

# Natural Selections

A NEWSLETTER OF THE ROCKEFELLER UNIVERSITY COMMUNITY

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**Natural Selections  
wants your art!**

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## Culture Corner

*Film and the Tyranny of the Repeating Day: Edge of Tomorrow and Groundhog Day*

BERNIE LANGS

“Carpe Diem” or “Seize the Day” is the banal, clichéd rallying war cry that commencement speakers send off the graduating classes of universities into the world. Yet once in the rhythm of the work day, we very quickly learn that it is the day that seizes us, with its unvarying and very precise routines. In truth, college too is broadly scheduled, and I’m reminded of a school pal who would meet me in the cafeteria and while dressing his lunch would glumly announce “12:16, time to put the ketchup on my hamburger” for weeks on end. I now marvel that as I leave work, I turn a street corner and see local construction workers descending a ladder each day, and within four minutes, the same two women will pass me by on the street. It’s like clockwork.

Civilization’s intellect and spirituality can be said to have been based on relentless repetition and what that meant in the past for everything from growing of crops to preparing for bitter cold or sweltering heat. Early religions responded with homage to these cycles and Nature for its seasonal brutalities which they would try to appease by offerings of sacrifices and wine, the fluid of life.

As inevitable as the characteristics of the four seasons, our daily routines can be unvarying for years and years. In the brilliant film “Groundhog Day”, directed by Harold Ramis and starring the comically sublime Bill Murray, an acerbic, sarcastic, basically miserable weatherman becomes subject to living February 2nd over and over again. Each day he wakes up in Punxsutawney, Pennsylvania to cover the quaint local Groundhog Day ceremony with its famous ritual of pulling a groundhog from a cage to determine the length of the remaining winter. The movie is often hilarious, but many deeper meanings and philosophical undertones slowly reveal a struggle by its protagonist that can resonate with all of us.

At first, Bill Murray will go to any lengths to escape waking up again to the sound of his clock radio playing Sonny and Cher’s “I Got



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You Babe” accompanied by the inane banter of local disc jockeys, as the viewer ponders his own morning routines. Murray even goes to the extreme of a multitude of ludicrously planned suicides to escape his woe. There is an eventual epiphany, beautifully beginning with Bill Murray reading a book in the local diner and just looking up to marvel at his surroundings.

In contrast, Tom Cruise, in the science fiction adventure “Edge of Tomorrow” directed by Doug Liman, faces a repeating day of violent death in a battle with an army of machine or insect-like aliens on a beach resembling the D-Day scene in Steven Spielberg’s “Saving Private Ryan.” Cruise’s character is trying from the get-go to escape his death and is taught that if he does win out, it will mean a victory for the armies of Earth against the aliens and the redemption of the whole world.

When “Edge of Tomorrow” was released in

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2014, I laughed off any thought of seeing the movie, since in the promotions Cruise and his co-star the fabulous Emily Blunt bandy about in large, super-hero armor as they fight this computer-generated enemy. The film is currently available on cable movie channels and I've now watched it three times. Cruise's mission to escape his repeating day sails far above any comic book notions. He and Blunt's rugged determination to win this war is a tale of ferocious pursuit in the name of "The Good."

So if Bill Murry and Tom Cruise, the latter who's killing of a rare alien-type makes him the one whose life "resets the day", battle a mind-numbing repeating theme in their lives, how can we fight back against our often tiring routines that roll around each day? As we grow older and time accelerates, how do we accept that we are still a prisoner of the seasons, which bring us such things as snow each year without mercy or the banal jingles time and time again at Christmas season? After laughing off "Seize the Day" how do we regroup and actually grab life by the throat?

While I was at college, I took an introductory course in philosophy where one of our first assignments was to muse on an essay by Schopenhauer that asked that if we had a chance to do an action again in life, would we be able to do it differently. The argument being that since all the forces that bring us to the moment would repeat, we too would have no choice but to repeat our action, that our response is completely set. I recall noting that in the end of Schopenhauer's study, he gets into



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the eternity of a moment in time and if there is truly a concept of "free will" we would not be bound by the repeating parameters, but could choose a different path and response within a moment that is essentially "timeless."

