



**2009 ANNUAL REPORT**



Dear Friends,

Please take a moment to meet some of the brightest faces of the next generation. The young people featured in our 2009 Annual Report represent the hundreds of Ingenuity middle and high school students, past and present, who are gaining local, national, and even international recognition for their stellar academic performance, ground breaking research, and contributions to fields such as medicine, law, and environmental sciences.

Since 1993, Ingenuity has trained some of the most gifted young people in Baltimore. A true pathway to success, Ingenuity benefits all our students, regardless of their interests. While some Ingenuity middle and high school graduates continue their studies in mathematics and science, others use the rigorous training they receive as the basis for success in a wide variety of academic and professional areas.

The story of Ingenuity's success can be read on the faces you see here—from the newest students entering middle school or high school, to the graduates who are entering colleges, graduate schools, and professional life. Many, many people deserve thanks for The Ingenuity Project's success: from the dedicated students, teachers, and staff, to the generous individuals and foundations whose support enables the program to thrive and grow.

Sincerely,

Gary Pasternack, M.D., Ph.D.  
*Chair, Board of Directors*

**“Our nation is in an amazing race for discovery and new knowledge to remain competitive and to foster an innovative society. Future scientists like you [Ingenuity students] will create new ideas that will lead to new breakthroughs, new products and new jobs. These innovations will have the power to save lives, create prosperity, protect our homeland and make America safer, stronger and smarter.”**

—SENATOR BARBARA MIKULSKI



**SUCCESS AT EVERY LEVEL** The Ingenuity Project is nationally recognized as a pathway to academic and professional success. The mission is simple: give bright, motivated students the tools they need to succeed at the highest levels in mathematics and science.

Ingenuity is rich with success stories. Here are just a few, which represent the hundreds of Ingenuity participants, past and present, who are defining their own versions of success.

**Teno Boone**, Class of 2009, is a Gates Millennium Scholar. The Bill & Melinda Gates Foundation recognizes outstanding minority students and provides financial support for higher education. Teno is also a freshman Baltimore Scholar who will major in Biomolecular Engineering at The Johns Hopkins University.

**Hannah Bands**, Class of 2009, was one of 60 high school students nationwide to reach the Young Epidemiologist Scholars (YES) Competition Finals. The contest honors students for their ability to address *“important, real-life issues, and to improve the world in which they live.”* Hannah studied immigrant Asian mothers’ depressive symptoms, their children’s

social difficulties, and the roles of English proficiency and social support. Hannah is also a Baltimore Scholar, majoring in Environmental Engineering at The Johns Hopkins University.

**Ariel Bowers**, Class of 2009, was a semi-finalist in the 2008 Siemens Competition in Mathematics, Science & Technology. Ariel earned this recognition for her independent research entitled, “Data Processing of Hubble Space Telescope Images of the Carina Nebula (NGC3372) & Cataloguing Dark Globules NGC 3321”. Ariel is also a Baltimore Scholar attending The Johns Hopkins University where she will continue to study astronomy.

**Ryan Harrison**, Class of 2005, was the first Baltimore City Public School System (BCPSS) student to become a top ten winner in the prestigious Intel Science Talent Search since 1958. Today, Ryan is a Johns Hopkins University Baltimore Scholar majoring in Biomedical Engineering and Economics and is spending a semester in Copenhagen, Denmark. On the heels of Ryan's win, **Meyers (Abe) Davis** placed 7th nationally in the 2006 Intel Science Talent Search, and today is studying computer science at Stanford University and applying for Ph.D. programs. **Emma Call** became Ingenuity's first female Intel winner in 2007, and today is a junior at Case Western University majoring in Biochemistry with a minor in Nutrition. In a summer internship, she worked in an immunology lab, and has decided to continue the lab placement and to conduct her Case Capstone research in the immunology field.

A classmate of Emma's, **Ellen Perkins**, Class of 2007, a junior at Wheaton College, has been awarded \$46,500 as a part of her recent appointment as a U.S. Environmental Protection Agency Greater Research Opportunities Undergraduate Fellow. She is one of 25 undergraduates nationwide to receive this award. Her research will look at the human development of coastal areas and its impact on ecological habitats, combining her environmental and marine biology interests.

Ingenuity sophomore **Elias Weston-Farber** is a member of the Poly Robotics Team. He and fellow team members were the overall winners of the FIRST Robotics Chesapeake Regional Competition. Their robot received the Motorola Quality Award for the best built robot. The team went on to compete at the FIRST Robotics National Competition in Atlanta.

