

NEWSWORTHY

The Newsletter of the Thomas Jefferson High School for Science and Technology Partnership Fund, a non-profit foundation dedicated to supporting the unique learning opportunities available at TJ and maintaining the special relationship of alumni to the School

Interior Demolished as Phase II Begins



The above photo, taken in February, 2015 by a student-built drone (see December 2014 issue) shows TJ's demolished interior, with the new dome at top, new triangular Administrative Wing to the dome's left and new Research Lab Wing to its right (part of the new Chemistry/Geosystems Wing is at bottom). In inset photo, students navigate the hallway connecting the temporary front entrance (left) with the Research Lab Wing.

RENOVATION UPDATE - With the demolition of the school's interior, Phase II of TJ's transformative renovation has begun. This phase involves completely reconstructing both levels of the school's classrooms over the next calendar year, with the dome entrance opening upon its completion.

The temporary hallway (pictured, inset) allows students to walk safely from the temporary front entrance to the research labs and newly constructed cafeteria (opening in April).

The new Research Lab Wing and two other new wings completed during Phase I of the renovation were showcased at the November, 2014 Ribbon Cutting (see December 2014 issue) and the January, 2015 Open House (see back page). At both events, large numbers of loyal past parents mingled with current parents, alumni, and friends of TJ.

CAMPAIGN UPDATE - Recent giving highlights include a \$100,000 gift from the Ameson Education and Cultural Exchange Foundation (see page 2) and a year-to-date alumni giving total that is more than double the total at the same time last year. These and other donations made this winter have lifted the Campaign for TJ over the \$4 million mark, bringing us halfway to our highly ambitious \$8 million goal!



As guests of a TJ grandparent and Cosmos Club member, the Tsinghua University and Tsinghua University High School (THS) educators enjoyed a Sunday brunch at the DC club. From left to right, Peter Zhao (THS English); Nan Qiu, (THS Physics); Prof. Ben Koo (Tsinghua Univ. Industrial Engineering); Jie Cao (THS IT); Jane Yang Li, Parent '09, '14; Prof. Emeritus Walter K. Kahn, Grandparent; Hilde Kahn, Parent '12, '14, '17; Dr. Paul Cammer (Special Advisor to the Principal, RDFZ HS, Beijing, and retired TJ Neuroscience Lab Director); Shuming Sun (THS IT); Han Xu (THS Curriculum Dev.)

TSINGHUA FACULTY LEARNS THE TJ WAY

In February, five educators from the main campus of Beijing's Tsinghua University High School (THS) and one from Tsinghua University visited TJ for an intensive introduction to our unique approach to high school education. The visit encompassed eight very full school days, exposing the Chinese educators to a broad cross-section of TJ faculty and staff. For example, one day included a session with five Lab Directors, a session with senior research lab students, an alumni presentation, and a tour of the Science Fair; and the following day featured a Lab Director session, classroom observations of a research lab and two AP science classes, an overview of TJ Diploma requirements, and a presentation on evaluating student research.

The educators, who aim to learn how best to adopt aspects of the TJ curriculum and operation, were overwhelmed with information but extremely appreciative of both the formal presentations and the warm welcome they received from the entire TJ community. PTSA and Chinese community volunteers provided several home-cooked lunches and led the guests on evening and weekend outings to DC sights, shopping destinations, Hope Chinese School, and more.

As part of the TJPF's arrangement with THS, TJ faculty and staff may also travel to Beijing during school breaks. In addition, THS has made a significant contribution to the Campaign for TJ to assist the School with its growth and development (see also Back-to-School 2014 issue).



After the IBET presentation where she was joined by Craig Lewis (Lab Technology), Mary Beth Kochman (English), and Kerry Hamblin (counselor), Biology teacher Barbara Wood (far left) shows a video to the Tsinghua visitors.



Assistant Principal Tinell Priddy receives a token of appreciation from the Director of THS Golden Sail Orchestra during the orchestra's 8th period concert at TJ on February 11th. The orchestra, which specializes in Chinese folk music played on traditional instruments, was on a multi-city US tour.



Representatives from Ameson and Thomas Jefferson Partnership Fund (TJPF) sign an agreement on February 25th. From left to right, in front row, Tom Valery, TJPF Immediate Past Chair and Prof. Sean Zhang, Ameson Executive Vice Chair; in back row, Zhu Xiao Di, Ameson Deputy Director; Tia Kinis, TJPF Development Director; Stephen Smith, Ameson Director; Dr. Evan Glazer, TJ Principal; and Samantha Courtney, TJPF Development Manager.

TJ TO ASSIST EDUCATIONAL EXCHANGE FOUNDATION WITH STEM HIGH SCHOOL PLANS

Since 2005, TJ has hosted Chinese exchange students traveling under the auspices of the Ameson Education and Cultural Exchange Foundation (Ameson), a non-profit, non-governmental organization headquartered in DC that is dedicated to promoting cultural exchange and educational cooperation between China and the rest of the world. In what Sean Zhang, Ameson's Executive Vice Chair, called "a new beginning to our seven-year collaboration," TJ Partnership Fund (TJPF) committed to assist Ameson as it embarks on launching its first STEM high school in China.

Pursuant to the agreement, TJPF will facilitate Ameson's research into best practices, selection of faculty, and ongoing progress evaluations as the foundation begins to establish the Thomas Jefferson International Schools, private high schools modeled on TJ's curriculum, administrative practices, and evaluation system. This agreement between Ameson and TJ's non-profit foundation serves to further their mutual goal of expanding access to educational opportunities for young people.

To support TJ's efforts to improve the research capabilities of its newly expanded labs, Ameson has made a significant charitable gift to the Campaign for TJ.



