

# bdpatoday

Special Report: CES 2014 and Disruptive Technologies January 2014 | Volume 39.01

## education, training & tech policy

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Education, Training, and Policy  
#TechandPolicy

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### \$100 Million Available to Fund Programs for Upgrading Youth Skills

**Washington**—The Employment and Training Administration (ETA), U.S. Department of Labor (DOL), announced last quarter the availability of approximately \$100 million in grant funds, authorized under Section 414(c) of the *American Competitiveness and Workforce Improvement Act* of 1998 (ACWIA), as amended (codified at 29 U.S.C. 2916a), for its Youth Career Connect (YCC) grant program.

The program is designed to provide high school students with education and training that combines rigorous academic and technical curricula focused on specific in-demand occupations and industries for which employers are using H-1B visas to hire foreign workers as well as the related activities necessary to support such training to increase participants' employability in H-1B in-demand industries and occupations.



### Human-Centered Computing (HCC)

reality-series documentary

**Clemson, SC**—Clemson University's HCC PhD program, chaired by Dr. Juan Gilbert (standing, above), has the largest number of African-American computing sciences PhD students in the nation. They build innovative solutions to real world problems by integrating people, technology, policy, and culture in various contexts. Dr. Gilbert, a BDPA Member, leads a

See YCC on page 9

See Lab Daze on page 9



# New Challenges Call for New Leaders



Opportunity, leadership and responsibility... Women in America's Navy are amongst those paving the way in redefining femininity in the 21st Century. To learn more about opportunities that are awaiting you please go to [navy.com](http://navy.com)

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< John - Software Developer

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**INFORMATION TECHNOLOGY  
SENIOR MANAGEMENT FORUM**Fostering the career growth  
of African-American executives

In February, 2014, ITSMF will hold its first quarter Symposium in conjunction with the 10th Annual IT Executive Achievement Awards Ceremony. This continued focus on “Leaders Transforming Leaders” will delve into the many aspects of innovation and the role of IT leadership in driving value through the application of technology for business innovation.

ITSMF also will honor and celebrate key industry executives for their strong leadership, deep commitment to developing others and outstanding professional accomplishments.

ITSMF would like to extend our sincerest thanks and heartfelt gratitude to our Corporate Sponsors. They have embraced ITSMF’s mission and vision and extended themselves, beyond measure, to make these events possible. It is the commitment of these companies, and others like them, that allows ITSMF to continue the work of “filling the pipeline” with executive talent. It is our hope that this partnership will continue to grow and strengthen for many years to come.



BDPA, formerly known as *Black Data Processing Associates*, was founded in 1975 to promote professional growth and technical development to those in or entering information and communications technology (ICT) career fields and related industries. Now in its 39<sup>th</sup> year (*Volume 39*) National BDPA (NBDPA) Chapters publish quarterly or monthly newsletters. For newsletter or web portal advertising rates, publication schedules, online calendars, and e-newsletters, contact regional or local BDPA Chapters by visiting [www.bdpa.org](http://www.bdpa.org) or by calling **301.584.3135**. *bdpatoday* (ISSN 1946-1429) is published by participating Local Chapters of NBDPA with their respective chapter Communications Committees, mailed to BDPA members, BDPA corporate sponsors and electronically delivered to BDPA Chapters and Chapter Interest Groups (CIGs) as a benefit of membership. First Class and Periodicals postage paid at Washington, D.C. and additional regional mailing offices. Unless otherwise noted by own copyright, art and graphics ©National BDPA, ©BDPA-DC, ©Corbis, ©Getty Images, ©ITSMF and ©JupiterImages™. Conference photos ©National BDPA; credits: Charlie Perkins. Cover graphics, photos and logos: Clemson University, National BDPA, BDPA-DC, and *bdpatoday*. *bdpatoday* is available for online publishing of ICT industry, chapter news, and community IT, Cyber, and STEM events. Forward advertisements, articles, calendar of events, or images with captions and credits to: [info@bdpatoday.org](mailto:info@bdpatoday.org). Readers may use NBDPA Groupsites calendars, enhanced by [Groupsites.com](http://Groupsites.com) to review local events or visit [www.bdpatoday.org](http://www.bdpatoday.org). An advertisement, announcements, OP-EDs, tweets, re-tweets, or following NBDPA on social media does not constitute an endorsement. Contributor opinions are not necessarily those of National BDPA nor local BDPA Chapters.





# Innovation Thrives at the 2014 International CES

## Special Report: CES 2014

Host Chapter: BDPA Nevada

Dates: January 7 – 10, 2014

Venue: Las Vegas, Nevada



CES photo: Julie Jacobson | AP



**Arlington, VA**—With never-before seen tech breakthroughs and thousands of new products launched, innovation took center stage at the 2014 International CES<sup>®</sup>. Owned and produced by the Consumer Electronics Association (CEA)<sup>®</sup>, the 2014 CES ran January 7-10, in Las Vegas, Nevada.

“Technology of the future was widespread at the 2014 CES where executives from every major industry came to see, touch, interact and do business at the

world’s intersection for innovation,” said Karen Chupka, senior vice president of International CES and corporate business strategy. “Amazing new products emerged in the areas of wireless, apps, automotive, digital health and fitness, 3D printing, startup tech and so much more. It was an incredible event that brought the global tech community together and successfully celebrated and showcased the amazing innovation that is a hallmark of our industry.”

More than 3,200 exhibitors showcased their latest technologies and major tech breakthroughs, launching some 20,000 new products to capture the world’s attention. “CES is a tremendous venue to launch new

See CES 2014 on page 7

## CES2014 Disruptive Technology Highlights



Disruptive technologies propel all sectors of the consumer electronics (CE) industry, but also raise salient questions about privacy, security, access, storage, device configurations and features. A variety of perspectives were offered during the following conference tracks at CES this year.

- The next era of wearable technologies has arrived
- Ultra HD (UHDTV) content: What CES and BDPA members will create for consumers to watch in 2014 and beyond
- How consumers will watch TV five years from now
- Next-Gen set-top Game Consoles: How super powerful, smartphone-friendly consoles will change not only gaming, but also our entire entertainment landscape including ways consumers receive video content in the home and office
- The F2P (Free-to-Play) business models and cloud-based gaming.



## Are You Changing the World? We Are.

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Kyle Carter (left) a photo-journalist intern with *bdpatoday's* staff and BDPA Student Member, steps into 'the future' during his **CES 2014** tour of a 3-D multimedia wall powered by LG. For one of this semester's CES assignments, he covers new technology and media innovations which someday may disrupt and penetrate the sports and entertainment industry. Visit **bdpatoday** to view this year's photo gallery pins.

