, Apt. B-B, Dothan, AL 36305  
Work: (334) 899-5411  
Home/Cell: (334) 790-4160  
danner.angela@hcboe.us  
ASIM Specialist: Bill Ossenfort

EDUCATION:  
Masters in Comprehensive Science Education, Troy University  
Bachelors in Comprehensive Science Education, Troy University

EXPERIENCE:  
Five years: Physics Teacher; one year: Participant, ASIM.

APEX IMPACT OBSERVATIONS:  
My teaching has shifted to more inquiry learning and student centered strategies as opposed to teacher lead, teacher centered.
Cynthia Phillips

AP Physics & Pre-Engg Academy Coordinator
School: Demopolis High School
District: Demopolis City
Principal: Dr. Tony Speegle
Superintendent: Dr. Al Griffin
Contact Information:
Address: 65 Qual Ridge Drive
Linden, AL 36748
Work: (334) 289-0294
Home/Cell: (334) 341-0901
cphillips@dcsedu.com
ASIM Specialist: Julie Covin

EDUCATION:
Master of Arts in Science Comp., University of West Alabama
Bachelor of Science in Biology & Environmental Science, University of West Alabama

EXPERIENCE:
Sixteen years: Physics Teacher, Demopolis High School (2007 Teacher of the Year); 2004-2014: Science Dept. Head; Organizer: local Science Fairs; Science Olympiad teams Sponsor, Tuscaloosa, AL.

APEX IMPACT OBSERVATIONS:
The APEX program has completely changed the way I teach - no more lecture and PowerPoint presentations!! We do labs/activities to collect data and draw conclusions, and from this we derive formulas and make predictions. We love it! The kids struggle at first because it is a completely new way of thinking, but they realize that they are learning HOW to think instead of a mass of facts to memorize!
Science Teacher  
School: Baker High School  
District: Mobile County  
Principal: Clem Richardson  
Superintendent: Martha L. Peek  
Contact Information:  
Address:  
5332 Colonial Oaks Drive  
Mobile, AL 36618  
Work: (251) 221-3000  
Home/Cell: (251) 404-7852  
twilliams4@mcpss.com  
ASIM Specialist: Robin Chestnut

EDUCATION:  
Bachelor of Science in Meteorology, University of South Alabama

EXPERIENCE:  
2010-present: Science Teacher, Baker High School (Physics HR); 2006-2010: Vigor High School, Prichard, AL (various sciences, including Physical Science, Physics, Earth/Space Science, Geology, and Meteorology); 2005-2006 Marine weather forecaster, Alert Weather Services, Lafayette, LA.

APEX IMPACT OBSERVATIONS:  
The APEX program has taught me methods of teaching physics that I never realized existed. My students are challenged more and are able to really think about and discuss physics.
Krista Agerton  

Science Teacher  
School: George W. Long High School  
District: Dale County  
Principal: Jason Steed  
Superintendent: Danny Bynum  
Contact Information:  
Address: 864 County Road 2  
Ariton, AL 36311  
Work: (334) 774-2380  
Home/Cell: (334) 369-9033  
kagerton@dalecountyboe.org  
ASIM Specialist: Bill Ossenfort  

EDUCATION:  
Bachelor of Science in Biology, Troy University  

EXPERIENCE:  
Eight years: Teacher.  

APEX IMPACT OBSERVATIONS:  
I have implemented more hands on activities and greatly reduced my lecture time. I allow the students to investigate and discover more on their own.  

Timothy Ashley  

Science Teacher  
School: Stanhope Elmore High School  
District: Elmore County  
Principal: Dr. Samby McGowin  
Superintendent: Dr. Andre Harrison  
Contact Information:  
Address: 5320 McAdams Road  
Millbrook, AL 36054  
Work: (334) 285-4263  
Home/Cell: (251) 593-9572  
timothy.ashley@elmoreco.com  
ASIM Specialist: Christina Steele  

EDUCATION:  
Bachelors, Auburn University  

EXPERIENCE:  
Eleven years: Teacher, Stanhope Elmore High School (currently); Hazel Green High School (one year); John L. LeFlore High School (six years).  