PRINCIPAL DELIVERS STEM SYMPOSIUM KEYNOTE

On Saturday, March 7th, media and events company *WashingtonExec*, with Presenting Sponsor *Leidos* and Platinum Sponsor *Vencore*, held its second annual K-12 STEM Symposium. The free, all-day event, which took place at Herndon's Nysmith School, included exhibits, speakers, panel experts, and STEM activities organized under the theme, "The Parent Factor: How to Engage Your Children in STEM."

TJ Principal Dr. Evan Glazer delivered the keynote address, "The Tiger, Dolphin, and Jellyfish Parent – Which One is Best for STEM?" Dr. Glazer discussed research on the tiger (authoritarian), dolphin (authoritative), and jellyfish (permissive) parenting styles, noting that what matters most is parents' attitudes toward their child's learning. "How you respond to your child's curiosity sets the stage. Your attitude when a child struggles matters," he said, emphasizing that research shows that when parents model the values needed to succeed in STEM, including intellectual curiosity and perseverance, these values rub off on their children.

TJ was also well-represented among the dozens of non-profit organizations, agencies, and corporations showcasing their educational programs at the event. Volunteer TJ parents and students, including STEMbassador representatives, spoke to parents of younger children about encouraging STEM-related pursuits, and several TJ students manned booths, including ProjectCSGIRLS founder Pooja Chandrashekar, TJ '15, who also spoke at the event (see BTS 2014 issue), Malaria Free World founder Kritika Singh, TJ '16, (see December 2014 issue) and Satvika Kumar, TJ '16 (pictured, above right, with two Core Team members in front of their Symposium booth and profiled at right).



STUDENT THINKS UP NEW WAYS TO BREAK DOWN STEM BARRIERS

Junior Satvika Kumar's non-profit organization, Learning Pathways Project (LLP), aims to reduce the gender gap in STEM education through the innovative development of learning tools and programs. LPP reached over 500 girls in 2014 and is off to a great start in 2015. Satvika (above, at right) attended the STEM Symposium to promote her group's first major event, #firsthack, a hackathon for kids not yet in high school.

#firsthack

#firsthack, which will take place at Nysmith on Saturday, April 18th, will introduce young students (5th to 7th grade) to real-world programming challenges. Every student team will be paired with a high school student volunteer. By experiencing their first hackathon under the guidance of experienced, young mentors, #firsthack team members will learn the skills needed to create innovative solutions and to pitch their ideas, along the way gaining an understanding of how applied technology works and discovering exciting possibilities in CS.

Satvika got the idea to start an educational non-profit after receiving an Educational Enhancement Through Technology grant that she used to create an app prototype. She demonstrated the prototype at the June 2013 JOSTI conference, an annual meeting TJ hosts for overseas educators (see August 2014 issue).

To use Satvika's app, a student loads a list -- for example, the multi-step

processes involved in cellular respiration, learned in Biology -- onto her phone. The app scrambles the list and prompts the student to order it under time pressure. By allowing students to conveniently review material whenever they have a few spare minutes, the app discourages cramming and encourages long-term retention.

Last spring, Satvika's app won first place for her Congressional District in the inaugural House Student App Challenge. This past November, the Thiel Foundation awarded her a \$1,000 demo pitch prize at its Vegas Summit, recognizing the app for "capitalizing not only on time spent daily on mobile devices, but also youth interest in gaming applications."

Satvika, who appreciates how important mentors and supporters are for girls who hope to succeed in STEM, notes the encouragement and direction she has received from many adults in the TJ community. Energy Systems Lab Director Adam Kemp, Computer Science teachers Steve Rose and Ria Galanos, and Counselor Kacey McAleer provided direction and support. Biology teacher Dr. Barbara Wood served as her long-time research mentor, and Principal Glazer guided her as she moved from grant applicant to JOSTI presenter and beyond.

Satvika also credits her entire core team with the group's success: Shankar Balasubramanian, TJ '15, Curriculum Development; Bita Golshani, Langley '16, Strategy & Communications (above, at left); Anjali Khanna, TJ '16, Communications; Christina Wei, TJ '16, Outreach; Rachel Li, TJ '16, Product Development (above, center); and Bhuvanesh Murali, TJ '16, Product Development Lead.

"TJ has provided me with the best opportunity to develop my entrepreneurial, leadership, and teaching skills in my effort to bring better educational opportunities in computer science and STEM fields to girls globally. Furthermore, working with talented peers at school has made it a really fun and enjoyable experience," Satvika said.

YOUR DONATIONS AT WORK: BIOTECHNOLOGY & LIFE SCIENCES LAB



Dr. Andrea Cobb, Biotechnology Lab Director, explains why her lab is the most sophisticated high school biotechnology lab in the country.

“Thanks to generous private donations over the years, our Lab was already equipped with several advanced devices that exist at few -- or no -- other high schools, for example, a flow cytometer, Sonifier, and real-time polymerase chain reaction (RTPCR) thermocycler.

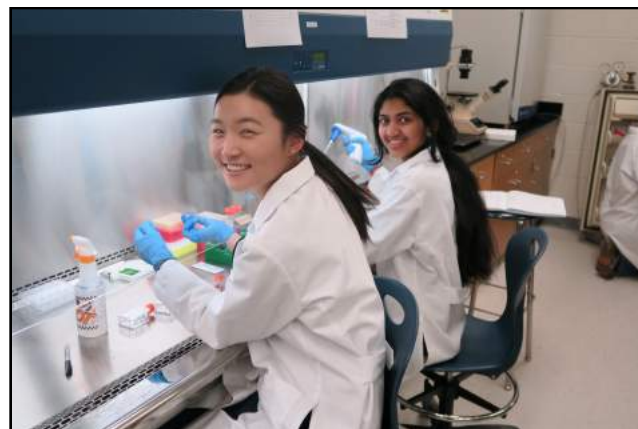
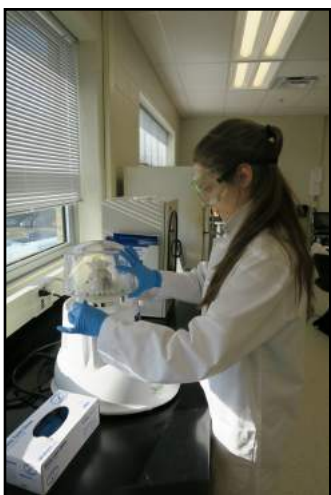
“However, the renovation and accompanying Campaign for TJ has helped us quickly acquire some truly exciting new pieces of equipment, including:

- hands-free faucets for maintaining aseptic technique;
- two new environmental growth chambers for algae and plant research;
- a bioanalyzer, aka “Lab on a Chip,” which can characterize the concentration, size, and quality of up to a dozen tiny samples of proteins, RNA or DNA simultaneously as a preparatory step for further analysis;
- a proteomics system, which sorts proteins from an organism or cell type by pH and then by molecular weight, with software that identifies biomarkers and modified proteins and quantifies proteins whose levels have changed relative to constitutive proteins;
- a deep-well quantitative RTPCR system, which can process twice as many samples as the Lab’s older unit, for analyzing products of stem cells, genetic mutations, and variations in gene expression; and
- a personal genome machine (and accompanying preparatory and analytical tools) that can sequence in three hours

what it took the human genome project fifteen years to do!

“However, a biotechnology research lab of this caliber is not complete without state-of-the-art microscopes critical for visualizing cellular processes. Still on our Needs List are a live cell fluorescence microscope and a confocal microscope, both of which are to be shared with the Neuroscience, Oceanography, and Quantum Physics Labs. To get the most out of these expensive and sensitive microscopes we also need new computers with high-end imaging capability and training on both systems for the staff of all four research labs.

“I’d also like to mention that I’m particularly excited about the potential impact on our lab of the School’s planned collaborative research network, JCIRN. Students could make excellent use of an online network of qualified, vetted, willing advisors for their research. They could also profit from tutorials on advanced techniques and use of specialized equipment. The possibilities really are endless.”



Senior research students work on projects in the Biotechnology Lab, clockwise from left: Placing a plant sample in the homogenizer; removing a sample from an incubator; working under one of the Lab’s flow hoods; preparing to place samples in the fluorometer; and removing samples from dry ice in preparation for use in the personal genome machine (described above).



YOUR DONATIONS AT WORK: AUTOMATION & ROBOTICS LAB



Charles dela Cuesta, Robotics Lab Director, discusses what he appreciates most about his new Lab:

“My goal has always been to be able to give those kids who are really

passionate about robotics a place where their ideas can come to life. I can already see the ways in which the new facility is empowering those kids while also encouraging more interest in the subject across the board.

“Robotics is at the intersection of several disciplines – design, electronics, programming, prototyping, and systems engineering. Students use CAD to design the robot, programming to tell it what to do, prototyping to build the housing, and electronics and systems engineering to build the components. Our Lab attracts programmers who want something more tangible to work with and electronics types who want to go beyond the circuit board. There’s a lot of overlap with students who are interested in prototyping, and a lot of collaboration with that Lab. The multi-disciplinary nature of the work means that ideally a group of kids with different interests works together on a robot.

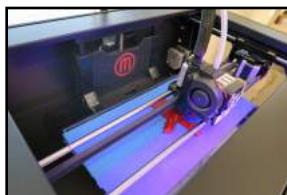
“I’m very excited about finally having some space that we can devote to robot

testing. In our old Lab, every time students needed to test a robot, they had to move desks, equipment, and projects out of the way, mark off the space, and introduce whatever obstacles or other items the robot needed to work with. Now we have devoted project space, testing space, and instructional space. With our 10-foot ceiling (plus several feet above the rafters) we can accommodate taller robots, taller robot goals/obstacles, and flying robots, with the added benefit that we also have what may be the most pleasant working environment anywhere in the building.

“We’re making good use of our new power tools and laser cutter. We’re still hoping to acquire some more fabricating equipment. Of course, we appreciate the specialized lab benches, storage shelving, and other furniture we were able to acquire thanks to Campaign for TJ donations. These important components define our various spaces and turn our warehouse-sized room into a research lab.”



At top and above left and right, Robotics elective students work at the Lab’s new specialized lab benches. At right, students test a robot, and at left, check on a 3-D printer (also shown from above.)



PROFESSOR CHRIS LOVE, TJ '95, IS MAKING A "3-D PRINTER" FOR BIOLOGIC MEDICINES

One of eight faculty members to be awarded tenure by MIT's School of Engineering last year, J. Christopher (Chris) Love, TJ '95, leads a team of interdisciplinary researchers who combine principles and techniques from surface chemistry, materials science, physics, and chemical engineering to develop new micro- and nanotechnologies for addressing biological questions in immunology, microbiology, systems biology, and bioprocess engineering.

The Love Lab's general areas of current research are:

1. improving global access to biologic drugs used to treat cancers and inflammatory diseases, including manufacturing on demand;
2. developing approaches to understand B cell and T cell responses in autoimmunity (multiple sclerosis and Type 1 diabetes), vaccinology, and food allergy; and
3. understanding how rare cells can inform better drug discovery and patient care in cancer.