Photo © 2014 *bdpatoday*

**CES** continued from page 5

products, meet with customers, press, shareholders and partners,” said Sally Washlow, president of Cobra Electronics.

**2014 CES featured 25  
market-specific TechZones**

Major CES announcements for 2014 from other exhibitors included the Parrot Jumping Sumo, Sphero Robots and Sonostar’s e-ink Smart Watch debuted insensor technology, wearable tech, the Internet of things, high-resolution audio and green technology. In total, the 2014 CES featured 25 market-specific TechZones and 15 major product categories.

The International CES attracts highly sought after experts and brings together leaders from a broad array of industries to survey and transact. The 2014 CES featured more than 250 conference sessions and 850 speakers including founders, presidents and CEOs.

Hollywood stars, musicians, sports legends and TV personalities attended the 2014 CES to promote the latest innovations in consumer technologies. Additionally, Gary Shapiro, president and CEO of CEA hosted **U.S. Secretary of Commerce** Penny Pritzker on the CES stage during the “Innovation: Keeping America Open for Business SuperSession.” Also, America’s new **Federal Communications Commission** (FCC) Chairman Tom Wheeler had a one-on-one conversation with CEA’s Shapiro. **bt**

**CES2014  
Sensors & Analytics**



Advances in new sensor and “insensor” technologies from consumer electronics (CE) industries were on display across automotive, transportation, fitness, health, and construction market sectors at CES.

- **94Fifty’s Smart-Sensor Basketball**  
The ball’s sensors give details on shot speed, backspin, and arc measurements then transfers information to iPhone or iPod touch apps via Bluetooth Low Energy (LE) accessories.
- **SONY’s Tennis Sensor**  
To track player movement, sensors use gyroscopes and vibration technology to collect data so when one strikes a ball, player sees what part of a racquet hit the ball while recording information regarding the speed of each swing, ball speed, how many balls were hit and shows data on previous shots.
- More pictures from **CES2014**, see page 17
- Discover more ► [bdpatoday.org](http://bdpatoday.org)



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## education and training across STEM industries

Given the large number of H-1B visas in science, technology, engineering and math (STEM) industries, pending high quality proposals, DOL expects a large share of this year's grant awards to support education and training in STEM industries.

The ultimate goals for the program are to ensure that participants gain academic and occupational skills by completing the program and graduating from high school; move into a positive placement following high school that includes unsubsidized employment, post-secondary education, long-term occupational skills training, or Registered Apprenticeship; obtain an industry-recognized credential in an H-1B industry or occupation for those industries where credential attainment is feasible by program completion, in addition to a high school diploma; and earn post-secondary credit towards a degree or credit-bearing certificate issued by an institution of higher education. DOL's closing date for solicitation **SGA-DFA-PY-13-01** is later this month—Monday, January 27, 2014. **bt**

Source: U.S. Department of Labor



### Lab Daze continued from cover page

PhD program which has the most African-American tenure-track faculty members in a PhD granting computing sciences department in America. Their program **Lab Daze**, is a documentary and reality series featuring students, faculty, staff and associates of the Human-Centered Computing (HCC) Division and the HCC Lab at Clemson University. HCC is an emerging field focused on understanding how to make computational technologies more useable and how computational technologies affect society.

*Lab Daze* shows a different perspective of who we are and what we do as African-American computing science PhDs and scholars. Our hope is that you will watch our episodes and gain new insight into the world of computing and just maybe, some kid will say, "I want to do that too." **bt**

▲ When ESPN arrived at Clemson University with their sports crew and television teams, *Lab Daze* ventured behind the scenes on campus with ESPN while producing *College GameDay*.

Visit: [labdaze.com](http://labdaze.com)

Source: HCC Lab, Clemson University

## BDPA Chapter wins Coalition of the Year Award for 2013

### NBMBAA-DC Presents Awards

**Silver Spring, MD**—The National Black MBA Association, Washington, D.C. Chapter (NBMBAA-DC), nominated and awarded National BDPA's Washington, D.C. Chapter (BDPA-DC) Coalition of the Year in 2013 for outstanding community outreach services and youth development programs. In 2013, BDPA-DC celebrated its 35-year milestone

and served as Host Chapter for the 35<sup>th</sup> Annual National BDPA Technology Conference and Career Expo. BDPA-DC also promoted scholarship and internship programs featuring TECH-inclusion, small business, and STEM initiatives for other regional non-profits such as H.O.P.E. Project DMV, Joint Educational Facilities (JEF), National Officers Association (NNOA), and the Washington Association of Black Journalists (WABJ). Pictured (L-R) are Perry Carter (BDPA-DC) and John James II (NBMBAA-DC.) **bt**



Photo courtesy NBMBAA-DC



U.S. Navy photo: NAVAIR

▲ **FY14 Spending Bill Winners:** In 2013, BDPA sponsor **Northrop Grumman** (NGC) captured another contract to build next-generation unmanned aerial systems for the Pentagon for persistent intelligence, surveillance, reconnaissance, and targeting (ISRT) missions. (Above) NGC and the U.S. Navy accomplished a major milestone last summer by landing its unmanned and autonomous X-47B combat jet on the deck of the USS George H.W. Bush (CVN-77). It was the first unmanned aircraft to make an arrested landing aboard an aircraft carrier.

## FY2014 Government Relations



At press time, the U.S. Senate passed an extensive and very hefty \$1.1 trillion omnibus spending bill by a vote of 72 to 16. H.R. 3547 was received by the Senate a day earlier from the U.S. House of Representatives for President Obama to sign into law. The White House expects a very quick approval. New legislation encompasses 12 separate annual appropriation spending measures bundled into one. It appropriates close to half of one trillion dollars for defense, intelligence, and cyber. GFY14 funding levels are outlined below.

- Agriculture: **\$21B**
- Commerce, Justice, Science: **\$52B**
- Defense: **\$487B**
- Energy & Water: **\$34B**
- Financial Services: **\$22B**
- Homeland Security: **\$39B**
- Interior & Environment: **\$30B**
- Labor, Health & Human Services, and Education: **\$157B**
- Legislative Branch: **\$4B**
- Military Construction and Veterans Affairs: **\$73B**
- State and Foreign Operations: **\$49B**
- Transportation, Housing and Urban Development: **\$51B**



### ▲ FY14 Omnibus Bill's Bigger Winners:

Funding for **Head Start** and **Early Head Start** programs will receive a \$1 billion plus-up in FY14—significantly providing more funding than last fiscal year due to budget cuts. The Administration for Children & Families (ACF) is a division of the Department of Health & Human Services (HHS). ACF promotes economic and social well-being of families, children, individuals and communities. ACF's Head Start program is a federal program that promotes the school readiness of children ages birth to 5 from low-income families by enhancing their cognitive, social and emotional development.