APEX IMPACT OBSERVATIONS:  
APEX has changed my entire teaching philosophy.
Mary Kate Beane

Science Teacher
School: Theodore High School
District: Mobile County
Principal: Ronnie Rowell
Superintendent: Martha L. Peek

Contact Information:
Address:
8260 Pinebough Avenue
Mobile, AL 36695
Work: (251) 221-3351
Home/Cell: (251) 583-8222
mbeane@mcpss.com

ASIM Specialist: Robin Chestnutt

EDUCATION:
Bachelor of Science in Biomedical Science, University of South Alabama

EXPERIENCE:
Seven years: Teacher, Theodore High School (currently: Chemistry CP, Honors Physics CP, and AP Chemistry).

APEX IMPACT OBSERVATIONS:
It has completely changed my method of instruction in physics - lots of PTI activities, white boarding, ranking tasks, and discussions. I have also applied these methods to my other classes and employ white boarding in AP chemistry and physical science.

Meredith Chiaro

Science Teacher
School: Murphy High School
District: Mobile County
Principal: William S. Smith
Superintendent: Martha L. Peek

Contact Information:
Address:
9521 Labrador Run North
Mobile, AL 36695
Work: (251) 221-3186
Home/Cell: (865) 742-5138
mchiaro@mcpss.com

ASIM Specialist: Robin Chestnutt

EDUCATION:
Bachelor of Science in Meteorology, University of South Alabama
Frances Coleman

Science Teacher  
School: Scottsboro High School  
District: Scottsboro City Schools  
Principal: Kathy Hughes  
Superintendent: Dr. Sandra Spivey  
Contact Information:  
Address: 25053 John T. Reid Parkway  
Scottsboro, AL 35769  
Work: (256) 218-2054  
Home/Cell: (256) 244-2722  
fcoleman@scottsboroschools.net  
ASIM Specialist: Dan O’Halloran

EDUCATION:  
Bachelor of Science in Microbiology, University of Alabama

EXPERIENCE:  
Six years: Physics Teacher; Participant: Career Technology Engineering STEM classes (current).

APEX IMPACT OBSERVATIONS:  
APEX has deepened my content understanding and taught me how to deepen my students’ ability to make learning connections.

Joan Crocker

Science Teacher  
School: Wilcox Central High School  
District: Wilcox County  
Principal: Dr. Lenoise Richey  
Superintendent: Dr. Tyrone Yarbrough  
Contact Information:  
Address: 1298 Beach Road  
Camden, AL 36726  
Work: (334) 682-9239  
Home/Cell: (205) 566-2912  
wchcrocker@wilcox.k12.al.us  
ASIM Specialist: Tommi Holsenbeck

EDUCATION:  
Bachelors in Secondary Education, Univ. of AL at Birmingham  
Bachelor of Science in Secondary Education, University of Montevallo

EXPERIENCE:  
Five Years: Physics teacher

APEX IMPACT OBSERVATIONS:  
Because of the APEX program, I have a different understanding of what is important about teaching physics from my previous understanding. I have been challenged to become a better teacher as a result of APEX. Now I understand that students not only need to be able to do calculations and graphs, but also exhibit graphing skills, be able to explain physics results in terms of graphs, communicate laboratory results to fellow students, and recognize they are part of the scientific community. I personally feel more confident that I have a better sense of the direction my physics class needs to take, and appreciate the opportunity the APEX program has provided.
David Frederick

Science Teacher
School: Bob Jones High School
District: Madison City Schools
Principal: Dr. Brian Clayton
Superintendent: Dr. Dee Fowler
Contact Information:
Address:
1272 Cathedral Circle
Madison, AL 35758
Work: (256) 772-2547
Home/Cell: (256) 714-4499
dfrederick@madisoncity.k12.al.us
ASIM Specialist: Dan O’Halloran

EDUCATION:
Master of Science in Geosciences, Mississippi State University
Master of Education, General Science, Alabama A&M University
Bachelor of Science in Human Biology, University of Wisconsin

EXPERIENCE:
Six years: Teacher, High School regular Physics, Pre-AP Physics, Astronomy, and Physical Science; one year: Teacher, Intro to Engineering Design & Aeronautical Engineering.