I believe that one must seek the adventure in life, that we must pursue what is extraordinary within the shackles and constraints of numbing routine. Adventure is what you choose to find and rather than deferring to the constraint of Shakespeare's idea that all the worlds' a stage and people we see are its players, it is more an elaborate chess game set on a Cartesian grid, where although there are many factors in individuals, places and

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events, we are still free to move our pieces and if not gain a difficult win, play to an extremely satisfying "draw."

Perhaps some invisible Creator did set this cyclical world in motion, and the last thing He/She/It (or whatever it is) did was to give the creatures that would eventually be shaped in the system the power of free will before, like Elvis, it "left the building" and moved on. We still own the power to "reset the day" and it is our responsibility to run with it and rise to the occasion as the heroes and heroines of our own stories.

Each morning as I approach my train station and I see the same people, standing in the very same spots they have stood every day for months on end, I'm tempted to smile and ask one of them "Going to see the groundhog?" ■



Whether you can't stop drawing while waiting for the bus, or taking a walk around the city; if photography is your passion, or if you're more of a painter, this is your chance to share your art. Beginning in 2016, *Natural Selections* will publish a picture of the art we receive every month. To take advantage of this opportunity, email us your work with a title, a brief description, and your name. We'll make sure to include it in a future issue. We hope to receive several images to create an open space for art!

We'll be delighted to receive your artwork, please email hi-res image or vector files to : [nseditors@rockefeller.edu](mailto:nseditors@rockefeller.edu)



# Twenty-four visits to Stockholm: a concise history of the Rockefeller Nobel Prizes

## Part XIV: George E. Palade, 1974 Prize in Physiology or Medicine.

JOSEPH LUNA

Nestled in the 3rd sub-basement of Smith Hall, around 1953, an electron microscope (EM) is briefly idle. The machine, an RCA model EMU-2A, resembles a spare part from some future space station: a long vertical steel tube adorned with studs and knobs, with a viewfinder at the base. To the casual viewer, there's little to indicate the purpose of this strange contraption. But to its operator, just having imaged the last specimen of tissues ranging from the pancreas to blood cells to the intestine, the purpose of this machine is strikingly clear, and is measured in Angstroms. The man sitting at the controls is George Palade, and he has just discovered "a small particulate component of the cytoplasm," as he tentatively named it. In a few years, this particle would be renamed the "ribosome" and would soon be recognized as the essential protein-making machine in all of life.

Of course, such a romantic view of discovery relies squarely on hindsight, for it is almost impossible to pinpoint where one is during a scientific revolution in real time. This was certainly true at the beginning of modern cell biology, as the specimen preparation methods used for EM carried with them the specter of artifact. In essence, how did George Palade know that these particles weren't a farce? The preceding seven years had done much to prepare Palade to address this question. Alongside Albert Claude, Keith Porter and others, Palade placed the nascent field of cell biology on sound methodological footing that enabled the discovery of the ribosome, and so much more.

In 1946, barely a year from the first EM picture of a cell, Palade joined the Rockefeller Institute as a postdoc, at Claude's invitation. When Palade got his start, Claude's group was concerned with trying to connect enzymatic activities that biochemists could measure, with a physical location in the cell