Thinking of expanding local Pre-K STEM and robotics programs? Head Start grants are awarded directly to public or private non-profit organizations (NPOs) by ACF's Office of Head Start (OHS). Contact NPOs, such as local **BDPA Chapters**, including community-based or faith-based organizations, and for-profit agencies within your community if you wish to compete for Head Start funds. All are eligible to apply for Head Start funding. **bt**





*The more viewpoints  
we have, **THE FURTHER  
WE CAN SEE.***

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## Internships: Opportunities & Testimonials

**Indianapolis, IN**—In today’s job market, experience will most likely give you the edge. But the question is, how do you get that experience when you’re just starting out? Enter **Lilly’s Internship Program** — step one in building BDPA Student Member resumes with

experience that’s real-world and hands-on with one of 2014’s National BDPA Platinum Sponsors.



Most internships are located at Lilly’s corporate headquarters in Indianapolis and last 10 to 12 weeks from May until September. Lilly seeks top performers – those who can uphold the Lilly values and exemplify their global standards of leadership. Then Lilly matches you with projects based on their business needs and your skills and interests.

As a Lilly intern, you will work on meaningful projects at one of the world’s top pharmaceutical companies. You will meet and interact with Lilly executives. You will receive competitive pay and free parking at your work site. If your position requires you to move, you may also receive help with housing and transportation costs. Discover more by visiting [lilly.com](http://lilly.com). 

**Washington, DC**—SiriusXM Satellite Radio offers one of the most hands-on programs specifically designed to make use of the talent and motivation in every intern. SiriusXM offers a multitude of exciting technology and media opportunities for interns, from the broadcast booth to behind-the-scenes and all things digital in between. Internships are unpaid and for credit only.



Recruiting for this summer begins March 2014 for opportunities in New York and Washington. BDPA student members may qualify for Summer Semester stipends directly from local BDPA Chapters or request grants from BDPA’s Education and Technology Foundation (BETF) through your local BDPA Chapter. Discover more by visiting [siriusxm.com](http://siriusxm.com).

**Testimonial:** by **Carissa Gaither**

**Status:** BDPA Student Member, Penn State University  
**Summer Internship 2013:** SiriusXM Satellite Radio

My internship at *Sirius XM Satellite Radio* last year made the summer go by so fast. I learned so much in my time working with the staff and I was very fortunate to get to be an intern with them because they were all really invested in making sure I learned anything and everything that I could in a short two-and-a-half-month period.



**#BDPA14:** Partner with us August 5-9, 2014  
 Indianapolis, Indiana | J.W. Marriott

See **BDPA INTERNS** on page 18







Organization or Agency	STEM Focus	Projected Deadlines	*Established BDPA Relationships
Army Corps of Engineers	Engineering and most STEM majors	Spring 2014	BDPA Baltimore, BDPA Huntsville
<b>NEW</b> - U.S. Coast Guard	All Majors	Spring 2014	BDPA-DC, BDPA Hampton Roads, BDPA Hartford, NBDPA CONUS, USCGA, OCS, or CSPI
CSC	Computer Science, STEM-IC (Intelligence & Cyber), C5ISR	Spring 2014	BDPA Cincinnati, BDPA-DC, BDPA Northern Virginia, BDPA Hartford
<b>NEW</b> - EA Sports	Software Engineering, Application Development, Marketing internships	Spring 2014	BDPA Bay Area, BDPA DC, BDPA Orlando
<b>NEW</b> - General Motors	Information Technology and Communications internships	Now Open (since August 2013)	BDPA Atlanta, BDPA Austin, BDPA Detroit and BDPA Phoenix (CIG)
HBCU/MI Project Office	CS-STEM or STEM-IC; able to obtain security clearances	Fall, Spring, & Summer	BDPA Atlanta, BDPA-DC, BDPA Huntsville, BDPA Orlando, BDPA San Diego (CIG)
HCSC**	Associate Intern(s)	March 2014	<b>National BDPA Platinum Sponsor</b> Illinois, Oklahoma, New Mexico & Texas
HP**	CS-STEM	Winter 2014	<b>National BDPA Platinum Sponsor</b> BDPA-DC, BDPA NoVA with 3.2 GPA
IBM	CS-STEM   "Extreme Blue"	Fall, Spring, & Summer	BDPA-DC, BDPA Greater Columbia, BDPA Southern Minnesota, BDPA Triangle
Johnson & Johnson**	All Majors	Winter/Spring 2014	<b>National BDPA Platinum Sponsor</b> Speak with J&J reps at Regional Events
<b>NEW</b> - Life Technologies	Manufacturing, Supply Chain Management, Strategic Sourcing	Now Accepting for Summer 2014	BDPA-DC (Frederick, MD), BDPA-LA (Carlsbad, CA)
Lilly**	Biology, Chemistry, Manufacturing, Supply Chain Management and more	Spring 2014	<b>National BDPA Platinum Sponsor</b> Meet Lilly reps at BDPA Events or on campus
NASA	Undergraduate Student Research Program	Spring 2014	BDPA Cleveland, BDPA DC, BDPA Houston, BDPA Huntsville,
Northrop Grumman	C4ISR, Engineering, Health IT, Manufacturing, STEM-IC (Intel/Cyber)	Fall, Spring, & Summer	BDPA-DC & BDPA Northern Virginia; Interns must have strong GPAs
Department of the Navy	All Majors	Fall 2014	NBDPA CONUS or NROTC
Raytheon	C4ISR, STEM-IC, Systems Engineering, Communications	Fall, Spring, & Summer	BDPA Huntsville, BDPA-LA, BDPA Mass-Metro West (Boston)
SiriusXM Satellite Radio	Communications, Marketing, Multimedia, SATCOM and STEM	Fall & Spring	BDPA-DC & BDPA-NY
TASC	Analytical, Computer Science, STEM-IC	Spring 2014	BDPA-DC & BDPA Northern Virginia

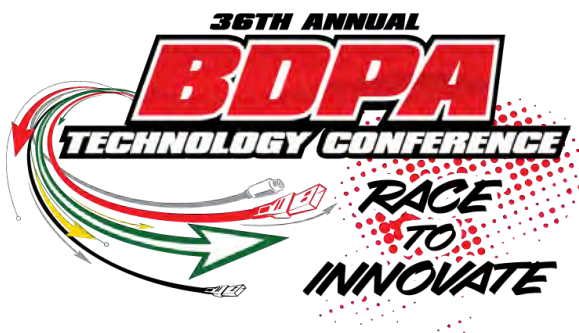
\*\* **BOLD** text indicates National BDPA Platinum Sponsors now accepting BDPA Student applications with strong GPAs and updated resumes. NBDPA [HSCC and IT Showcase](#) Student Members and Alumni are encouraged to apply each semester.