In the fall of 2013, the Love Lab received a \$10.4 million contract from the Defense Advanced Research Projects Agency (DARPA) to develop a way to make small batches of biologic drugs

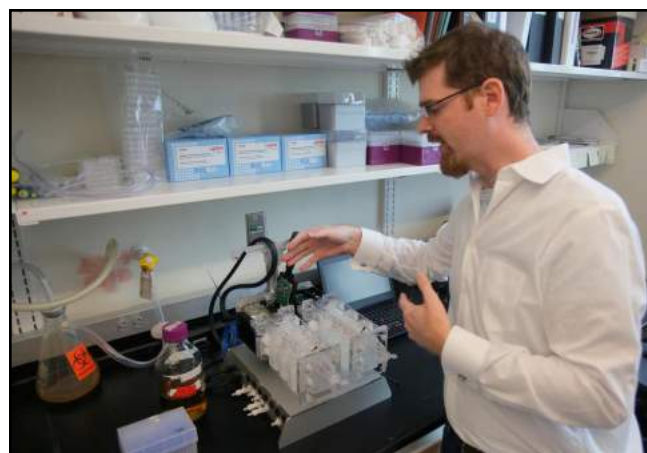
(drugs made from living cells, in this case yeast) in 24 hours versus the 6 to 12-month time-frame of current processes. The research team's goal is to create a tabletop drug manufacturing system that could be deployed virtually anywhere (prototype at right, picture courtesy *Boston Globe*). According to Dr. Love, the ability to make such drugs quickly, precisely, and on-site could revolutionize drug manufacturing the way 3-D printers are revolutionizing the manufacture of solid parts. In addition to being able to make drugs for soldiers wounded in action, the process could be used to produce specialized therapeutics for patients with rare conditions and to improve access in the developing world where cold storage and transportation issues limit drug availability.

Dr. Love obtained his Bachelor of Science degree in Chemistry from UVA in 1999 and his PhD in Physical Chemistry from Harvard in 2004. He then held a postdoc position in immunology at Harvard Medical School. Currently an associate professor in MIT's Department of Chemical Engineering, Dr. Love is also associated with the Koch Institute for Integrative Cancer Research at MIT, the Broad Institute of MIT and Harvard, and the Ragon Institute of MGH, MIT and Harvard. In 2010, he was featured in *Popular Science* as one of its "Brilliant 10," and has received numerous awards for teaching and scholarship.

While a TJ student, Dr. Love was already making headway toward a career in novel research techniques. As a summer intern at MITRE, he wrote a paper on theoretical designs for molecules that could act as electrical devices, later published as "Overview of Nanoelectronic Devices," *Proceedings of the IEEE* 85(4), 521-540 (1997). Dr. James Ellenbogen, Director of MITRE's Nanosystems Group, sent it to Harvard's Professor George Whitesides, the world's most cited living chemist, who five years later became Dr. Love's thesis advisor.

Dr. Love credits TJ's Mentorship Program with giving him an early opportunity to discover his passion and talent for research. "My experience at TJHSST provided both self-confidence and professional networking through the Mentorship Program that were instrumental in my development as a young scientist. I was encouraged to engage as a high school student directly in challenging questions in the field of nanoelectronics at its inception, and to develop a scientific curiosity that has continued with me in my career," he said.

In fact, in Dr. Love's opinion, there is no high school quite like TJ: "During my graduate training, I was working with, or at the same school as, about ten others from TJHSST. These individuals are now leading top research programs in biology, materials science, and chemistry, or are successful entrepreneurs in start-up companies. More recently, I hired a TJ '09 grad to work in my lab, where he spent a productive year before embarking on a PhD program at Harvard. I am not sure that there is a single high school program that has had as deep an impact on the current culture of academic research and entrepreneurship as TJ."





ALUM'S DC-AREA DATABASE START-UP HAS ARRIVED

SQL or NoSQL? That is the question. If you spend your workdays trying to answer questions like this one, then you are probably already familiar with *FoundationDB*, a Tysons-based tech company that offers a novel answer.

FoundationDB's solution is to combine the scalability and fault tolerance of NoSQL (a database mechanism for storage and retrieval of large quantities of data) with the strong data consistency guarantees provided by ACID (Atomicity, Consistency, Isolation, and Durability, properties that together guarantee reliability). The company's ambitious premise is that their database platform will serve as the foundation for the next generation of distributed applications and systems.

Lately, they seem to have a lot of believers. In November, 2013, the company received \$17 million in Silicon Valley venture capital, and a month later *Tech Cocktail DC* named *FoundationDB* one of "10 DC Startups Destined to Breakout in 2014," noting its "well funded, amazingly talented team . . . I don't think there is much stopping them from being an absolute monster of an enterprise tech company."

Following the December, 2014 release of its third-generation product, which it claimed "averages 14,400,000 random writes per second on a fully-ordered, fully-transactional database with 100% multi-key cross-node transactions," *TechCrunch* called it "impressive stuff . . . And obviously a great fit with the forthcoming Internet of Things, and the enormous amount of data that billions of connected devices will soon be constantly capturing."

Even if you're a developer who understands the issues -- many TJ parents and DC-area alumni are -- and are familiar with the company and its product, you still may not know that its Co-Founder and CEO David Rosenthal (pictured in col. 1, at right) is a TJ alum.

At TJ, Rosenthal and some friends created a computer game that won the grand prize at the 1999 Independent Game Festival. He credits that game with securing his admission to MIT, where he obtained a Computer Science degree in 2001.

One of Rosenthal's TJ '98 friends, David Scherer (col. 1, at left), was still an undergraduate at Carnegie Mellon University when he dropped out to found a start-up built around one of the first products that could create real-time web analytics. He brought Rosenthal in as his first employee. The start-up, *Visual Sciences*, acquired by *WebSideStory* and then by *Omniture*, was ultimately acquired by *Adobe* in 2008 for about \$1.8 billion.

When Rosenthal and Scherer started looking for a database on which they could build a new company they found a lot of the NoSQL databases inadequate. That's when they decided that their next venture would solve that problem. Together with a neighborhood friend of Scherer's, the two founded *FoundationDB* in 2009.

Two early hires were TJ grads, Ben Collins, TJ '01, and Ian Peters, TJ '98, both of whom happen to be married to TJ classmates. Coincidentally, Rosenthal is also married to a TJ grad. In fact, his 2008 wedding to Sloane Kuney, TJ '02, was featured in *The Washingtonian*, which noted that the couple's first date was an outing to view the "Transit of Venus" at a celestial observatory.