that could be accounted for by fractionation or using new EM methods to see what the ultrastructure looked like. Claude and his co-workers were able to break cells apart into roughly four fractions that could be subjected to biochemical tests: nuclei, a large fraction that appeared to contain mitochondria, microsomes, and free cytoplasm. The large fraction caught their attention precisely because there was a problem. In intact cells, mitochondria could be stained with a dye called Janus Green, but the dye never worked in the large fraction, despite EM results that showed intact, though clumped, mitochondria. Moreover, biochemists had found that the large fraction contained many of the enzymes known to be involved in energy production, but this fraction wasn't pure enough to make firm conclusions. Palade helped to clarify this issue by devising a better way to isolate pure mitochondria using dissolved sucrose (table sugar) as an isotonic buffer instead of the saline solutions used by Claude. As a result, the large fraction retained Janus Green staining, and energy making enzymes were much more enriched. It was an instructive experience because it showed that cells could be taken apart rationally, a bit like taking apart a radio with a screwdriver instead of with a sledgehammer. Intact, functional units like mitochondria could be separated and studied apart from other cell components. For these early cell biologists, it was a compelling justification to keep going.

This much was evident to Institute president Herbert Gasser. With Claude's move back to Belgium in 1949, the retirement of lab head James Murphy in 1950, and other departures, the first Rockefeller cell biology group shrunk to just Porter and Palade. Gasser made the rare move of making them joint lab heads of their own cytology laboratory, and outfitted Smith hall with an RCA microscope.

Porter and Palade next made a concerted effort to describe, in intact cells and tissues, the ultrastructure of the mitochondria and a subcellular structure found in the microsomal fraction that Porter named the endoplasmic reticulum (ER). While Porter working with Joseph Blum, devised a new microtome to make thin slices of tissue for EM, Palade refined fixation and staining conditions (colloquially called "Palade's pickle procedure") to take EM to new heights. Using these tools, Palade went on to describe the inner structure of the mitochondria, observing inner folds and chambers he called cristae. The Palade model of the mitochondrion was illuminating for biochemists, because it provided structural constraints for possible mechanisms that explained how mitochondria made energy. In other words, what a mitochondrion looked like was essential for its function.

This line of thinking was critical to deciphering what role, if any, of those particles Palade observed in 1953. He noticed that they were typically observed stuck to the ER, were enriched in the microsomal fraction, and had high levels of RNA. He also noticed that secretory cells, such as digestive enzyme producing exocrine cells of the pancreas were packed with ER and ribosomes. In short order a hypothesis emerged, from Palade and others, that ER and ribosomes were involved in the synthesis and ordered transport of proteins in the cell. Working with Philip Siekevitz, Palade used radioactive amino acids to biochemically trace protein synthesis and transport in these cells, following the radioactivity in cell fractions, and using EM to visualize structure in each fraction; all in a seven part series of papers between 1958 and 1962. This triple threat of cell fractionation, biochemistry, and EM became the model for the entire field. EMs the world over have since rarely been idle for long. ■

## QUOTABLE QUOTE

*"In a world more and more polluted by the lying of politicians and the illusions of the media, I occasionally crave to hear and tell the truth... Friendship is by its very nature freer of deceit than any other relationship we can know, because it is the bond least affected by striving for power, physical pleasure, or material profit, most liberated from any oath of duty or of constancy."*

-Francine du Plessix Gray, 1930

# Dear NYC, I Love You: *Why I Decided to Run the New York City Marathon*

NAN PANG

July 23, 2012—that's the oldest record that I can find in the running app on my phone. Distance: just under two miles. Back then, I could probably never have imagined that I would be running the 26.2 miles of the New York City Marathon three years later.

Running was never my strongest suit. In college, I only ran a few laps around where I lived because my primary care physician told me to. Usually after I hit two miles, I was quite exhausted. Running was nothing but a chore and losing motivation was the obvious consequence. So I had become accustomed to running two miles at a time and never thought about running more. One day, I noticed that somehow I managed to complete my chore run without losing my breath. "Oh, maybe I can run longer," I thought.

From that day, three-mile runs became my routine. When I moved to New York after college, I started to run in Central Park. It was a rather eye-opening experience. Since then, running in Central Park has become my addiction. Things like the sunrises over the reservoir, the summer fireflies in the twilight, and countless other fellow runners have kept my motivation high. It did not take me long to feel that I wanted to do something more; so, that year, I signed up for a three-mile race for the first time.