APEX IMPACT OBSERVATIONS:
In my classroom, I’ve increased the amount of activity based learning that occurs. I’ve also improved in the quantity and quality of the formative assessment that we do.

Lee Grosenbach

Science Teacher
School: Brantley High School
District: Crenshaw County
Principal: Dodd Hawthorne
Superintendent: Terry Holley
Contact Information:
Address:
P. O. Box 452
Brantley, AL 36009
Work: (334) 335-3331
Home/Cell: (251) 213-8378
lee.grosenbach@crenshaw-schools.org
ASIM Specialist: Bill Ossenfort

EDUCATION:
Bachelor of Science in Biology, Troy University

EXPERIENCE:
Five years: Teacher, Secondary Education science.

APEX IMPACT OBSERVATIONS:
APEX flipped the role of teacher as a facilitator of learning, not director. It brought inquiry based learning and hands-on activities back to science classes in my school.
Lynne Renee Hammonds

Science Teacher  
School: Oxford High School  
District: Oxford City Schools  
Principal: Chris Cox  
Superintendent: Dr. Jeff Goodwin  
Contact Information:  
Address: 55 Sneh Street  
Oxford, AL 36203  
Work: (256) 241-3166  
Home/Cell: (256) 276-9944  
lhammond.oh@oxford.k12.al.us  
ASIM Specialist: Tommy Morgan

EDUCATION:  
Masters in Secondary Education General Science, Jacksonville State University  
Bachelor of Science in Physics, University of Cincinnati

EXPERIENCE:  
Currently: Teacher, Oxford High School-AP Physics, Honors Physics & Physics for Physical Science.

APEX IMPACT OBSERVATIONS:  
APEX has impacted my teaching in several ways. First, it has taught me a way to teach and apply the four-step method for analyzing graphs that has greatly enhanced the understanding of data for the student. These understandings have linked over into understanding the science questions on the ACT as well. APEX has also given me teaching resources for making my class more hands-on. The students seem to get more knowledge out of an action-based class. Finally, APEX has broadened my subject or content knowledge, helping me with the topics that I have had a hard time understanding myself.

Deborah Harper

Science Teacher  
School: Amelia L. Johnson High School  
District: Marengo County  
Principal: Lepoleon Peterson  
Superintendent: Luther P. Hallmark  
Contact Information:  
Address: 3725 Circle 55  
Thomasville, AL 36784  
Work: (334) 627-3364  
Home/Cell: (205) 243-9973  
dharper@marengo.k12.al.us  
ASIM Specialist: Julie Covin

EDUCATION:  
Master of Arts in Education in Curriculum & Instruction, University of Alabama in Birmingham  
Bachelor of Science in Biology, University of Alabama

EXPERIENCE:  
Eighteen years: Teacher & Substitute Teacher, Marengo County Schools, Georgia, Tennessee, New Mexico, Texas, Maryland, Alabama (Birmingham City Schools & Hoover City Schools), and Midfield City Schools; Member: ASIM Biology, Chemistry, and Physics, AMSTI (grades 7-8)

APEX IMPACT OBSERVATIONS:  
The greatest impact upon my teaching is that I am much more conscious of the value of questioning in my teaching. The care that is taken in the designing and direction of questions is paramount to conceptual learning.
Jill Harrison

