INNOVATION

THE INGENUITY PROJECT

2018 - 2019 ANNUAL REPORT

INGENUITY PROJECT | BY THE NUMBERS

14 100% **PERFECT**
SAT Subject Test Scores achieved by the class of 2018.

58% enrolled **from groups underrepresented** in STEM fields.

100 **seats added** to the program between 2017 and 2019.

78% STEM alumni majored in a **STEM** field in college.

550 **hours** spent by our middle school students with their Ingenuity math teachers.

17 **POINTS GAINED ON AVERAGE** by our middle school students on national math assessments.

89% of Class of 2019 **enrolled** into competitive four-year colleges.

24 Baltimore City **zip codes represented** by our student body.

WHAT WE DO

The Ingenuity Project provides a proven comprehensive, accelerated math, science, and research program to Baltimore City students in grades 6–12. Our expert math and science teachers deliver a content-rich, rigorous curriculum that prepares students to compete nationally.

Our Middle School Program provides students with rigorous STEM courses and experiences that prepare and inspire a pursuit of an advanced STEM curriculum in high school.

Our High School Program aligns to the highest standards in math and science to enable students to enroll and succeed in selective colleges and STEM careers.

The program is committed to identifying a cohort of diverse students that reflects the ethnicity, gender, and income of Baltimore City.

OUR MISSION

Is to prepare and launch the next diverse generation of nationally competitive STEM (science, technology, engineering, and mathematics) leaders from Baltimore City Public Schools.

DEAR FRIENDS

As we reflect on the past two school years, we can't help but feel a deep sense of pride in the progress made by The Ingenuity Project. As a program, we challenged ourselves to tackle the goal of increasing the number of high-ability students from underserved communities both enrolled in Ingenuity and accepted into selective colleges.

With challenge comes great opportunity. We're pleased to report that 100% of our first-generation college-bound students in the class of 2018 enrolled in selective colleges and have successfully completed their freshman year.

Achieving this goal began with developing innovative ways to recruit, identify, and support Baltimore's talent, and then expanding the number of students served by Ingenuity. This path has led us to the very exciting news that The Ingenuity Project will launch a new middle school program at James McHenry Elementary/Middle School in West Baltimore beginning this fall.

We have not reached the finish line yet, though. Our expansion remains a top priority as we strive to achieve the following objectives:

- Continue to add program seats at Mount Royal Elementary/Middle School and Baltimore Polytechnic Institute to expand the pipeline of talent prepared for competitive STEM college programs.
- Enroll qualified applicants in our new middle school location, James McHenry Elementary/ Middle School, beginning with 50 sixth-grade students in the 2019–20 school year.
- Launch the new Innovation Practicum pathway, giving high school students opportunities to work with data scientists and applied mathematicians to solve real-world problems.

The Ingenuity Project would not be possible without the dedication of our master teachers. Further, our students could not succeed without our strong partnership with Baltimore City Public Schools and the network of parents, mentors, and tutors who support our students. Finally, we wish to thank you for your steadfast commitment to The Ingenuity Project. Your support makes our program possible.

Sincerely,

Ben Yuhas, Ph.D.
Board President

Lisette S. Morris, M.S.
Executive Director

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A special thanks to Shan Gordon of Positive Image Photography (www.positiveimagephotos.com) for capturing many pictures used with permission in this report.

WHY WE GIVE

Stacey Van Horn

Senior Director at the
T. Rowe Price Foundation
Grantor to The Ingenuity Project

For over three decades, the T. Rowe Price Foundation has been a catalyst for change in communities. With $111 million in direct grants and matching contributions since 1981, the foundation is making an impact in Baltimore and needy communities around the globe.

Why does the T. Rowe Price Foundation support The Ingenuity Project?

We see tremendous value in The Ingenuity Project, which we have supported for more than ten years. Ingenuity's rigorous math and science education and unique program model help set the stage for future success for diverse cohorts of students. And, a high percentage of high school program alumni go on to earn STEM degrees.