TJ connections were also helpful when it came to locating the capital to power their ideas. Classmate Howard Lehrman, Co-founder and CEO of *Yext* (profiled in the November 2013 issue), introduced the team to his contacts in Silicon Valley.

Rosenthal recognizes that TJ has played a major role in both his personal success and his company's success: "When I met a guy also named Dave in the back of my pre-calc class and realized that we

both liked to write computer games, I didn't think that it would turn into the two of us starting three software companies together over almost 20 years. But it did. The TJ connection has been a great part of staying in this area. Not only are TJ alums on our leadership team, but we've also had four TJ interns over the years. So, make friends. Some of the most capable people I know I met at TJ."



BAY AREA MEET-UP DRAWS OVER 100 ALUMS

Alums from all over the Bay Area and representing virtually all classes converged on the San Francisco offices of *Thumbtack*, a successful Internet-based start-up co-founded by Sander Daniels, TJ '01 (above, see May 2013 issue for more info), for an evening of networking and catching up.

Alums watched a video of TJ scenes put together by producer Jason Hintz Llopis, TJ '89 (see bio in December 2014 issue), heard briefly from Daniels, and hung out from 6:30 pm until almost midnight while enjoying food and adult beverages generously provided by their host, whose *Thumbtack* leadership team includes several other TJ alums.

As Daniels explained to everyone in attendance, the TJHSST Alumni Association is excited to start educating alumni about what's currently going on at the school and to get alumni more and more involved with the school and with each other. After the event, Daniels, who has hosted several past meet-ups commented, "People love coming to these -- they love TJ and all the friends they see and new people they meet here."

2004 REUNION, ALUMNI DAY BRING THEM BACK

Reunion Wrap-up: Reunion chairs Carly Rush (top picture, second row, far right) and Jackie Bello (front left), daughter of retired English teacher Judy Bello, organized two amazing events to coincide with Alumni Day and Thanksgiving weekend. The Class kicked off the weekend with a get-together in the private area of Clarendon's O'Sullivan's Irish Pub, hung out at Alumni Day, and got down to true reunion business on Saturday night.

The Saturday evening Main Event was held at the Josephine Butler Parks Center, a Renaissance-revival mansion that won *Best of D.C.'s Best Wedding Venue* for 2014. The mansion, located alongside DC's Meridian Hill Park near U Street Metro station, was packed with happy alums dressed their best and enjoying hors d'oeuvres, desserts, an open bar, music, photos, and plenty of catching up. The fired-up Class of 2004 surely set the standard for 10th reunion attendance. They're also an impressive group, with accomplishments in all areas, from service to athletics (facing page).

Alumni Day in Brief: Drawn by the chance to visit their old hangouts for the last time and the exciting opportunity to tour the brand new Research Lab Wing and Chemistry/Geosystems Wing, 170 alumni descended upon their *alma mater* on the Saturday after Thanksgiving for the annual Alumni Day.

Alumni learned who they had chosen as this year's Alumni Stars and which teachers they had elected into the TJ Teacher Hall of Fame (below). There were boxed lunches and TJ logo merchandise, courtesy of Colonial Athletic Boosters, available for purchase. As always, the main attraction, in addition to the new labs, was the faculty who showed up and, of course, each other.

Teacher Hall of Fame

- | | |
|----------------------------------|-----------------------------------|
| Dr. Omar Acio (2012) | Dr. John Liebermann, ret. (2014) |
| Mr. Luc Beeckman, ret. (2013) | Mr. Don Majeske, ret. (2012) |
| Mr. Gerry Berry, ret. (2012) | Mr. Patrick McCarthy, ret. (2012) |
| Dr. Paul Cammer, ret. (2013) | Mr. Dennis McFaden, ret. (2012) |
| Ms. Genevieve Delfosse (2014) | Mr. Ed Montgomery, ret. (2013) |
| Dr. John Dell (2012) | Ms. Barbara Nelson, ret. (2012) |
| Ms. Pat Gabriel, ret. (2013) | Ms. Mary O'Brien, ret. (2014) |
| Ms. Carolyn Gecan, ret. (2012) | Dr. Jonathan Osborne (2014) |
| Ms. Pat Groves, ret. (2012) | Mr. Jim Rose, ret. (2013) |
| Ms. Jane Gullickson, ret. (2012) | Ms. Bettie Stegall, ret. (2013) |
| Ms. Lee Ann Hennig (2014) | Mr. John Struck (2013) |
| Mr. Jim Jarvis, ret. (2013) | Mr. Michael Stueben (2012) |
| Mr. Jay Lamb, ret. (2012) | Dr. Shane Torbert (2014) |
| | Ms. Milde Waterfall, ret. (2013) |



There were far too many attendees for any one space in the mansion to accommodate them all, but that didn't stop the crowd from squeezing onto the second-floor landing for an attempt at a class picture.



Sonya Hsieh, Christine Park, Jennifer Luu, Juliana Schroeder, and Clare Murphy Konrad smile for the camera.



Dan Kuebrich, Ran Liu, and Erik Silk pause between conversations.



Clockwise from left: Owen Thomas '90 bro-hugs brother Peter Thomas '88; alumni listen to Alumni Day presentations in Gym II; Astronomy Lab Director Lee Ann Hennig welcomes a visit from former Astronomy research lab student Catherine Witherspoon, '13; alumni tour the JUMP (Jefferson Underclassmen Multidiscipline Projects) Lab, which gives non-seniors a place to conduct research during 8th period.



CLASS OF 2004: SOME ALUMS TO WATCH

Joyce Meng:



While a student at the University of Pennsylvania, Meng founded *Givology*, a 100% volunteer-run online giving marketplace for education. With

seventeen chapters around the world, *Givology* links interested donors to initiatives such as teacher training, library construction, and textbook purchases.