Science Teacher  
School: Wilson High School  
District: Lauderdale County  
Principal: Gary Horton  
Superintendent: Jennifer Gray  
Contact Information:  
Address:  
1812 Palmer Street  
Florence, AL 35630  
Work: (256) 764-8470  
Home/Cell: (256) 810-0198  
Jill.Harrison@LCschools.org  
ASIM Specialist: Doreen Brisendine

EDUCATION:  
Master of Arts Degree in Secondary Education (Comprehensive Science), University of North Alabama  
Bachelor of Science Degree in Comprehensive Science Secondary Education, University of North Alabama

EXPERIENCE:  

APEX IMPACT OBSERVATIONS:  
APEX has given me a different approach to presenting material, developing lessons and evaluating student success.

Gus Hembree

Science Teacher  
School: Pisgah High School  
District: Jackson County  
Principal: Mark Guffey  
Superintendent: Kenneth Harding  
Contact Information:  
Address:  
116 Circle 44  
Section, AL 35771  
Work: (256) 599-2438  
Home/Cell: (256) 599-2438  
hembree@jackson.k12.al.us  
ASIM Specialist: Dan O’Halloran

EDUCATION:  
Masters in Secondary Science Education (Physics/Chemistry), Alabama A&M University  
Bachelor of Science in Earth Science, Auburn University

EXPERIENCE:  

APEX IMPACT OBSERVATIONS:  
I can tell a noticeable difference in my teaching and the impact on my students due to APEX.
Phillip Herring

Science Teacher
School: Fairhope High School
District: Baldwin County
Principal: Jon Cardwell
Superintendent: Robbie Owen
Contact Information:
Address: 11025 County Rd 48
Fairhope, AL 36532
Work: (251) 928-8309
Home/Cell: (251) 767-0910
pherring@bcbe.org

ASIM Specialist: Robin Chestnutt

EDUCATION:
Ph.D. in Educational Research, University of Southern Mississippi
Ed. Specialist in Educational Leadership, Univ. of South Alabama
Master of Education in Science, University of South Alabama
Bachelor of Science in General Science, University of South Alabama

EXPERIENCE:
Nineteen years: Physics Teacher (currently: Physics & AP Physics C/Mechanics).

APEX IMPACT OBSERVATIONS:
The APEX program has allowed me to incorporate a broader range of hands-on activities in my classroom that time constraints do not allow me to develop on my own. As part of the APEX program, I am also provided the opportunity to work with other physics teachers. This is an enormous asset because we are usually isolated and we seldom have an opportunity to discuss physics topics and concepts with other teachers. Overall, the APEX program has had a positive impact on my students and me.

Kevin Horton

Physics Teacher
School: Etowah High School
District: Atalla City
Principal: Jeff Colegrove
Superintendent: David Bowman

Contact Information:
Address: 802 Case Avenue
Attalla, AL 35954
Work: (256) 528-8381
Home/Cell: (256) 328-3654
khorton@attalla.k12.al.us

ASIM Specialist: Tommy Morgan

EDUCATION:
Master of Education in Secondary Science Education, Jacksonville State University
Bachelor of Education in Secondary Science Education, Jacksonville State University

EXPERIENCE:
Thirteen years: Teacher-Chemistry & Physics.

APEX IMPACT OBSERVATIONS:
APEX has brought real science into my classroom. Instead of teaching a lesson, I am simply providing my students with the opportunity to investigate.
Timothy E. Horton

Science Teacher  
School: Reeltown High School  
District: Tallapoosa City  
Principal: Tom Cochran  
Superintendent: Joseph Windle  
Contact Information:  
Address: 409 Riverside Avenue  
Tallassee, AL 36078  
Work: (334) 257-1671  
Home/Cell: (205) 475-6899  
thorton@tallapoosak12.org  
ASIM Specialist: Christina Steele

EDUCATION:  
Masters in Secondary Education, William Carey University  
Bachelor of Science in Fishery Management, Mississippi State University

EXPERIENCE:  
Sixteen years: Teacher.