Brandon Jones

Ingenuity Project Alumnus,
Poly Class of 2007
Management Consultant with
Boston Consulting Group

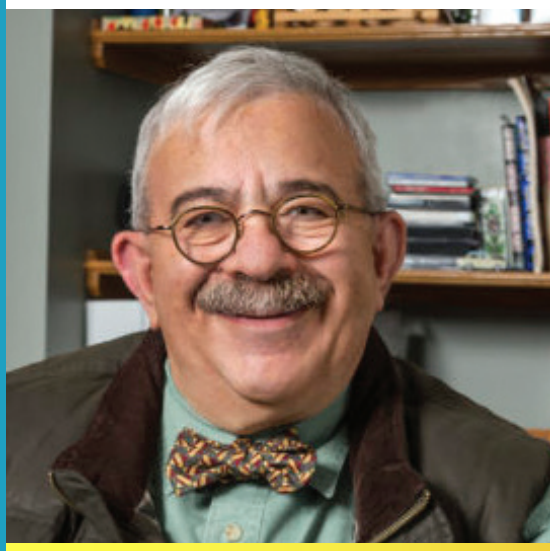
Why do you give back to Ingenuity as an alumnus?

I give back because I believe Ingenuity is truly boosting the outcome of the students and families it serves. From graduating from Duke University with an electrical and computer engineering degree to recently obtaining my MBA from The Wharton School, I know how much I benefited from Ingenuity. I want to be able to afford that same opportunity to the students who come after me.

As an alumnus, donating some of the value that Ingenuity has created for me so far in my life is a way for me to say thank you and to pay it forward. So, thank you, thank you, thank you. From Gale Fletcher who was adamant about enrolling me in seventh grade to Dr. Goldenberg who gave me a more-than-solid math education. I know all Ingenuity faculty and staff are setting other Baltimore City students up for success.

How did Ingenuity make a difference for you?

Ingenuity made a difference for me most directly in college, thus setting a path for success later down the road in life. When I first got to Duke, freshman year was less daunting because of how prepared I felt for academics. Some classmates were amazed at how quickly I grasped concepts in math and science classes. I had a friend outright ask me, "It seems like you don't study that long but are doing really well. How are you picking things up so fast?" I attributed that to the education I got in Ingenuity. From there, it gave me the confidence to compete with any of my classmates, a lot of them even coming from private school backgrounds.



Gary Pasternack, M.D., Ph.D.

Chief Executive Officer of
Asklepion Pharmaceuticals
Ingenuity Board of Directors
since 1995

In 2008, Gary led Asklepion's successful efforts to obtain FDA and EMA approval for Cholbam® (cholic acid) in the U.S. and Kolbam® (cholic acid) in the European Union, based on studies of patients with inborn errors of bile acid metabolism, earning a Rare Pediatric Disease Priority Review Voucher from the FDA. Dr. Pasternack is a board-certified pathologist and an inventor on 29 issued U.S. patents.

Why does The Ingenuity Project matter to you, and why do you give your time and financial support to the program?

Ingenuity offers an environment where students with ability, drive, perseverance, and grit are given the opportunity to thrive. I believe that everyone should have the open opportunity to achieve to the best of their ability. My work with and financial commitment to Ingenuity help in a small way to realize that goal.

GROWING OUR STEM COMMUNITY OF SUPPORT

2018 IDEA SUMMIT

The Idea Summit, The Ingenuity Project's principal fundraising event, was held on April 9, 2018 at the American Visionary Arts Museum. This year's theme, "Solve for (wh)Y," showcased TED-style talks delivered by Ingenuity students and alumni, fostering learning, inspiration, and wonder among 350 guests in attendance.

The event raised close to $40,000.

IN MEMORY

WILL POVELL '16

We lost a treasured member of our Ingenuity community in 2018. The Lighthouse Fund was established in memory of Will Povell to support ongoing student engagement services for Ingenuity students beyond the academic rigors of student life. Will's smile, humor, and warmth will live on as an enduring memory for all who knew him.

STEM PROFESSIONAL NETWORKING EVENTS

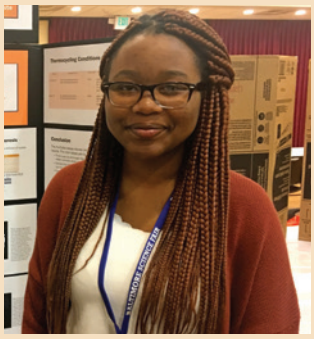
For two consecutive years, Ingenuity has hosted a networking event, the Trailblazers' Tea, to bring high school girls and women in STEM careers together for an afternoon of education, mentoring, and networking. The event was held both years at Brown Advisory, our gracious sponsor and friend. Panelists included professionals in the fields of medicine, neuroscience, chemistry, space engineering, food science, public health, computer science, information technology, and mathematics.