In addition to serving as CEO of *Givology* since its founding six years ago, Meng is a co-founder of *Generation Enterprise*, a non-profit aimed at teaching low-income youth the skills they need to launch their own businesses, and a co-founder of *Vernier Capital*, a global hedge fund. Meng, recognized by *Forbes* magazine as one of its "30 under 30 in Education" for 2014, is also one of eight TJ graduates to study at the University of Oxford on a Rhodes Scholarship.

Nick Meyer:



Meyer is co-founder and Chief Technology Officer at *Sup*, an iPhone app which lets users direct -- by swiping or using other cues -- a ten-second video in

which their friend, at the other end of the phone, is the lead actor.

An earlier app co-founded by Meyer, *Milewise*, was acquired by *Yahoo* in May, 2013. The app, which helped serious travelers find the least expensive flights -- whether they were paying cash or using frequent flyer miles -- was dissolved when the leadership team joined *Yahoo*'s NYC office where Meyer met his *Sup* co-founders.

Meyer is known in tech circles as one of four '04 alums who created the massively multiplayer online strategy game *Kings of Chaos* in their junior year at TJ. The others are Rocco Repetski (DC area engineer), Ben Gelb (hardware engineer at *Google*), and Aman Gupta (VP of Technical Infrastructure at *GitHub*).



Kathryn Minshew: Minshew is founder and CEO of *The Muse*, a website that serves as a career-development platform for millennials and digital natives, with

job postings, online classes, an inside look at companies that are hiring, and *The Daily Muse*, its daily publication.

Named twice to *Forbes*' "30 under 30 in Media" and to *Inc.*'s "15 Women to Watch in Tech," Minshew has appeared on *The TODAY Show* and *CNN*, and contributes to the *Wall Street Journal* and *Harvard Business Review*. Before founding *The Muse*, she was a management consultant at *McKinsey & Co.* and worked on bringing vaccines to Rwanda and Malawi as part of the Clinton Health Access Initiative.

Vlad Tenev:



With his Stanford roommate, Tenev co-founded *Robinhood*, an iPhone app available since December, 2014 that allows individuals to invest in publicly traded

companies without paying a commission. The company, which has raised over \$16 million in start-up capital, has been covered widely in the financial press for its disruptive potential and ability to bring younger, less wealthy investors into the market.

The pair's first financial services start-up, *Celeris*, allowed them to apply their significant quantitative skills -- Tenev was working towards his PhD in math at the time -- to perfecting trading algorithms. Their second, *Chronos Research*, worked with major investment banks.

Dan Shin: CEO of *Ticket Monster*, one of South Korea's biggest online businesses, Shin was featured in the last issue of this newsletter (see December 2014).

Chris Mocko: Product Editor at *Square, Inc.*, former Product Manager at



Intuit and creator of a successful *Facebook* app, Mocko is best known for his athletic feats. In 2012 *Mashable* named him one of the "35 Fittest People in Tech."

A Division I cross-country and track standout at Stanford, Mocko is one of the nation's elite distance runners. With wins at the Oakland Marathon (2012), Napa Valley Marathon (2011 & 2012, 2nd in 2014), and San Francisco Half-Marathon (2013 & 2014) under his belt, he is currently training for the 2016 Olympic trials.

Neil Arora: Fluent in Mandarin, Arora has lived and worked in Beijing since 2009.



Currently President of Momi Bay Group, which focuses on US/China investment opportunities, he was previously Vice President at CSC

Group, where he was the sole Westerner and the youngest vice president in the history of the \$10 billion, 600-person Chinese private equity fund, one of the largest in China.

Gary Shambat:



Shambat, who earned his PhD in Electrical Engineering from Stanford on a National Science Foundation Fellowship, has developed both

extremely low power lasers and extremely high-speed LEDs, and demonstrated for the first time sophisticated optical devices operating inside biological cells for sensing applications. Shambat, who now works for a Bay Area tech start-up, has seen his research featured in *wired.com*, *Forbes* magazine, and the *SF Chronicle*.

START-UP BROTHERS GOT THEIR START AT TJ

In 2009, **Sam Odio, TJ '03** (pictured at right), headed West to pursue his tech dreams, where he went through *Y Combinator*, the best-known Silicon Valley start-up accelerator, and started a company that was acquired by *Facebook*. At least that's the short story, as told by his older brother, Daniel (pictured below), the other serial entrepreneur in this high-powered TJ family.

The longer story begins at TJ, where in his senior year Odio founded *OdioWorks* as a budget competitor to *Geek Squad* and similar computer consulting firms that at the time were charging \$70-\$80 per hour. His older brother Daniel was instrumental in encouraging him. As Odio puts it, Daniel said, "Sam, we're going to do this in a day. We're going to get this company registered. We're going to get you some press. I'm going to teach you how to market your business. You'll take it from there."

Odio brought the computer consulting business with him to UVA, sold it, and keeping *OdioWorks* as the name of the parent company, started *DinarProfits.com*, a currency exchange business so profitable that it paid for his education -- concurrent Bachelor's and Master's degrees at UVA's McIntire School of Commerce -- and gave him the capital to start his next venture.

Odio's breakthrough success, *Divvyshot*, was a photo-sharing site for high-resolution photos, launched to 1,000 users in March, 2009. *Divvyshot* was heralded as the cleanest photo sharing site of its generation when it was acquired by *Facebook* a year after its founding. However, *Facebook* was looking for more than the technology. "Buying *Divvyshot* is a talent acquisition for *Facebook*," *TechCrunch* explained in its April, 2010 article on the deal. "Founder Sam Odio and the two other *Divvyshot* team members will be joining *Facebook* and working on *Facebook Photos*, which is the largest photo-sharing service in the world."