Six Ingenuity students, **Lawrence Wang, Andy Clemens, Carly Wais, Dan Borgia, Saul Wilson, and Rebekah Wheatley**, each scored a perfect 800 on at least one section of their SATs this year.



**“I am happy that I am in the Ingenuity Project. It’s a program that lets you think about things. I love to think now!”** —INGENUITY PROJECT MIDDLE-SCHOOL STUDENT



**THE PATH BEGINS HERE...** The Ingenuity Project in middle school recruits from every elementary school in Baltimore City, offering motivated students, gifted in mathematics and science, the chance to excel academically while they develop important life skills. Ingenuity looks for students who demonstrate a desire to learn, and even beyond learning, to fully understand.

Ingenuity in middle school gives students a model that prepares them for setting and reaching future educational goals, even if they do not continue with Ingenuity in high school. Students develop important organizational skills and work habits, and the confidence to pursue higher education with an instinct for self-guidance.

The philosophy of The Ingenuity Project is to nurture, develop and encourage the Ingenuity student. In keeping with this philosophy, a student who meets the high standards for attendance, behavior, and academic performance are accepted for all three middle school years. Students needing extra help to uphold these standards are supported through the Learning Club (TLC). Parents are engaged to give support at home, while an intensive, after school coaching program offers academic

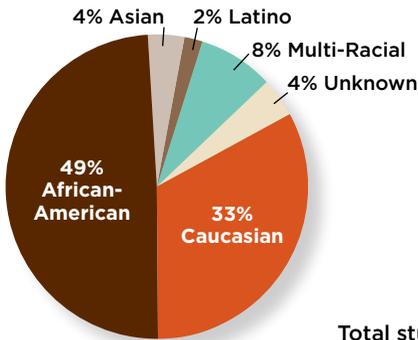
help, fosters good study habits, and provides a quiet place to work.

This year, 500 fifth graders were introduced to Ingenuity through Project BioEYES developed by the Carnegie Institution of Washington. This intensive, weeklong study program gave fifth grade students in ten Title I schools hands-on experience with scientific research, the opportunity to explore, test ideas, and hone their critical thinking skills. Many of the students who participate in the program discover, for the first time, how exciting science can be. Their excitement led many to apply to The Ingenuity Project.

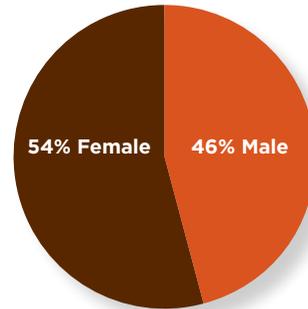
Admission to Ingenuity is based on the completed application, standardized test scores in reading comprehension and in mathematics equaling the national percentile of at least 80%, an academic

## STUDENT DEMOGRAPHICS, GRADES 6-12

### STUDENT DEMOGRAPHICS BY ETHNICITY



### STUDENT DEMOGRAPHICS BY GENDER



Total students: 433

Eligibility for free and reduced lunch: 34%

average of at least 80%, and the results of an admission test administered by the Center for Talented Youth (CTY) at The Johns Hopkins University. To continue in Ingenuity at any level, students must maintain an 80% grade average, have near-perfect school attendance, and treat fellow students respectfully.

Once accepted, rising 6th graders enter the Singapore Math Summer Program. For ten days students are challenged by one of the finest mathematics curricula in the world. Developed by Singapore's Ministry of Education, Singapore Math emphasizes problem solving and prepares pupils

to apply their math skills to novel and complex situations. By the end of the 8th grade, students have completed Pre-Algebra and Algebra.

Middle school students study Earth & Space (Geology, Weather & Astronomy), Biology, and Physical Science (Physics & Chemistry). Science labs in middle school provide valuable hands-on experience. Student field trips facilitate bonding and leadership while offering scientific discovery.

The rigorous academic training of middle school Ingenuity leads to acceptance at the best public and private high schools and provides an excellent foundation for students who apply to The Ingenuity Project at the Baltimore Polytechnic Institute.

Middle School Ingenuity students from Roland Park Elementary made a splash at the East Coast Kinetic Sculpture Race Championship.

▼ American Visionary Arts Museum, May 2008.



## PATHWAY TO COLLEGE AND SUCCESSFUL CAREERS

Baltimore Polytechnic Institute hosts Ingenuity's high school program. Students are encouraged to apply critical thinking to all their studies; small class sizes allow for stimulating exchanges between students and Ingenuity's world-class teachers.