In 2019, Ingenuity also hosted the Innovators' Breakfast, an event that honored Men of Color in STEM. It brought high school boys interested in STEM careers together with some of Baltimore's top executives and leaders in the STEM community for a morning of inspiration and learning. The event panelists included a technology leader, company founder, engineering physicist, software developer, mathematics professor, and nationally recognized inventor.

GIRL POWER IN STEM!

In 2018, Claire Wayner and Rebecca Brody were two of 13 Ingenuity Poly seniors who submitted their independent research to the Regeneron Science Talent Search, the nation's most prestigious high school science competition. In 2019, Michelle Mokaya was one of 15 Ingenuity seniors who submitted research to Regeneron.

All three scholars were selected from more than 1,800 applicants hailing from 555 high schools in 45 states and six overseas high schools. **Since 2005, 13 Ingenuity Poly students were named Intel/Regeneron semifinalists, and three of them were named Intel winners.**



Michelle Mokaya conducted an independent research project on the detection of Schistosoma mansoni DNA from filtered urine samples using a multiplex PCR. She worked under the mentorship of Dr. Alan Scott in the Department of Molecular Microbiology and Immunology at the Johns Hopkins Bloomberg School of Public Health.

❝ I am currently an engineering major at Johns Hopkins University, but I am undecided on which concentration I will specialize in. As of now, I am leaning towards chemical engineering or software engineering. Research practicum had a huge impact on my high school experience because I had the opportunity to really put theory into practice during the duration of my project. Not only did I gain great writing skills and become better at presenting my work to large audiences, but the experience also gave me a glimpse at time management, independence, how to communicate with my peers, and other important skills. The rigor of Ingenuity has helped me create a strong work ethic and laid a great foundation for me to practice self-advocacy as I move forward. I am forever grateful that I was able to be a part of such a wonderful program. ❞

Michelle Mokaya, Ingenuity Poly class of 2019
Johns Hopkins University class of 2023

Claire Wayner investigated how bacterial biofilms impact the movement of E. coli pollution through engineered infiltration systems used for filtering storm water. She conducted her research in the Department of Environmental Health and Engineering at Johns Hopkins University under the mentorship of Dr. Sarah Preheim and graduate students Andrea Fraser and Yue Zhang.

❝ When starting out in the Ingenuity research practicum in 10th grade, I didn't have the clearest idea of what I wanted to research, but I knew that I wanted my work to benefit the environment in some way. With the support of Ingenuity staff, I was able to find the perfect placement at a Johns Hopkins lab researching the water quality of my neighborhood stream, Stony Run. Not only did my research benefit an issue close to home—Baltimore's urban stormwater pollution—but it also opened my eyes to the field of environmental engineering, which I'm now majoring in at Princeton University as a rising sophomore. Without the guidance that the Ingenuity research practicum gave to me by allowing me to engage in the scientific process at a young age, I do not believe that I would've developed the passion I now possess for utilizing engineering to solve our planet's environmental challenges. I'm incredibly grateful that I had this opportunity, and I hope that generations of high school students after me are able to benefit from this amazing program. ❞

Claire Wayner, Ingenuity Poly class of 2018 / Princeton University class of 2022

Above: Lisette Morris, Rebecca Brody, Jacqueline Williams (Poly Principal), Claire Wayner, Lisa Fridman, (Ingenuity Research Coordinator), and Nicholas Proescher (Regeneron Pharmaceuticals).

Rebecca Brody conducted her independent research on the effect of low oxygen on induced pluripotent stem cell-derived endothelial cells. She worked under the mentorship of Dr. Sharon Gerecht and Bria Macklin at the Johns Hopkins University Department of Chemical Bioengineering.