College graduate and undergraduate STEM majors with cumulative GPAs greater than 3.20 are invited to establish broader professional STEM, Cyber, and ICT Industry networks by joining BDPA and actively participating in National BDPA Technology Conferences and Career Fairs. Partner with a BDPA Chapter or BDPA Chapter Interest Group (CIG) this summer **August 5 -9, 2014**, Indianapolis, IN at the J.W. Marriott. Your next internship is one step closer with your **Student Membership (\$25)** by visiting [www.bdpa.org](http://www.bdpa.org). Join us to cultivate professional networks with local BDPA Members and Corporate Hiring Managers through our BDPA Member portal.

## BDPA and Local ICT Industry Events Information & Communications Technology (ICT)

- ▶ **International Consumer and Electronics Show (CES)**  
January 7-10, 2014  
Las Vegas, NV | Host Chapter: **BDPA Nevada**
- ▶ **North American International Auto Show (NAIAS)**  
January 13-26, 2014 – Detroit Cobo Center  
Detroit, MI | Host Chapter: **BDPA Detroit**
- ▶ **2014 Richard Tapia Diversity in Computing Conference**  
February 5-8, 2014 – Grand Hyatt Seattle  
Seattle, WA | Host Chapter: **BDPA Seattle**
- ▶ **28th Annual Black Engineer of the Year Awards (BEYA)**  
February 6-8, 2014 – Washington Marriott Wardman Park  
Featuring: **BDPA Northeast Regional Meetings & Career Events**  
Read more ▶ [BEYA.org](http://BEYA.org)  
Washington, DC | Host Chapters: **BDPA –DC** and **BDPA NoVA**
- ▶ **24th National Government Procurement Conference**  
April 16, 2014 - Washington Convention Center  
Featuring: **BDPA Small Business Special Interest Group (SIG) Events**  
Read more ▶ [OSDBU.gov](http://OSDBU.gov)  
Washington, DC | Host Chapter: **BDPA –DC**
- ▶ **National BDPA Technology Conference**  
August 5-9, 2014 – JW Marriott  
Read more ▶ [BDPA.org](http://BDPA.org)  
Indianapolis, IN | Host Chapter: **BDPA Indianapolis**



## 36<sup>th</sup> Annual National BDPA Technology Conference & Career Expo

AN ICT INDUSTRY EVENT | Indianapolis, IN • AUG 5-9, 2014

**Indianapolis, IN**—This year's National BDPA Technology Conference *Host Chapter* is BDPA Indianapolis. Members, Professionals, and Students attending next year's career fair will discover top employers from our Information and Communications Technology (ICT) industry's high growth market segments. Attendees are afforded numerous opportunities to network with IT professionals from all vertical markets and take full advantage of National BDPA's resources designed to enhance relationship building with hiring managers or corporate buyers. Moreover, senior IT and cybersecurity career opportunities with national job searches are provided to enhance professional and academic IT careers.

BDPA Sponsors and Exhibitors leverage opportunities to enhance their visibility across STEM, ICT, Cloud, Big Data, and Cybersecurity special interest groups (SIGs) to identify and recruit new hires directly from top talent pools available from national BDPA Chapters and chapter cities.

Our National High School Computer Competition (HSCC) and collegiate IT Showcase (ITSC) programs also provide opportunities for industry and academia to directly connect with students from local BDPA chapters, including qualified HSCC and ITSC student pipelines, to close digital divides and develop tomorrow's IT workforce. Whether you are in the job market or not, don't miss National BDPA's 36<sup>th</sup> Annual Technology Conference, Career Expo, reunions, and 39<sup>th</sup> BDPA Anniversary events in Indianapolis, IN next August! **it**



Visit [bdpa.org](http://bdpa.org) and [Groupsites](http://Groupsites) for more BDPA Chapter events.



November 16-21, 2014



SC14

New Orleans, LA


hpc matters.

**SC14: High Performance Computing (HPC) Matters**  
New Orleans, LA | Convention Center

**New Orleans, LA**—HPC is helping to solve our hardest problems in the world. Innovations from our community have far reaching impact in every corner of science, all the way to investment banking, in the discovery of new drugs, to the precise prediction of the next superstorm. For more than two decades, the SC Conference has been the place to build and share the innovations that are making these life-changing discoveries possible.

In November of 2014, SC is going back to New Orleans with new ideas and a fresh take on HPC. Spotlighting the most original and fascinating scientific and technical applications from around the world, SC14 will once again bring together the HPC community – an unprecedented array of scientists, engineers, researchers, educators, students, programmers, system administrators, and developers – for an exceptional program of technical papers, tutorials, timely research posters, and Birds-of-a-Feather (BOF) sessions.


The SC14 Exhibition Hall will feature exhibits of the latest and greatest technologies from industry, academia and government research organizations; many of these technologies will be seen for the first time in New Orleans. Mark your calendar and make your way to New Orleans. No city offers the same extraordinary mix of food, music, culture, and history; and no conference offers a better opportunity to view the why HPC matters.

Join the community in November to share our collective accomplishments and to engage in important conversations of how we make HPC Matter to our lives, our future, our communities and our world. 

Mark your calendars for **XSEDE14, July 13-18, 2014**  
Atlanta, GA | *BDPA Atlanta Host Chapter Atlanta, GA*—The annual XSEDE conference brings together the extended community of individuals interested in advancing research cyberinfrastructure and integrated digital services for the benefit of science and society. XSEDE14 will place a special emphasis on recruiting and engaging under-represented minorities, women, and students as well as encouraging participation by people from domains of study that do not traditionally use high-performance computing.



▲ **IT Showcase** | BDPA photo © 2012

Sessions will be structured to engage people who are new to computational science and engineering, as well as providing in-depth tutorials and high-quality peer-reviewed papers that will allow the most experienced researchers to gain new insights and knowledge. 