High school students study the traditional branches of science: Biology, Physics, and Chemistry, as well as Advanced Placement electives. At the end of ninth and tenth grades, students who take SAT II examinations in Biology and Physics earn an average score above 600. In eleventh grade, students may choose to take AP Chemistry with the AP Chemistry exam as their goal. They may also take AP Physics, AP Biology and Engineering. Most students enter college with four or more AP credits.

Off-campus research is a cornerstone of the Ingenuity high school science program. The sequential curriculum spanning 10th to 12th grade stands apart from other high school programs in its academic rigor and in the personal growth of the students. Students undertake cutting-edge research performed under the supervision of mentor scientists, learning scientific methodology and critical thinking. They are encouraged to ask questions and develop their own ideas, not simply follow directions. Research projects contribute to a body of knowledge and some students are recognized in scientific papers. Students also compete in the Intel Science Talent Search and the Siemens Competition. Even without winning the top prize, students are better prepared for a good college and a satisfying profession.

Since 2001, Ingenuity students have published eight articles with co-authors in scientific magazines. In 2008, **Danielle Miller**, Class of 2007, co-authored an article published in *Nature*.

### Class of 2009 students earned academic recognition:

- **National Merit Scholar**
- **Carson Scholar**
- **Gates Millennium Scholar**
- **National Honor Society** (11 students)
- **Baltimore Scholars** *Nine Ingenuity seniors received a four-year, full-tuition scholarship at the Johns Hopkins University.*



**Dr. Michael Goldenberg, Ph.D.** is a full-time, Russian-trained Ingenuity mathematics teacher who instructs and nurtures students to aspire to advanced achievement. Many Ingenuity students begin their college mathematics studies with Calculus 3.

## BEYOND INGENUITY

Since Ingenuity's first graduating class in 2001, graduates have taken their place in elite graduate programs and begun professional careers. This year, Ingenuity hosted the first ever Alumni Reunion for High School Ingenuity graduates. We were excited and impressed by the great strides our alumni have made!

### A sample of Ingenuity's first graduates, the Class of 2001

#### N'Dama Bamba

**College:** Morgan State University, B. S.; **Graduate Studies:** Johns Hopkins University School of Public Health; Johns Hopkins School of Medicine, Class of 2011; **Awards:** Outstanding Morgan Woman, President's Second Mile Award; James E. Birnie Award for Excellence in Research; MBRS-RISE Award for Excellence in Biomedical Research; Morgan State University's Honors Regent Scholarship; **Summer Internships:** Tropical Medicine internship in Ghana; Rheumatology research at the Children's Hospital of Philadelphia; and medical training education program at Vanderbilt/Fisk University. At **Johns Hopkins:** Gilliam Family Scholarship.

#### Tavon Brooks

**College:** Cornell University, B.S. Mechanical Engineering, Cum Laude, 2005; **Graduate Studies:** Cornell University, MEng. Mechanical Engineering, 2006; **Fellowships/Grants:** GEM Fellowship, (National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc.); **Dean's List:** Fall 2001-Spring 2004; **Employment:** Raytheon Company, 2006-present, Senior Systems Engineer with Honors: Participant in the Rotational Engineering Leadership Development Program (with assignments in Sydney, Australia, Fullerton, CA; and Boston, MA); **Professional Awards:** Technical Honors Program Honoree, Fall 2009; Individual Achievement Award, Spring 2009; Team Achievement Award, Spring 2008; Team Achievement Award, Fall 2007; Individual Achievement Award, Summer 2007; featured in *Diversity/Careers in IT and Engineering Magazine*, January 2008.



N'Dama Bamba, Ingenuity Class of 2001, and Trang Vu, Ingenuity Class of 2003.

#### Albert Brzezcko

**College:** Johns Hopkins University B.S.; **Graduate Studies:** Georgia Tech, working toward a Ph.D. in Electrical & Computer Engineering, and simultaneously working full time for Georgia Tech Research Institute.

#### Ela-Sita Carpenter

**College:** Hampton University B.S. Summa Cum Laude in 2005 with a degree in the Biological Sciences; **Graduate studies:** Christopher Newport University, 2008, Environmental Science **Thesis:** "The roosting affinities of Rafinesque's big-eared bat in Southeastern Virginia." She is a field assistant in Nevada doing telemetry, and studying use of abandoned mines and Pinyon-juniper woodlands by Townsend's big-eared bat. She presented the preliminary results at the 2005 and 2006 North American Symposium on Bat Research (NASBR), 2007 Christopher Newport University's Paideia, 2007 Virginia Academy of Science Annual Meeting, and the 2007 American Society of Mammalogist's Annual Meeting. Her first publication will come out this fall in the inaugural issue of Christopher Newport University's online journal publication, *The Cupola*.