❝ Ingenuity research practicum was a great chance to learn how to work independently. I was able to determine my own schedule based on the tasks I needed to accomplish, and then it was mostly up to me to make sure I stuck to it. This was a nice feeling of freedom compared to the rest of my high school experience and has also been an invaluable skill in college. Research practicum also provided me with connections to graduate students and other professionals in the field I was interested in. My graduate supervisor was happy to answer all of my questions about college and graduate school, from whether I should bring my own fridge to what classes I should take to prepare for an advanced degree. This gave me a better perspective on education and a career in science before I even entered college. One aspect of Ingenuity that has helped me today has been the development of my scientific writing skills. I was able to work on this type of writing in both research practicum and my science classes. I learned how to write clear and concise reports, which has been incredibly helpful in all my classes in college. ❞

Rebecca Brody, Ingenuity Poly class of 2018 / Williams College class of 2022

THE POWER OF PLAY & COMPETITION

On Saturday, December 1, 2018, Ingenuity hosted Mathopoly, a citywide math challenge for fifth-grade students from Gardenville, Govans, Hamilton, Mount Royal, Northwood, Northwood Appold, and Yorkwood. Teams of students trained for six weeks and then competed against each other in math games and trivia contests. The event provided an excellent opportunity to engage with parents and to develop more meaningful relationships with teachers and school leaders who participated as well. As a result of the Mathopoly program over the past two years, Ingenuity has seen an increase in applications of more than 50% from participating schools.

Pictured: This floor game was conceived by Ingenuity math teachers and designed by a volunteer team from Harbor Designs and Manufacturing. The boardgame "Mathopoly©" was created by Will Penner, a middle school math teacher in Canada. (https://mathopoly.ca)

INGENUITY STUDENTS IN THE NEWS!

Timothy Honablu, Michelle Mokaya, and Ingenuity math teacher Dr. Goldenberg were featured in Dan Rodricks' Baltimore Sun column on Sunday, March 3, 2019. Mr. Rodricks had the pleasure of spending time with Michelle, Timothy, and Dr. Goldenberg at Poly in February as they shared their recent accolades in math and science. Timothy worked extremely hard in the fall of his senior year to submit quality applications to several selective colleges and was rewarded with acceptance to Carnegie Mellon University; Cornell University; Johns Hopkins University; Massachusetts Institute of Technology (MIT); North Carolina A&T State University; University of Maryland, College Park; University of Maryland, Baltimore County (UMBC) Meyerhoff Scholars Program; and Yale University. Timothy shared with Mr. Rodricks that he dreams of studying both theoretical and modern physics and finding ways in the future to bring these two disciplines together to solve problems. Michelle shared her research accomplishments and dreams of continuing her studies in chemical engineering at Johns Hopkins University.

MARYLAND eNEWSPAPER UPDATE SUNDAY, MARCH 3, 2019 | NEWS | THE BALTIMORE SUN 3

Despite our troubles, there is hope ahead

We could be better. We could get outside ourselves — outside the habits and prejudices that make us complacent, stubborn, even tribal — and remember that today is about tomorrow and the lives of our children, grandchildren and generations we will never know.

We could lead the world in arresting climate change and transforming economies. We could muster the will to fix what's broken (and there's so much that's broken, from water mains to the immigration system). We could develop more cures for disease and more ways for people to afford them. We could expand health care for all and higher education for anyone who wants it (though not without raising taxes and avoiding more debt).

We could push harder to harness sun and wind to fuel homes and electric cars, trucks, ships and guitars. We could build more passenger rail and bike paths. We could find ways to cut the rate of gun violence in half in a decade. We could mount an all-out campaign against drug addiction, turning prisons into hospitals.

We could find more sustainable ways of producing food. We could repopulate abandoned neighborhoods in old cities and spare the countryside more sprawl. We could do all this and spread prosperity to more families, from middle class to poor, from cities to suburbs to rural towns.

It sounds like too much. But that's the thing: We have to do all of it. While on the surface conditions look fine — the unemployment rate is low, our choices in home entertainment and pickup trucks abundant — we have allowed too many problems to accumulate and fester. It frustrates us. It made some Americans so angry they voted for president a con man who promised to fix everything.

At moments of outrage and despair, we hear politicians and activists say, "We are so much better than this!"

Rep. Elijah Cummings has said it several times, most recently at the close of Michael Cohen's testimony Wednesday about his sordid undertakings for Donald J. Trump. "We are better than this," Cummings said, referring to the pile of depravity Cohen presented. "We really are. As a country, we are so much better than this."