Sources: XSEDE and SC14





# Seattle, Washington

## February 5-8, 2014

### BDPA Northwest Regional

## 2014 ACM Richard Tapia Celebration of Diversity in Computing

Richard Tapia is a mathematician and professor in the Department of Computational and Applied Mathematics at Rice University in Houston, Texas. He is internationally known for his research in the computational and mathematical sciences and is a national leader in education and outreach. Tapia's current Rice positions are University Professor (only the sixth individual afforded this title in the 100-year history of Rice University), Maxfield-Oshman Professor in Engineering, Associate Director of Graduate Studies, and Director of the Center for Excellence and Equity in Education.

Tapia was born in Los Angeles to parents who separately emigrated from Mexico as young teenagers in search of educational opportunities for themselves and for future generations. The first in his family to attend college, Tapia went on to receive B.A., M.A. and Ph.D. degrees in mathematics from the University of California, Los Angeles. In 1967 he joined the Department of Mathematics at UCLA and then spent two years on the faculty at the University of Wisconsin. In 1970 he moved to Rice University where he was promoted to associate professor in 1972 and full professor in 1976. He chaired the department from 1978-1983. He is currently an adjunct faculty member of both Baylor College of Medicine and the University of Houston. Tapia has authored or co-authored two books and more than 100 mathematical research papers.

While at Rice, Tapia has directed or co-directed more underrepresented minority and women doctoral recipients in science and engineering than anyone in the country, and has led several programs that have brought recognition to the university's commitment to diversity. Since 1996, 60 underrepresented minority students have received Ph.D.s in science and engineering at Rice University. Tapia directs programs that are supported by the Alfred P. Sloan Foundation, the National Science Foundation, and other organizations that are designed to increase the number of underrepresented minorities obtaining graduate degrees in

science, technology, engineering and mathematics and enhance the preparation of underrepresented minorities for faculty positions in academia. At Rice, the NSF-supported Alliances for Graduate Education in the Professoriate has developed a supportive community of students and faculty members that gives advice on admissions to departments and provides students with formal and informal resources, support, and professional development. Professor Tapia is recognized as a national leader in diversity and has delivered numerous invited addresses at national and international mathematics conferences, served on university diversity committees, and provided leadership at a national level. Two professional conferences have been named in his honor, recognizing his contributions to diversity: Richard Tapia Celebration of Diversity in Computing conference and the Blackwell-Tapia Conference, whose founders described Tapia as a seminal figure who inspired a generation of African-American, Native American and Latino/Latina students to pursue careers in mathematics.

### 2014 Sponsors


#### National Science Foundation

The National Science Foundation (NSF) is an independent federal agency created by Congress on 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." The funding from NSF for Tapia 2013 was made possible by a grant, CNS 1050330, from the CISE Directorate.

#### Beyond Broader Engagement

The Beyond Broader Engagement at SC is funded by the NSF Broadening Participation in Computing program within the CISE directorate. Led by Dr. Raquell Holmes, the effort looks to engage participants of the Broader Engagement program with other efforts in BPC as well as to invite participants of other BPCs to utilize the SC broader Engagement program.

#### XSEDE (Formerly TeraGrid)

The Extreme Science and Engineering Discovery Environment (XSEDE) is the most advanced, powerful, and robust collection of integrated advanced digital resources and services in the world. It is a single virtual system that scientists can use to interactively share computing resources, data, and expertise. 

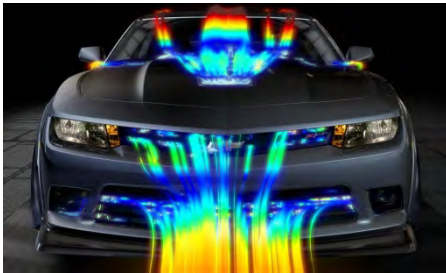






CES continued from page 7

## CES 2014 | Autonomous Technologies & Robotics



▲ **BDPA Detroit** is our Host Chapter for the annual North American International Auto Show (**NAIAS**.) During **CES 2014**, BDPA Members at CES also were introduced to new automotive technologies presented by BDPA corporate sponsors **General Motors (GM.com)** and **Cisco Systems**. The Bosch Group, a \$68 billion global supplier of technology and services, showcased its “driverless” vehicles (above right) with enabling parking technologies. Automotive technology is the largest Bosch business sector globally and in the Americas.

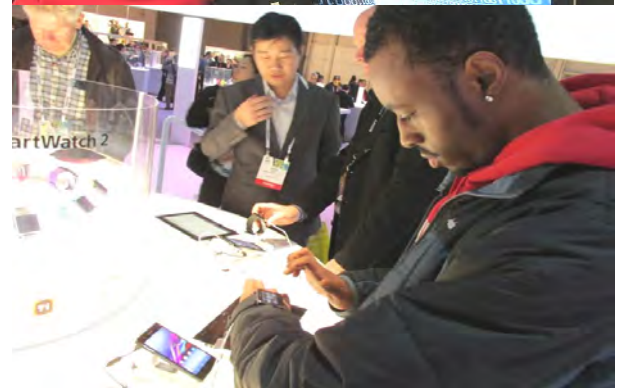
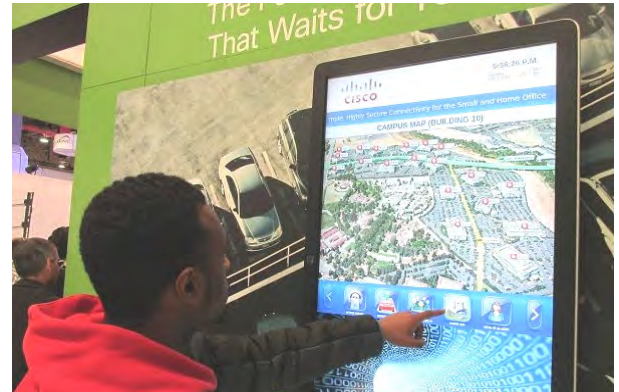


Sources: *The Bosch Group and CES 2014*  
 Left photo art: *courtesy GM/Chevrolet*  
 Right photo: *by Kyle Carter ©bdpatoday*

## CES 2014 | The Internet of Everything

The Internet of Everything (**IoE**) is approaching a \$20 trillion global opportunity over the next decade. New analysis by **Cisco Systems** reveals \$4.6 trillion of that is available to public-sector organizations through cost savings, increased productivity, new revenues and enhanced citizen experiences. In a 2013 White Paper recently published by Cisco, it was stated IoE undoubtedly will enable companies to “catch up” to competitors and compete on an equal footing. However, companies and small businesses that win in the long run will be those leveraging IoE to create unique offerings. ■■