After only a year at *Facebook*, where he implemented facial recognition tagging, among other innovations and improvements, Odio left to start his next business, *Freshplum*, which he founded with a partner in 2011. *Google Ventures*-backed *Freshplum* gives online businesses an alternative to promotional codes shoppers use to obtain discounts. In contrast to those codes, typically used by existing customers or those likely to purchase without the discount, *Freshplum's* promotions offer exclusive discounts to visitors who look like they wouldn't otherwise make a purchase.

In 2014, online advertising powerhouse *TellApart* acquired *Freshplum* and its team so it could deliver those personalized offers through retargeted *Facebook*, display, and email ads that follow potential customers after they leave a shopping site. According to a July, 2014 *TechCrunch* article, "*Freshplum* figures out who to target with what deal, and *TellApart* tracks them down across the web."

Daniel Odio, TJ '94, attended UVA's business school nine years ahead of his brother. After spending a couple of years using his fluent Spanish and Portuguese to help *General Electric* open offices in Argentina and Brazil, he decided to start his own business. He founded both a tech-savvy commercial real estate brokerage and a residential brokerage that disrupted the DC area industry by offering generous rebates to buyers.

After selling the real estate companies, Odio co-founded an app platform startup called *PointAbout*, which with its product *AppMakr* built the *Washington Post's* first *iPhone* app, *Newsweek iPad* app, and many others. It was at that point that Odio realized he would need to follow his younger brother to the West Coast in order to more easily attract venture capital.

AppMakr's growth led to Odio's most recent startup, *Socialize*, which created a "Social SDK" (software development kit) that allows app developers to add social features to their mobile applications such as likes, comments, shares, and ways to view other users' in-app activity. This not only allows users to connect with each other but also connects the app with its user base. *ShareThis*, which was providing the same service to web developers but lacked a robust mobile platform, acquired *Socialize* in March, 2013. Odio is now Senior VP of Strategic Partnerships for *ShareThis*, where he continues to work with his *Socialize* team, and *Socialize* is now in over 900 apps, with over 67 million users.

"TJ was absolutely instrumental to me. I had all sorts of 'start-ups' when I was at TJ," Odio said. For example, he purchased and resold parking spaces in nearby residents' driveways, and purchased and resold candy to fellow riders on his Herndon bus. Several years ago he made a couple of appearances at tjSTAR (TJ's research symposium, which often features alumni), where he gave students simple resale ideas they could implement in order to find out whether they too were cut out for business.

Now, Odio is hoping to be able to give back in a more significant way, by helping to organize seed funding and mentors for would-be student entrepreneurs. He recently started a conversation on the TJHSST Alumni Facebook page to encourage entrepreneurship at TJ. "Here's my opening idea: What if a bunch of alums became LPs to a 'microlending' 8th period club at TJ?"

Anuraag Yachamaneni, TJ '16, Co-President of StartupTJ, responded immediately, followed by Mayank Jain, TJ '12, whose coding event start-up began with *HackTJ* (see June 2014 issue). Jain brought in Robbie Clark, TJ '12, who is forming a club at UVA to educate students about the venture capital process and invest in early startups from the UVA community. Odio immediately set up a *hackpad* (similar to *GoogleDocs*), invited a dozen alumni entrepreneurs, including his brother, added Anuraag, Clark, and others, and the conversation began. From the looks of it, Odio is making things happen again, this time for TJ.



GOT TURF? WHY THE CAMPAIGN FOR TJ IS RAISING FUNDS FOR TURF FIELDS**Q: Why does TJ need turf fields?**

A: Unlike fragile grass fields, turf allows for play in most weather conditions. Installing turf at TJ will ensure that our football, soccer, lacrosse, and field hockey teams, as well as our award-winning marching band, get more valuable practice time. It will also keep more games at home. Turf also helps meet the shortage of reliable community field space, which is one reason that the County supports installing two turf fields (when space permits) at the few remaining high schools without them.

Q: When will our turf fields be installed?

A: We hope that the stadium turf field will be installed during the summer of 2016. If the County is not able to work that installation into their schedule, then we will get both fields the following summer at the completion of the renovation.

Q: What contribution is expected from the TJ community?

A: The task force report recommended that the TJ community contribute 25% of the cost of two new turf fields. The average cost of installing one field is \$800,000, so we must raise approximately \$400,000.

Q: What about bathrooms?

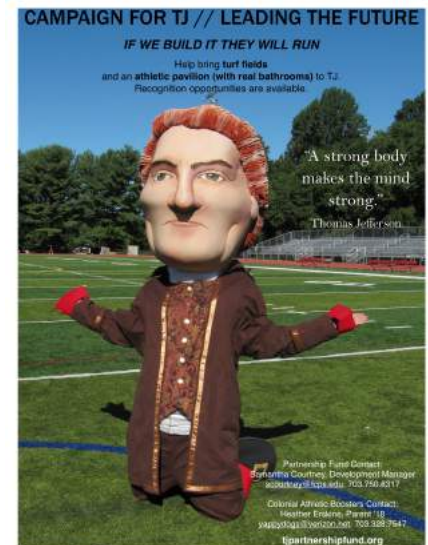
A: TJ's playing fields are located a good distance from the school building but are equipped with only portable toilets. This embarrassing inconvenience easily could be remedied by the construction of an athletic pavilion with indoor bathrooms and an improved snack bar. The cost of such a pavilion is estimated to be \$250,000 to \$350,000, depending on exact site and building specifications, and must be funded entirely through private contributions.

Q. What can I do to make these important improvements a reality?

A: **Donate.** Because a percentage of all Campaign for TJ gifts automatically supports athletic needs, the Campaign has already raised over \$250,000 toward athletics. If donating at the \$1,000 level or above, you may direct your donation to athletic needs. Donations and pledges may be made online or by check. **Help the Athletic Boosters turf TJ.** Contact Mindy Conway, CAB "Turf TJ" Chair at minconway@verizon.net or Heather Erskine, CAB/Partnership Fund Liaison at yappydogs@verizon.net

Q: Can my company place its name on the athletic pavilion or at one of the turf fields?