I understand what the Baltimore congressman means. His words are aspirational. He knows we are not "better than this" right now. We are what we are — a nation with 40,000 gun deaths a year, more than 70,000 drug overdose deaths a year, a declining life expectancy, income inequality at Great Depression levels, infrastructure failing and threatened by extreme weather, climate conditions worsening faster than scientists originally thought.

But Cummings is right: We have the power to be better, and I say that under the influence of a recent visit to a public high school in Baltimore.

A brush with bright youth can make anyone optimistic, even here, in Our City of Perpetual Recovery. But it's not just optimism I took away from Baltimore Polytechnic Institute. It's a sense of obligation. Hearing about the impressive accomplishments and beautiful ambitions of two seniors, Timothy Honablew and Michelle Mokaya, got me there.

Timothy and Michelle have been working hard in The Ingenuity Project, an advanced curriculum for a few hundred students, in middle school as well as high school, who excel in mathematics and science. The project got underway at Poly in 1997, and it has sent some of the city's brightest to great universities.

Timothy has been accepted at MIT. He wants to be a quantum physicist. Here's how he described his dreams in a college application: "I want to help all of humanity by revolutionizing physics by combining quantum mechanics and classical physics into one proven theory, hopefully leading to greater developments in technology."

Michelle, winner of a major scholarship for high school seniors, completed a research paper on a parasitic disease. She hopes for acceptance to Brown and has a specific career interest: "I want to focus on drug therapy and the different ways we can insert drugs into bodies. I want to better understand that whole system, and what devices we can use to better distribute drugs."

We owe it to Timothy, Michelle and their peers — that is, every kid in this country — to make sure they get a chance to make a difference in this world. I don't know what's more important than leaving those coming after us a livable, sustainable and progressive society in a nation that rewards hard work and ambition, that celebrates our generosity as much as our prosperity, our brains as much as our brawn. We could be so much better.

drodricks@baltsun.com
twitter.com/DanRodricks

Dan Rodricks

Poly seniors Michelle Mokaya and Timothy Honablew with teacher Mikhail Goldenberg.

ROUGHLY SPEAKING — DAN RODRICKS

■ **Featured on this week's podcasts:** Gazze, a popular Baltimore party band, enters its 47th year with its first-ever album of original music. Have a listen on the latest episode.

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EXPANDING BALTIMORE'S STEM TALENT PIPELINE

Below: James McHenry 8th grade students who participated in the process to select a new Ingenuity middle school.

MOUNT ROYAL EXPANSION

In 2017-18, Ingenuity began accepting two sixth-grade classes at Mt. Royal Elementary/Middle School, whereas in previous years we only accepted one. Our vision was to consistently enroll two classes each year and grow the program to make it similar in size and structure to the program at Roland Park Elementary/Middle School. In 2017, Ingenuity supported 87 students at Mount Royal. By 2019–20, the program will serve close to 150 students.

EXPANSION AT BALTIMORE POLYTECHNIC INSTITUTE (POLY)

Ingenuity's high school program at Poly has successfully admitted approximately 90 students in ninth grade three years in a row, far exceeding the previous enrollment average of 60 students. This was the first major expansion at the high school level in over ten years and was the result of a significant increase in applications from students across the city. These three cohorts represent top talent from more zip codes and middle schools than ever before. The diversity of the cohorts has sparked exciting innovation and collaboration among a group of incredible student leaders.

"James McHenry presented a very compelling application, and the site visit made it clear that it was an ideal school to add to the Ingenuity family. We look forward to working with the school's talented teachers, leaders, students, and community in the coming years."

Lisette Morris, Ingenuity Project executive director.

RECRUITING UNTAPPED TALENT:

James McHenry Elementary/Middle School

In 2017, Ingenuity recognized that only 19% of enrolled students came from South Baltimore, and only 7% came from Southwest Baltimore. Access to accelerated and gifted programs in the region was limited. Baltimore City Public Schools, in partnership with The Ingenuity Project, conducted a six-month process to identify a new school site. James McHenry Elementary/Middle School was one of 15 schools to apply for consideration. A committee of education professionals and community members reviewed applications submitted by interested schools. The district and Ingenuity staff then examined the capacity for school buildings to accommodate additional students in the program, the conditions in the community served by the school, and the content of the applications themselves. Site visits were made to the schools that were considered the top applicants.