APEX IMPACT OBSERVATIONS:  
APEX has impacted my classroom, school, and district in a positive manner.

Sheri Humphrey

Science Teacher  
School: Oak Mountain High School  
District: Shelby County  
Principal: Kristi Sayers  
Superintendent: Randy Fuller  
Contact Information:  
Address: 2313 Woodland Circle  
Birmingham, AL 35242  
Work: (205) 682-5200  
Home/Cell: (205) 902-0854  
shumphrey@shelbyed.k12.al.us  
ASIM Specialist: Chuck Hanke

EDUCATION:  
Master of Education in General Science, University of Montevallo  
Bachelor of Science in Pulp Paper Technology, North Carolina State University

EXPERIENCE:  
2000-present: Science Teacher, Oak Mountain High School, Birmingham-General Physics, AP Physics C Mechanics & AP Physics 1;  

APEX IMPACT OBSERVATIONS:  
More labs, more inquiry, more discussion, more basic physics understanding, and more student-centered activities.
LaTisha Sexton Jackson

Science Teacher  
School: Cold Springs High School  
District: Cullman County  
Principal: Tim Burleson  
Superintendent: Dr. Craig Ross  
Contact Information:  
Address:  
31625 Alabama Highway 91  
Hanceville, AL 35077  
Work: (256) 287-1787  
Home/Cell: (256) 620-3047  
tjackson@ccboe.org  
ASIM Specialist: Jeff Woods

EDUCATION:  
Master of Education in Biology, Alabama State University  
Bachelor of Science in Biochemistry, Auburn University  
Bachelor of Science in Medical Technology, Auburn University  
Bachelor of Science in Education, Athens University

EXPERIENCE:  
Six years: Teacher.

APEX IMPACT OBSERVATIONS:  
APEX has allowed me to do more inquiry lab activities than I had done in previous year. My students figure concepts out for themselves and are able to build their own knowledge.

Brandi Jones

Science Teacher  
School: Carver High School  
District: Montgomery Public Schools  
Principal: Gary Hall  
Superintendent: Margaret Allen  
Contact Information:  
Address:  
602 E. Edgemont Avenue  
Montgomery, AL 36111  
Work: (334) 269-3636  
Home/Cell: (334) 202-8970  
brandi.zeigler@mps.k12.al.us  
ASIM Specialist: Tommi Holsenbeck

EDUCATION:  
Master of Education in Biology, Alabama State University  
Bachelor of Science in Chemistry, Miles College

EXPERIENCE:  

APEX IMPACT OBSERVATIONS:  
The laboratory activities are great! My students have an opportunity to observe concepts in action instead of only reading about them or memorizing them. They compare their preconceived notions with real data. The labs allow my students to confront their misconceptions and form a foundation upon which to build even more knowledge.
EDUCATION:
Masters in Math, Troy State University

EXPERIENCE:
Fourteen years: Teacher (eight years: Math & Science); Certification: Math & General Science 6-12.

APEX IMPACT OBSERVATIONS:
APEX has taught me how to allow students to self discover what they are otherwise merely told about. It leads to greater understanding of physics ideas.

Science Teacher
School: Samson High School
District: Geneva County
Principal: DeWayne Hamalton
Superintendent: Becky Birdsong
Contact Information:
Address: 1088 County Road 725
Enterprise, AL 36330
Work: (334) 898-2371
Home/Cell: (334) 477-1148
joreskim@genevacoboe.org
ASIM Specialist: Bill Ossenfort

Jessica Nicole King

Science Teacher
School: Baker High School
District: Mobile County
Principal: Clem Richardson
Superintendent: Martha L. Peek
Contact Information:
Address: 3532 Lyle Court
Semmes, AL 36575
Work: (251) 221-3000
Home/Cell: (251) 366-2336
jking@mcpss.com
ASIM Specialist: Robin Chestnutt