A: Yes. You can get your company's name in front of the next generation of leaders through a gift to the Campaign for TJ. (For a non-tax-deductible fee, companies or small business owners may hang an advertising banner on the fence around the stadium field.) To discuss these and other opportunities, or anything related to the Campaign, please contact Partnership Fund Development Manager Samantha Courtney at scourtney@fcps.edu.

**CAMPAIGN FOR TJ GOLF TOURNAMENT
A GREAT TIME FOR A GOOD CAUSE**

Come out and support TJ athletics by participating in our second annual Campaign for TJ Golf Tournament, held this year on **April 6, 2015 at Reston's Hidden Creek Country Club.** Colonial Athletic Boosters and the Partnership Fund co-host the tournament, bringing parents, corporate partners, and alumni together for a fabulous day of friendly competition.



In addition to the excellent 18-hole course, carts are provided, along with breakfast, snacks and sodas on the course, followed by a buffet dinner. Members of TJ's champion Varsity Golf Team (right) will be available for putting and Par-3 contests. Raffles, prizes, and a silent auction round out the fun.

Register online at: <http://events.constantcontact.com/register/event?llr=wjjx5flab&oeidk=a07eai0s2bw62bc2804>

To sponsor (or register by mail): <https://files.ctctcdn.com/635abebc201/52f17d1c-7802-4eeb-b03c-bd8bc6f89754.pdf>

TJ Community Events

Diwali: The third annual TJ Diwali Celebration drew the largest crowd to date. A fantastic multi-course buffet provided at cost by Mayuri Restaurant and a Namaste I-Nite preview were the highlights of an evening that included plenty of dancing to the DJ's traditional and modern mix.

Diwali Committee ("DC," top): Front row, from left, Jay and Natasha Marwaha, Parents '10, '18, Hosts; Medha Gupta; Shiraz Chokshi, '17; Joya Bhattacharyya, '17; Dhruv Gupta, '16, Namaste President; Divya Gupta, Parent '16; Megha Chokshi, Parent '17, PF Events and DC Chair. Behind from left, Hilde Kahn, Parent '12, '14, '17, PF Communications; Nags Arkalgud, Parent '15, DC; Manmohan Gupta, Parent '16; C.Kotnana, Parent '18, DC; (not pictured, Ashok Anant, Parent '17, PF Volunteer Chair and DC).

Lunar New Year: The second annual TJ Lunar New Year Celebration was a Sunday brunch featuring performances, prizes and informative speakers: A TJ administration panel answered a variety of questions, an alum told students how to make the most of their time at TJ, and a junior/senior panel provided perspective and advice to a crowd that included many freshman families. Over 350 parents, students, alumni, family members, and special guests attended, 100 more than last year!

Lunar New Year Planning Committee (bottom): Front row, from left, Danielle Zhu, Parent '16, '18; Yuyan Zhou, Parent '16; Nancy Yang, Parent '17, '18; Jerri Xu, Parent '17, Lunar Planning Comm. Chair; Hilde Kahn, Parent '12, '14, '17; Lan Fan, Parent '17, '18; Thuy Nguyen, Parent '16, '18; Yan Liu, Parent '18; Behind, from left, Peter Zou, Parent '17; Stan Niu, Parent '17 (not pictured, Hai Yan Wu, Parent '16; Weiwen Chen, Parent '18).

tjSTAR Reception

**Thursday, June 11, 2015, 6-8pm
Hilton Hotel Tysons Corner**

Join research faculty and school administrators, corporate partners, alumni, parents and friends of TJ as we celebrate student research and honor this year's Tommy Award recipients.

Enjoy a taste of tjSTAR (TJ's own science and technology research symposium, held this year on June 9th) as select students representing each of our 14 labs explain their research projects.

Watch your email for an invitation to this very special annual event.



Celebrating Diwali
November 15, 2014
Home of Jay & Natasha
Marwaha, Parents '10, '18
McLean, VA



Celebrating Lunar New Year
March 8, 2015
China Garden Restaurant
Rosslyn, VA



Research Wing Open House

Friday, January 9, 2015, 5-7 pm
TJ's New Lab Wing

Over 200 guests, including alumni and parents of alumni, current parents, and members of the local corporate community, came out on a frosty afternoon to see TJ's brand new research lab wing.

Guests could choose whether to join one of several tours led by Jefferson Society tour guides or stroll through the labs at their own pace (a Korean language tour was also offered). Lab Directors were on hand to discuss current projects, and in the Prototyping Lab a vendor demonstrated the speed and accuracy of his company's industrial-grade router, cutting a programmed shape out of plywood four times, one after the other, in a total of two minutes, instead of the hour that students using earlier machines would have taken. Partnership Fund volunteers mingled with guests, answering questions about recent acquisitions and future needs, while everyone enjoyed hors d'oeuvres and soft drinks.

Middle pictures: Assistant Principal Scott Campbell with Srikant Sastry, Parent '17, Partnership Fund Board Chair; Principal Evan Glazer with Assistant Principal for Science & Technology Tinell Priddy.

If you missed last November's Ribbon Cutting and the January Open House, but are anxious to see the new labs up close, don't despair. There will be additional opportunities to tour both the Research Lab Wing and the new Chemistry/ Geosystems Wing, dates and times TBA.

TJ could not fulfill its mission without the voluntary contributions of parents, grandparents, friends, alumni, and corporate partners. To learn how you can support TJ through the Partnership Fund, please visit us at tjpartnershipfund.org, or contact Development Director Aristia (Tia) Kinis at akinis@fcps.edu or 703-750-8317.

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