Sources: *Cisco Systems and CES 2014*



▲ During **CES 2014**, BDPA Sponsor Cisco Systems presented **The Internet of Everything (IoE)** during workshops where participants and BDPA Members experienced interactive maps with secure interfaces on touch-screen displays. Demonstrations included interactive college campuses (top photo) and “*smart parking*” maps linked to intermodal transportation apps “*at the speed of now.*” With Sony **SmartWatch2** (above), a second-generation smart-phone was introduced to viewers and BDPA Members during **CES 2014** as wearable tech trending with new interfaces for Android accessories and mobile apps for interactive content. ■■

Photos: © 2014 bdpatoday



**BDPA Interns** *continued from page 12*

My favorite part of the internship was the fact that the entire time it felt like I was part of the staff, and not an intern. I was never asked to sit at a desk all day or run errands. If there was a task I wanted to learn, like writing up press releases or making and editing a promotional commercial, I wasn't stuck doing busy work. I was even able to work as a board operator on some days, which is pivotal to any successful radio station.

career, whether that is in television, radio, or something completely different. Interning with *The Madison Show* has been an amazing and valuable experience. I fully intend to utilize all of the skills I've gained, industry updates from BDPA, and information I've learned about the technical aspects of radio and television to help further my career. **bt**

**Testimonial:** by *Maya Dennis*

**Status:** **BDPA Student Member, University of Virginia**

**Summer Internship 2013: HP Enterprise Services**

**Herndon, VA (BDPA NoVA)**—My name is Maya Dennis and I am currently a third year student at the University of Virginia. I am an Economics and Spanish double major. I can attest to the fact that the internship experience is one that is truly invaluable. As a two time summer intern for Hewlett-Packard Enterprise Services (HPES), I can honestly say that my experiences at HP were life changing.



My first summer with HPES, I worked as an intern in the Strategy and Competitive Intelligence Division. This division helped me to enhance my research and analytical skills. My daily work consisted of researching HP's top competitors, compiling competitor profiles on PowerPoint slides, and creating and analyzing several excel spreadsheets.

Through BDPA, I was very fortunate to be introduced to one of the largest technology companies in the world. Many people associate HP with printers

See **BDPA INTERNS** on page 19



▲ *Ms. Carissa Gaither on location at SiriusXM Satellite Radio studios in Washington.* —photo courtesy Carissa Gaither

This internship wasn't like taking a boring communications course or like being supervised working with a college radio station—it was real work experience. I've learned so much and was allowed to learn at my own pace, even in such fast-paced environment like political talk radio. I know I'll take what I've learned here and carry it into my future





**BDPA INTERNS** *continued from page 18*

and computers; however, information technology (IT) services and infrastructure support are a large part of the HP portfolio. Specifically, HPES provides these services to the United States Government. Despite the fact that I do not have a background in computer science, I was able to add value to the mission of the organization. I was fortunate to return to HPES for a second summer.

As a marketing intern during this summer, I was able to develop marketing strategies internally and externally. While working with the Marketing team, I also worked very closely with the Sales teams in assisting with client-facing opportunities, which presented a completely different perspective of the business side of HP. My HP internship experience is by far one of my most memorable experiences. I worked with people who were passionate about their job and who cared about my growth and development as a student intern.

At the end of each summer all of the interns gave a presentation regarding the summer experience to senior leadership of HPES. I loved the fact that I was given an incredible opportunity to add value to such a large corporation. I might have just been a summer intern, but I felt like I was a true full-time HP employee. 📺



▲ **#LabDaze** | Reality-Documentary series featuring Computer Science Ph.D. candidates and graduate students. Other favorite episodes are now available on **Popular Technology TV** (PTTV).

Photo art: Courtesy HCC Lab, Clemson University

**APBi 2014** | Advance Planning Briefing for Interns



Check Regional BDPA calendars for **Spring APBi & Fall APBi** Student/Alumni Events

[bdpa.org](http://bdpa.org)

▲ HSCC Students from BDPA's Twin Cities Chapter in Minnesota visit HP's team for a tour of HP's Mobile Data Center during the National BDPA Technology Conference and Career Expo in Washington. –Photo ©*bdpatoday*





## Popular Technology | #AppDev

### 5 Ways Apps Change Everything

**Falls Church, VA**—Application software is no longer only for the enterprise. Today's lightweight software apps are of the people, by the people and for the people. Apps can be created by almost anyone, thanks to new development tools. They can be used almost anywhere, thanks to the widespread adoption of smartphones and tablets. And they can be easily distributed, thanks to the growth of app stores and over-the-air downloads.

The net effect, says Erika Olimpiew, senior architectural specialist at CSC and the author of a new CSC report, *Apps rEvolution*, is a fundamental change. Apps are evolving, in that they are getting faster, smaller and more powerful. But apps are also driving a revolution — one that is having a big effect on traditional enterprise IT.

All this, in turn, has serious implications for IT leaders. "CIOs need to turn 'shadow IT' into their own advantage," Olimpiew says. "Instead of controlling IT and limiting it to IT professionals, CIOs can be facilitators. They can enable innovation by allowing employees to develop apps (given guidelines) and then distribute them via an app store set up by IT. IT can vet apps, promote the best ones, and in general cultivate a do-it-yourself development culture and processes."

To help put the apps revolution in perspective, Olimpiew has identified five key areas where apps are changing ... well, almost everything.

#### 1. Apps Experience

An app's overall experience, Olimpiew writes in the report, is the combined result of its ease, appeal and speed. These elements, in turn, are inseparable from the app's use, effectiveness and popularity. In other words, when it comes to apps, engagement and context matter. The best apps combine technical flexibility with the touch of an artist. Any app that hopes to meet the demands of today's users must provide an easy, intuitive and to-the-point experience — and an experience that improves over time.



One way apps engage is by focusing on business-to-consumer relationships. For example, an iPad app in development at CSC reimagines the full life-cycle interaction between car buyers and car dealers that invokes a 'customer for life' approach. The app aims to let consumers fully manage the purchasing process (including financing and insurance) with auto dealers without having to physically visit the dealership. Then, after a car is purchased, in-car sensors can issue real-time status reports to the owner and car dealer/manufacturer on the car's health, alerting the owner when maintenance is needed, and even scheduling that maintenance for them. Social interaction also allows the owner to be informed of relevant information (for example, special offers and warranty issues).