EDUCATION:
Bachelor of Science in Chemistry, University of Southern Mississippi

EXPERIENCE:
Fifteen years: Teacher (Mobile County Public Schools: five years)

APEX IMPACT OBSERVATIONS:
This is an AMAZING program that I would strongly suggest to anyone! I truly believe in their teaching methods, and the work behind the scenes is tremendous. APEX is by far the best professional development that I have ever participated in during my sixteen years of teaching! I only wish they had the same program for Chemistry! During workshops, we are the students! We do the labs and follow the teaching methods as students. I truly recommend this program to anyone teaching physics! I give them an A+ hands down! APEX needs to continue, and I encourage every Physics Teacher to participate!
Samantha Erin-Ann McKissack

Science Teacher
School: Pinson Valley High School
District: Bibb County
Principal: Terry Lawley
Superintendent: Glenn Judd
Contact Information:
Address: 4713 Renwood Drive
Pinson, AL 35126
Work: (205) 379-5100
Home/Cell: (205) 335-9891
smckissack@jefcoed.com
ASIM Specialist: Stan Hart

EDUCATION:
Bachelors in General Science Education, Auburn University

EXPERIENCE:
Four years: Teacher-Physical Science, Biology, Chemistry, Advanced Chemistry, and one class of Physics.

APEX IMPACT OBSERVATIONS:
I taught the physics portion of physical science completely different than previous years because I used the things I learned here.

Rhonda Miller

Science Teacher
School: Hartselle High School
District: Hartselle City
Principal: Jeff Hyche
Superintendent: Dr. Paul Wilson
Contact Information:
Address: 847 Francis Road
Hartselle, AL 35640
Work: (256) 751-5615
Home/Cell: (256) 565-3181
rhonda.miller@hcs.k12.al.us
ASIM Specialist: Jeff Woods

EDUCATION:
Master of Science in both Math & Comprehensive Science, Athens State University
Bachelor of Science in both Math & Comprehensive Science, University of North Alabama

EXPERIENCE:
Twenty-six years: Teacher-AP Physics, AP Statistics, Pre Ap Physics, and Pre AP Pre-Calculus.

APEX IMPACT OBSERVATIONS:
APEX has provided me the tools to change the way in which students learn physics. My classroom has become student-centered, rather than traditionally teacher-centered. Students are actively discovering concepts through labs, commenting on these concepts in class discussions, and, last but not least, participating and presenting in group-centered activities. These APEX foundational concepts have led to tremendous gains in my students understanding of physics.
Jessica Moore

Science Teacher
School: Walker High School
District: District 7, Jasper City Schools
Principal: Gary Boling
Superintendent: Dr. Ann Jackson
Contact Information:
Address: 1601 Highland Avenue
Jasper, AL 35504
Work: (205) 221-9277
Home/Cell: (205) 275-4553
jmoore@jasper.k12.al.us
ASIM Specialist: Doreen Brisendine

EDUCATION:
Master of Arts in Education, Secondary Comprehensive Science, University of Alabama at Birmingham
Bachelor of Science in Zoology, Auburn University

EXPERIENCE:
Five years: Teacher (presently-Walker High School); Sumiton Christian School-6th, 7th, and 8th grade sciences; two years: High School Biology, Chemistry, Zoology, and Environmental Science.

APEX IMPACT OBSERVATIONS:
APEX has not only been a great resource for teaching methods, resources, and colleagues but also a source of encouragement. After participation in physics labs and discussions, I am incorporating more guided inquiry lab investigations in my classroom and challenging my students to sharpen their thinking processes.