#### Nikolas Douskas

**College:** University of Maryland Baltimore County (UMBC) studied Computer Engineering (CMPE); **Graduate Studies:** Johns Hopkins pursuing a Masters in Electrical/Computer Engineering, Class of 2010; **Employment:** Booz Allen Hamilton.

## THE INGENUITY PROJECT® AT POLY 2008-2009

Enrollment: 134 students in grades 9-12

Average class size for mathematics and science classes: 21

| SAT Scores       | Class of 2004 | Class of 2005 | Class of 2006 | Class of 2007 | Class of 2008 | Class of 2009 |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Mathematics      | 676           | 694           | 718           | 681           | 698           | 669           |
| Critical Reading | 641           | 644           | 685           | 625           | 654           | 634           |
| Class size       | 21            | 21            | 29            | 27            | 25            | 21            |

**Ingenuity Classes of 2001-2008 total College Scholarship Awards: Over \$17,000,000**

### Class of 2005

National Achievement Scholar: 1

### Class of 2006

National Merit Scholarship, Scholar: 1

National Achievement Scholarship, Finalist: 1

### Class of 2007

National Achievement Scholarship, Finalist: 1

### Class of 2008

National Achievement Scholarship, Finalist: 1

National Merit Scholarship, Semifinalist: 1

MD Distinguished Scholar: 1

### Class of 2009

National Merit Scholarship, Finalist: 1

### Michael Koliofotis

**College:** University of Maryland Baltimore County, Computer Engineering; **Graduate studies:** University of Maryland College Park, working toward Masters in Computer Engineering, with plans to continue to Ph. D.; **Awards:** UMBC's President's Fellow Award and Henry Hall Program's College Scholarship (National Aquarium in Baltimore); **Employment:** Northrop Grumman.

### Michael Mallory

**College:** Johns Hopkins University, Computer Engineering, 2005; **Employment:** System Administrator and Application Developer for Loanstar Financial, Inc.

### Melissa Martinez

**College:** College of Notre Dame of Maryland, Physics, 2004; **Fellowship:** Fulbright Scholar, Philippines, 2004-2005; **Graduate studies:** University of Maryland School of Law J.D., 2008; **Employment:** Law clerk to the Hon. Andre M. Davis of the United States District Court for the District of Maryland; Following her clerkship, she will join Fish & Richardson P.C., a law firm specializing in intellectual property law.

### Dennis J. Spencer

**College:** Morehouse College; **Graduate studies:** Weill Cornell/Rockefeller/Sloan-Kettering Tri-Institutional MD-PhD Program, Class of 2013. MD: Weill Medical College of Cornell University, PhD: The Rockefeller University (Bacterial Pathogenesis and Immunology); **Honors:** UNCF-Merck Graduate Science Research Dissertation Fellowship, Student National Medical Association (SNMA) George Dines Administrative Fellow-Physician Researcher Initiative; After completing MD-PhD from Cornell and Rockefeller Universities, plans to enter a he Residency training program in Otorhinolaryngology (ENT surgery).

### Samantha D. Wallace

**College:** Morgan State University, B.S. Engineering Physics 2005; **Graduate studies:** Norfolk State University, M.S. Optical Engineering, 2007 and currently attending Morgan State University for a Doctorate of Engineering (D.Eng.) in Electrical Engineering; **Employment:** Center for Research and Education of Optics and Lasers (CREOL) at the University of Central Florida (Orlando, FL); Research Assistant for the Ultrafast Photonics Group; Optical Engineer at the Army Research Laboratory (ARL) in Aberdeen Proving Grounds, MD.

### Robert Watkins

**College:** Yale University, Electrical Engineering, 2005; **Graduate studies:** Columbia Law School, 2008; **Employment:** Weil, Gotshal & Manges LLP practicing patent law.

### Tameeka Williams

**College:** University of Maryland College Park, 2005, Graduated Cum Laude with Honors, Howard Hughes Undergraduate Fellowship, majored in Biological Sciences with a concentration in Zoology; **Graduate studies:** Cornell University, DVM/PH.D program, Class of 2015.