See Popular Technology on page 22





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**Popular Technology** *continued from page 20*

## 2. Apps Everywhere

Apps are embedded in smartphones and tablets, of course, but also in other sorts of devices — even people. Apps now can be found in home TVs, refrigerators, ovens, thermostats, luggage, vending machines and other everyday devices. Similarly, connected cars carry apps for in-vehicle entertainment, safety, diagnostics, stolen-vehicle recovery, marketing and sales. And connected humans are using smartphones to take medical readings, administer 'smart pills' that communicate after being swallowed, and even implant nanochips that can report on a person's health from the inside.

A world in which apps are everywhere has big implications for business operations. This trend, also known as the Internet of Things, can help organizations cut costs by automating business processes, increase revenue by creating and offering new services, and comply with government regulations by controlling environmental factors such as energy use. What's more, says Olimpiew, these connected apps are fast becoming commodities. "Consumers," she adds, "can set up these connected-things systems in their homes."

## 3. Apps DNA

The IT architecture and other technical aspects of apps are changing, too. Traditional enterprise

client/server applications (such as enterprise resource planning and customer relationship management) typically run on servers in an organization's data center, and are accessed using desktops and laptops. By contrast, today's lightweight apps are far more distributed; they run both locally on devices and centrally on servers in the cloud. Some even operate solely on multiple devices, working in a peer-to-peer arrangement that dispenses with the server. But, adds Olimpiew, "this also means your existing enterprise systems have to be upgraded to support these apps."

At the same time, developers are shifting from heavyweight programming languages to ones that are lighter and simpler, and that require less overhead. Distribution is changing, too. Where traditional enterprise apps were typically distributed either on CDs or by lengthy downloads, today's apps can be quickly downloaded from an app store or over the air.

These changes reflect the fact that mobile apps have expanded from simple Web-based apps to apps that leverage device features such as cameras and geographic positioning (GPS), as well as enterprise systems for rich data. Apps will expand even further as they interact with all manner of things connected to the Internet (see page 17, *The Internet of Everything* [IoE].)

## 4. Apps Platforms

"Anybody can be a developer," Olimpiew says. The era of the managed desktop is slowly coming to an end,





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replaced by dynamic apps, enterprise app stores and the bring-your-own-technology (BYOT) phenomenon. Today's app platforms greatly simplify the work of development, management and distribution.

This also means a great deal of development work can now happen outside the IT department. Business analysts, marketers and other non-IT professionals today have easy access to tools that range from simple drag-and-drop to more advanced approaches that expose application programming interfaces (APIs), integrate services and create apps.

But one traditional IT element — application usage and performance monitoring — becomes even more important with apps. Enterprise users are a captive audience; even if they don't like the company's human resources app, they still have to use it. Not so with today's apps. In a survey of U.S. adults who use mobile apps, conducted in 2012 by API company Apigee, 99 percent of respondents said that if an app didn't perform, they would either delete the app immediately or use social media to tell a friend about it.

## 5. Apps Platforms

Apps are not simply an add-on to our current economy; they actually are transforming the economy, creating entirely new business models and enabling new ways of offering products and services. Olimpiew offers one eye-popping statistic: The business of online apps stores is now worth over \$25 billion.

New markets are forming around connected things. Innovation is being enabled through integrated apps; platforms that connect things, apps and people; and APIs that extend existing services into new realms. One example is the ecosystem forming around wellness and health cost management that involves employees, employers, health plan providers and health technology companies. Apps can be used to integrate health and fitness data and encourage healthy employee behaviors, leveraging personalization, socialization and financial rewards.

Apps are also helping some businesses change their interactions with customers. Airlines are developing apps so flight attendants can look up passenger information, preferences and connecting-gate information to better assist passengers and provide more personalized service. Retailers are equipping sales clerks with mobile devices that accept credit cards and can access full store inventory, so shoppers can pay for merchandise anywhere in the store. Shoppers have less time to change their minds, bulky cash registers are not needed, and fewer sales are lost due to out-of-stock inventory. Expect more of this in the future.

## 6. The Mobile CIO


Olimpiew advises CIOs to allow third-party developers to help them innovate in areas where it's not practical for IT to focus. For example, she says,

“Netflix didn’t want to be in the business of creating apps for every single device. So it exposed its API to third-party developers to create these apps for [the company], for watching Netflix movies on a smartphone, for example.”

*“... The digital economy is no longer just out there on the Web; it is literally in the palm of your hand.”*

—CSC’s Erika Olimpiew

CIOs can also get more directly involved in the new API economy. For one, they can work with a new breed of companies that provide APIs that help others innovate and develop apps. Some of these services are even free. CIOs must also ensure app security. “As usual, security is a big issue,” Olimpiew says. “When employees use their personal devices to connect to the enterprise network, they can expose the company to malicious code. Some safeguards against malicious mobile code exist, like security vulnerability scanning and secure app containers, but there are other problems that still need to be addressed.”

The Apps rEvolution is not just about apps. It is about business change: creating new experiences, inventing new products and services, redefining customer service, and improving productivity and efficiency. It is about building new and better ways of using modern technologies, and about applying IT to entirely new realms. “The speed, simplicity and appeal of the app experience may have started as smartphone and consumer phenomena, but this is now the model for how information systems will be built and used in the future,” Olimpiew says. “The digital economy is no longer just out there on the Web; it is literally in the palm of your hand.” 

This article is originally published for *CSC World* magazine. See full interview at [CSC.com](http://CSC.com) and on [PTTV](http://PTTV).



## 2014 National BDPA Conference Call



By virtue of the authority vested in me as National President of NBDPA and in accordance with the mandates of **Article VIII**, Sections **§8.1** and **§8.2**, of the National By-Laws for National BDPA; it is my distinct pleasure to announce the call for assembly of the **2014 Annual Delegates Meeting** and your **36th Annual National BDPA Technology Conference**.

Our site for this year’s National BDPA Technology Conference shall be Indianapolis, Indiana—with BDPA Indianapolis serving as our Host Chapter. The JW Marriott Indianapolis is the official headquarters hotel for our assembly, Career Fair, Technology Expo, National High School Computer Competition (HSCC) scholarship round, National IT Showcase (ITSC) scholarship round, and our annual Youth Technology Conference (YTC.)

Said National BDPA Technology Conference shall take place during the time period August 5th through August 9th, 2014—with our formal Banquet and Awards Gala on the evening of Saturday, August 9<sup>th</sup>, 2014. BDPA Chapters, BDPA members, Corporate Sponsors, and stakeholders are hereby notified of the time and place for 2014’s National BDPA Technology Conference and Career Fair. Take full advantage of your annual memberships, discounts, and color sponsorships available to your organization in this year’s portfolio.