Rachel Morrison

Science Teacher
School: Arthur H. Parker High School
District: Montgomery Public Schools
Principal: Darrell Hudson
Superintendent: Dr. Craig Witherspoon
Contact Information:
Address: 5637 9th Avenue South
Birmingham, AL 35212
Work: (205) 231-2370
Home/Cell: (205) 415-0998
racheldmorrison@gmail.com
ASIM Specialist:

EDUCATION:
M.P.A., University of Alabama at Birmingham
Bachelor of Science, University of Montevallo
Amy Martina Norton

Science Teacher  
School: Vestavia Hills High School  
District: Vestavia Hills City  
Principal: Tyler Burgess  
Superintendent: Sheilla Phillips  
Contact Information:  
Address:  
608 Dunmore Circle  
Birmingham, AL 35226  
Work: (205) 335-3582  
Home/Cell: (205) 402-5250  
nortonam@vestavia.k12.al.us  
ASIM Specialist: Chuck Hanke

EDUCATION:  
Master of Art in Physics Education, University of Alabama at Birmingham  
Bachelor of Science in Biology, Louisiana State University

EXPERIENCE:  

APEX IMPACT OBSERVATIONS:  
We are doing more student-centered projects and activities to learn each concept before introducing mathematics to complete our mastery.

Wendy Roberts

Science Teacher  
School: Lincoln High School  
District: Talladega County  
Principal: Andy Keith  
Superintendent: Dr. Suzanne Lacey  
Contact Information:  
Address:  
615 Chaffee Street  
Talladega, AL 35160  
Work: (256) 315-5295  
Home/Cell: (256) 493-1469  
wroberts@tcboe.org  
ASIM Specialist: Chuck Hanke

EDUCATION:  
Bachelor of Science in Chemistry, Jacksonville State University

EXPERIENCE:  
Nine years teaching experience: B.B. Comer High School-three years; Lincoln High School-six years.

APEX IMPACT OBSERVATIONS:  
The biggest impact I saw was in the deeper understanding of concepts my students gained from the APEX process. Combining the activities that Jane and Jim gave us with the elicitation activities and diagnostic quizzes from Jim was highly successful.
Justin Sanders

Science Teacher
School: Huffman High School
District: Birmingham City
Principal: John Lyons
Superintendent: Dr. Spencer Horn
Contact Information:
Address:
4570 Haley Street
Birmingham, AL 35235
Work: (205) 231-5000
Home/Cell: (334) 477-9808
mrsandersclass@gmail.com
ASIM Specialist: Stan Hart

EDUCATION:
Master of Science in Electrical Engineering, University of Michigan at Annarbor
Bachelor of Science in Electrical Engineering, University of Michigan at Annarbor

EXPERIENCE:
Seven years: Teacher (Career/Tech Pre-Engineering-two years, Mathematics-three years, and Science-two years).

APEX IMPACT OBSERVATIONS:
APEX has opened my eyes to inquiry-based teaching. The methods I have learned have been helpful in getting students engaged in the learning process.

Brian Sexton

Science Teacher
School: Hokes Bluff High School
District: Etowah County
Principal: Scott Calhoun
Superintendent: Dr. Alan Cosby
Contact Information:
Address:
1612 Rabbittown Road
Glencoe, AL 35905
Work: (256) 492-1360
Home/Cell: (256) 613-2877
brian_sexton@ecboe.org
ASIM Specialist: Tommy Morgan

EDUCATION:
Master of Science in Secondary Education General Science, Jacksonville State University
Bachelor of Science in General Education, Jacksonville State University
Associate in Science, Gadsden State Community College

EXPERIENCE:
Science Teacher, Grades 9th-12th-Chemistry, Physics, Physical Science, and AP Chemistry.