### Yi Zheng

**College:** University of Maryland College Park, B.S. in Electrical Engineering, 2005; **Graduate studies:** Johns Hopkins University, Class of 2011, M.S. in Electrical Engineering; **Employment:** Northrop Grumman Electronic System—July 2005 to Present.

### Andrey Zhuk

**College:** University of Maryland College Park, B.S. in Electrical Engineering, 2005; **Graduate studies:** Johns Hopkins University, M.S. in Electrical Engineering, Class of 2010; **Employment:** Raytheon 2005-2006, Booz Allen Hamilton 2006-Present.

**The Ingenuity Project gratefully acknowledges the following contributions received in the 2008-2009 school year.**

**Baltimore City Public School System  
The Abell Foundation**

**Baltimore Community Foundation  
The Black & Decker Corporation  
Jacob & Hilda Blaustein Foundation  
Eddie & Sylvia Brown Foundation  
The Commonwealth of the  
Community Foundation for the  
Capitol Region**

**Group Benefit Services  
Zanvyl & Isabelle Krieger Fund  
Lockhart Vaughan Foundation  
McCormick & Company  
Middendorf Foundation  
Northrup Grumman Foundation  
T. Rowe Price & Associates Foundation  
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Harry & Jeanette Weinberg Foundation  
Wright Family Foundation**

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Jim & Theresa Veatch  
Steven & Christine Weston-Farber  
E. Stephen Wilson  
Ms. Wooden & Mr. Schreibr  
Sergei Zverev



## STATEMENT OF FINANCIAL POSITION, JUNE 30, 2009 AND 2008\*

|                                  | <u>2009</u>             | <u>2008</u>             |
|----------------------------------|-------------------------|-------------------------|
| <b>ASSETS</b>                    |                         |                         |
| Cash                             | \$142,718               | 272,302                 |
| Cash restricted                  | 15,000                  | 0                       |
| Accounts receivable              |                         |                         |
| Grant receivable                 | 73,397                  | 0                       |
| Prepaid expenses                 | 0                       | 935                     |
| Net property and equipment       | 81,607                  | 79,204                  |
| <b>Total Assets</b>              | <b><u>\$312,722</u></b> | <b><u>\$352,441</u></b> |
| <b>LIABILITIES</b>               |                         |                         |
| Deferred Revenue                 | \$25,000                | 50,000                  |
| Accounts payable                 | 11,782                  | —                       |
| <b>Total Current Liabilities</b> | <b><u>\$36,782</u></b>  | <b><u>50,000</u></b>    |
| <b>NET ASSETS</b>                |                         |                         |
| Unrestricted                     | \$275,940               | \$302,441               |
| Temporarily Restricted           | 0                       | 0                       |
| <b>Total Net Assets</b>          | <b><u>\$312,722</u></b> | <b><u>\$352,441</u></b> |

## STATEMENT OF ACTIVITIES, JUNE 30, 2009 AND 2008

|                                         | <u>2009</u>             | <u>2008</u>             |
|-----------------------------------------|-------------------------|-------------------------|
| Revenues and Other Support              |                         |                         |
| Baltimore City Public School System     | \$420,000               | \$420,000               |
| The Abell Foundation                    | 390,000                 | 390,000                 |
| Foundation and Corporate Grants         | 217,500                 | 129,200                 |
| Other revenue                           | 35,281                  | 39,047                  |
| <b>Total revenues and other support</b> | <b><u>1,062,781</u></b> | <b><u>978,247</u></b>   |
| Expenses                                |                         |                         |
| Program services                        | \$867,292               | \$785,134               |
| Management and general                  | 192,727                 | 175,614                 |
| Fundraising                             | 29,263                  | 29,629                  |
| <b>Total expenses</b>                   | <b><u>1,089,282</u></b> | <b><u>990,377</u></b>   |
| Change in Net Assets                    | (26,501)                | (12,130)                |
| Net Assets at Beginning of Year         | \$302,441               | \$314,571               |
| <b>Net Assets at End of Year</b>        | <b><u>\$275,940</u></b> | <b><u>\$302,441</u></b> |

\*Above are selected components from the 2009 audited financial report.

**Total student enrollment: 433**

**Cost per student: \$2,459**

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**THE INGENUITY PROJECT®**  
Baltimore Polytechnic Institute  
1400 West Cold Spring Lane  
Baltimore, MD 21209  
410.662.8665 phone  
410.662.8674 fax  
[www.ingenuityproject.org](http://www.ingenuityproject.org)