"We are excited about the opportunity this provides for students in a part of the city where access to rigorous STEM programming has been limited," said Sean Conley, former chief academic officer for City Schools. "James McHenry has been making great strides as part of a group of schools working in an innovative partnership to improve outcomes for their students. With the placement of Ingenuity at the school, Baltimore's South side will have 60 additional seats where middle school students can experience challenging, enriching programming that will put them on the path to success."

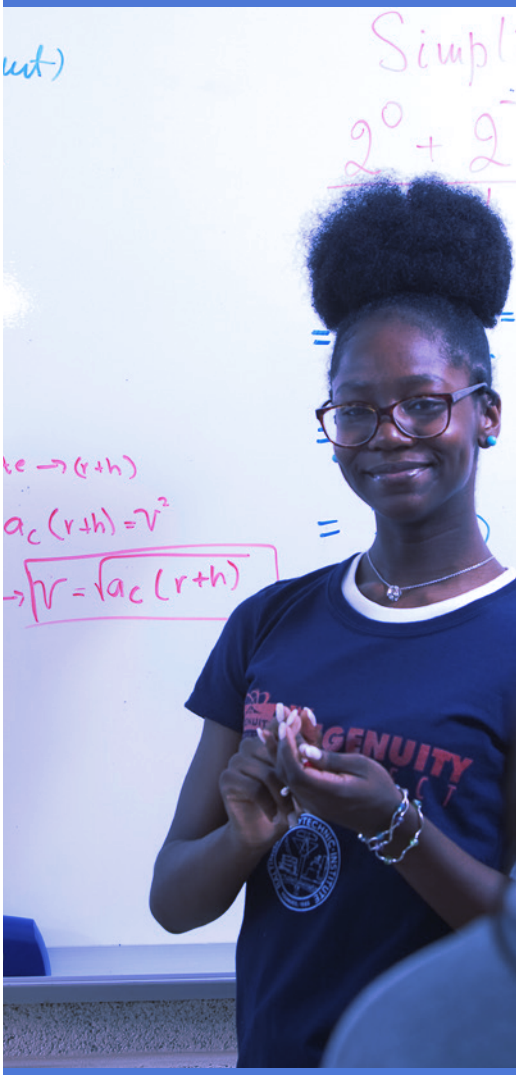
EXPANDING RECRUITING GROWING

STATEMENT OF FINANCIAL POSITION

June 30, 2018 and 2019	2019	2018
ASSETS		
Cash and cash equivalents	$530,702	$430,426
Grants receivable	$70,000	$320,000
Prepaid expenses	$ -	$9,208
Net property and equipment	$35,478	$26,399
Grants receivable, long-term	$15,000	$30,000
Total Current Assets	**$651,180**	**$816,033**
LIABILITIES AND EQUITY		
Deferred revenue	-	-
Accounts payable	$4,491	$10,340
Accrued salaries	$17,068	$20,657
Total Current Liabilities	**$21,559**	**$30,997**
NET ASSETS		
Unrestricted	$69,621	$315,036
Temporarily restricted	$560,000	$470,000
Total net assets	$629,621	$785,036
Total Liabilities and Net Assets	**$651,180**	**$816,033**

STATEMENT OF ACTIVITIES

June 30, 2018 and 2019	2019	2018
Revenues and Other Support		
Baltimore City Public School System	$383,000	$330,400
The Abell Foundation	$375,000	$400,000
Foundation and corporate grants	$210,000	$735,500
Other revenue	$265,039	$230,852
Total Revenues and Other Support	**$1,233,039**	**$1,696,752**
Expenses		
Program services	$1,074,309	$1,109,612
Management and general	$166,858	$148,646
Fundraising	$147,287	$76,187
Total Expenses	**$1,388,454**	**$1,334,445**
Loss on Disposition of Property	-	-
Change in Net Assets	**$(155,415)**	**$362,307**
Net Assets at Beginning of Year	$785,036	$422,729
Net Assets at End of Year	**$629,621**	**$785,036**



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INNOVATION

2018-2019 ANNUAL REPORT

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