APEX IMPACT OBSERVATIONS:
APEX is one of the most helpful programs I have participated in ten years of teaching. Teacher education at the university level should be structured more around classroom activities instead of research and philosophy. I would strongly encourage every physics teacher to participate in a program like APEX.
Chere Smith

Chemistry & Physics Teacher
School: Smith's Station High School
District: Lee County
Principal: Joaquin Richards
Superintendent: Dr. Mac McCoy
Contact Information:
Address: 2510 Lee Road 165
Salem, AL 36874
Work: (334) 664-4060
Home/Cell: (256) 309-7756
smith.chere@lee.k12.al.us
ASIM Specialist: Christina Steele & DeWayne Riddle

EDUCATION:
Masters Graduate Student in General Science Education, University of Alabama
Bachelors in General Science Education, Auburn University
Associate of Science, Southern Union State Community College

EXPERIENCE:
Fourteen years: Teacher.

APEX IMPACT OBSERVATIONS:
APEX has provided my students with a variety of instructional strategies, activities, and assessment tools in the classroom. At our school, I am now working to provide students with the opportunity to take Physics yearly in a classroom setting, rather than online only. Our district is working with our school to provide opportunities to other teachers in our county while allowing me to continue the research.

Jennifer Talbot

Science Teacher
School: Brindlee Mountain High School
District: Marshall County
Principal: Bobby Buford
Superintendent: Cindy Wigley
Contact Information:
Address: 268 Stoney Mountain Road
Guntersville, AL 35976
Work: (256) 753-2800
Home/Cell: (256) 361-3747
talbotj@marshallk12.org
ASIM Specialist: Dan O’Halloran

EDUCATION:
Bachelor of Science in Zoology, University of New Hampshire

EXPERIENCE:
Nine years: Teacher, Marshall County; five years: Middle School Teacher-7th & 8th grade science; three years: Participant, IMPACTSEED (improving Physics & Chemistry teaching in Secondary Education).

APEX IMPACT OBSERVATIONS:
The use of the four-step analysis has helped students realize where equations come from. New labs with hands on activities to teach and/or reinforce physics concepts.
Cynthia Thomas

Science Teacher
School: Shades Valley High School
District: Jefferson County
Principal: Mary B. Blankenship
Superintendent: Dr. Craig Pouncey
Contact Information:
Address: 1032 53rd Street South
Birmingham, AL 35222
Work: (205) 379-3300
Home/Cell: (205) 335-5336
cynthiathomas@jefcoed.com
ASIM Specialist: Stan Hart

EDUCATION:
Bachelors in Secondary Education Comprehensive Science, University of Alabama
National Board Certified Teacher AYA Science (Physics concentration)

EXPERIENCE:
Nineteen years: Teacher.

APEX IMPACT OBSERVATIONS:
APEX has really helped provide lab investigation to introduce students to the concepts instead of simply confirming a concept. Four-Step Analysis ROCKS!

Brian Usry

Science Teacher
School: Gadsden High School
District: Etowah County
Principal: Dr. Miria King-Garner
Superintendent: Dr. Alan Cosby
Contact Information:
Address: 80 US Highway 411 South
Gadsden, AL 35901
Work: (256) 547-8828
Home/Cell: (256) 504-8356
brian_usry@ecboe.org
ASIM Specialist: Christina Steele

EDUCATION:
Master of Science in Marine Science, NCST
Bachelor of Science in Geology, University of South Alabama

EXPERIENCE:
Ten years: Teacher.

APEX IMPACT OBSERVATIONS:
My students were not attending class (absences were a problem) prior to implementing APEX activities, now they rarely miss and enjoy physics.
APEX ALLIANCE PARTNERS

Alabama Agricultural & Mechanical University

American Institute of Research (External Evaluator)

Alabama Math, Science & Technology Initiative (AMSTI)

Alabama State Department of Education

American Association of Physics Teachers (AAPT)

J. F. Drake State Community & Technical College

Huntsville City School System

Horizon Research (External Evaluator)

National Science Foundation (NSF)

University of Alabama, Tuscaloosa
ALLIANCE FOR PHYSICS EXCELLENCE (APEX)

APEX LINKS

http://physics.aamu.edu
http://youtube.com/AAMUPhysics
http://apex.aamu.edu