BDPA Chapters are directed to make appropriate plans to ensure their Executive Committees, Delegates, new members, student members, participating High School Computer Competition teams and IT Showcase teams have successfully pre-registered prior to next quarter. I look forward to our next reunion and industry meetings this August in Indianapolis!

**Dr. Craig Brown**  
National President



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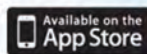
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A young man in a Marine uniform stands in front of a house. He is wearing a white officer's cap with the Marine emblem, a black jacket with gold buttons and a shoulder strap, and a black belt with a gold buckle. He has several medals and ribbons on his chest. The house behind him has white siding, dark shutters, and a brick foundation. The number '713' is visible on the house. The scene is set outdoors with trees and a lawn.

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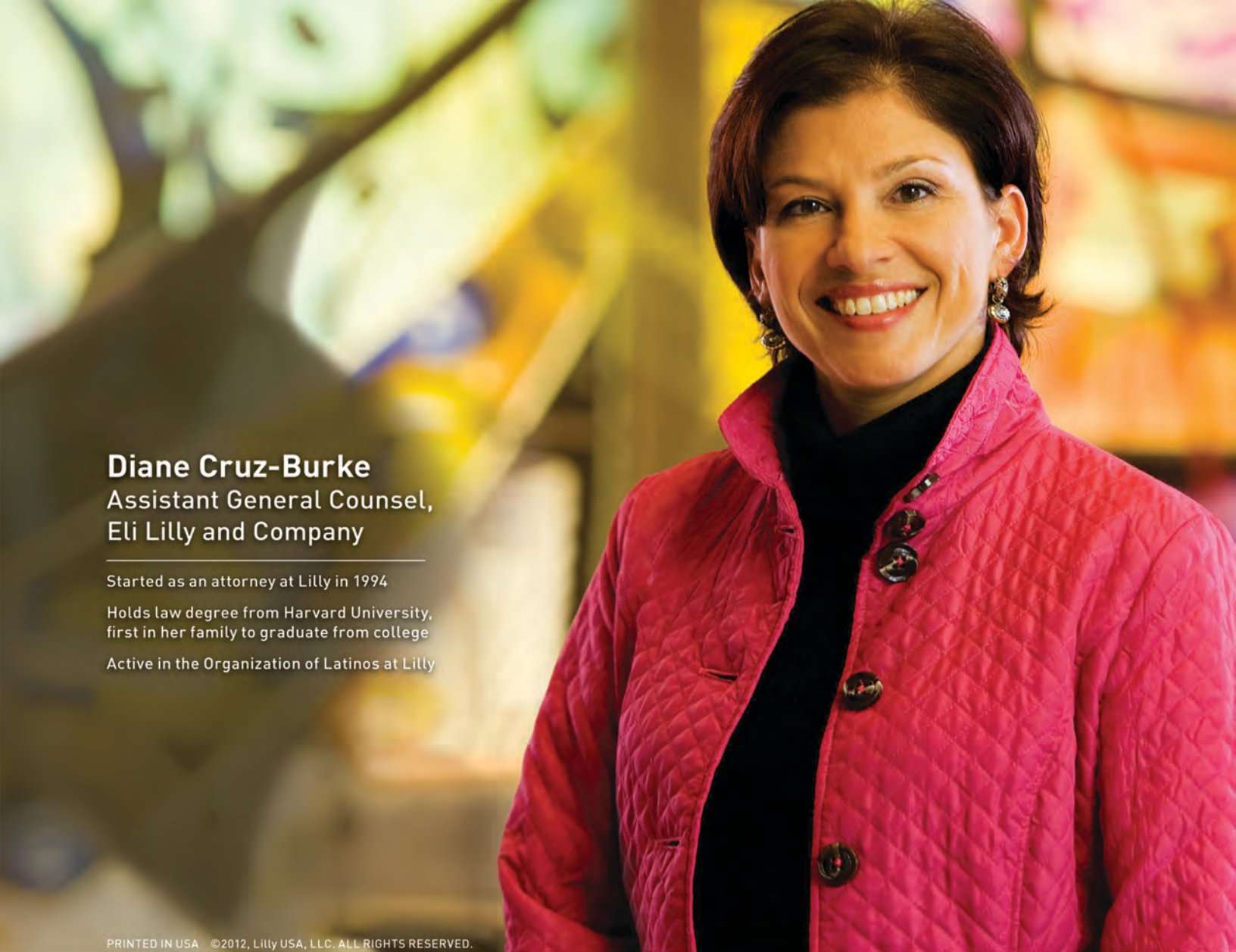
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integration



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integration





A portrait of Diane Cruz-Burke, Assistant General Counsel at Eli Lilly and Company. She is a woman with dark hair, smiling, wearing a bright pink quilted jacket over a black turtleneck. The background is a blurred indoor setting with warm lighting and colorful elements.

**Diane Cruz-Burke**  
Assistant General Counsel,  
Eli Lilly and Company

Started as an attorney at Lilly in 1994

Holds law degree from Harvard University,  
first in her family to graduate from college

Active in the Organization of Latinos at Lilly

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## Part of my fabric.

Both of my parents come from large families that migrated to the mainland U.S. from Puerto Rico when they were very young. They watched their parents struggle and never get ahead. But, they were determined that one day their own children could realize a better future.

Growing up in a close, extended family exposed me to a variety of challenges. We depended on one another, and for me that meant taking on huge responsibilities, even at a young age. At times, this

could be emotionally draining, but it taught me how strong I really was. With the support of my family, I learned that problems are really opportunities to reshape the things we're not happy with. Anything is possible with persistence and focus.

This is an important part of my fabric. It's what makes me passionate about life and our mission to affect improved patient outcomes. Just as I have personally overcome challenges, I hope to use these experiences to positively impact the lives of others.

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 In 2014, local BDPA Chapter 40-Year NBDPA celebrations launch **BDPA 5.0**
- **Black History Month 2014**

Founded in 1975, National BDPA (NBDPA) enters its fifth decade in 2015 with a 21<sup>st</sup> century mission to bridge emerging technology competency gaps in underserved communities. Critical areas of concern include information and communications technology (ICT), application development, cyber security, and telecommunications. Local BDPA Chapter objectives across national regions are to identify ICT and related industry pipeline challenges, then provide technology and infocentric training programs with educational outreach services for professionals and youth. Success stories transcending respective metropolitan areas in direct support of technology inclusion (**TECH-Inclusion**) initiatives and next-generation workforce (**NGWF**) development are published monthly in every digital-print edition of *bdpatoday*.

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