Fast forward a year. I now had a bunch of 5-10K races and several half-marathons under my belt. I won a spot in the New York City Marathon, via the lottery. Entering the New York City Marathon was partially due to my sheer spontaneity and recklessness. Actually, I was not confident at all that I could run the entire 26.2 miles, but I thought why not give it a try. Perhaps I wanted to prove something to myself that I could. Because from what I heard, running through all the five boroughs of New York City was supposed to be an unforgettable experience; and it really was.

On marathon day, I left my apartment on the Upper East Side at 5:30AM, wrapped up in my friends' warmest words of encouragement. Nobody was on the street, but from the moment I stepped in-



ROBYN SPECTOR/ROBYN SPECTOR MEDIA

side the subway station, spotting my fellow marathoners was not too difficult. A guy who probably was coming back from his Halloween party asked me if all the express trains were running local. I said yes. Then he asked me if I were running a marathon. I said yes again with a nervous nod.

"I could never do that! Good luck!" he said.

"Thank you, Mr. Indiana Jones," I thought.

I was supposed to take the 6:15AM Staten Island Ferry. Obviously, the terminal was packed with hundreds of runners and I had to wait to take the next ferry. I had taken the ferry a few times before, so I decided to skip being a tourist and sat in the corner to catch up on some sleep.

"Hey, are there any outlets on your side? Need to charge my iPod." the guy next to me asked. He was probably around

my age. I couldn't find any outlets, but then we started chatting. "I'm Garrett, by the way" he said.

Garrett and I had different start corrals but it was pretty comforting and relieving to have company. It was quite a wait from the time I entered the designated corral to the starting line, but the time eventually came.

"So it's finally starting," I thought.

While I walked to the starting line, I suddenly got somewhat nervous and overwhelmed by the number of runners, but my nerves quickly diffused as I discovered that I was filled with anticipation for what I would discover and experience for the next three hours.

The race started at a little after 10:15AM. When I was crossing the Verrazano Narrows Bridge from Staten Island to Brooklyn, I could see the skyline of Manhattan. The wind was a little strong, but it did not bother me.

Running through Brooklyn and Queens was not too tough. The energy was great and I enjoyed the sideline performers at every mile. As I high-fived many kids and often received candies and chocolates from them, I thought I could run forever. But things changed a little when I was crossing the Queensboro Bridge. Suddenly all the cheers stopped, and the only things I could hear were the howling of the wind, the runners' heavy breathing, and my rapid heartbeat. Under the shadows, the wind gradually took my body temperature away, and I was desperately trying to fight my way off of the gloomy everlasting bridge. Without a doubt, it was one of the toughest moments for me throughout the course.

As I kept running towards the end of the bridge, I saw a light at the entrance to 59th Street. It was small in the beginning, but the moment I stepped into Manhattan, the air of excitement from the spectators struck me one by one like continuous heat waves. I stored my energy and ran north along First Avenue. Some of my close friends told me to expect them around 96th Street. When I finally saw those familiar faces holding huge posters and cheering for me, I was pretty much speechless. We had a big hug and I quickly started to run again, onward to the Bronx. It had been about twenty miles from the starting line when I hit the Bronx, and I noticed that more and

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more people started to walk. Still, I tried not to focus on them and maintained my motivation.

By the time I arrived back in Manhattan again, I felt like I could easily stop at any time. Although there were just about five more miles to go, my lungs were in pain, my ankles were getting tight, and my toenails were probably bleeding. The last several miles along Central Park made me feel as though I was running the victory road to the greatest triumph in the world. Inside, I was having the most severe combat with my own willpower. "If I could keep running, I win; if I stop, I lose," I thought.

Everything was pretty vague during the last few miles, but I do remember the last mile as if it just happened a minute ago. Multiple waves of goose bumps hit me when I began to see a series of flags waving in the air near the finish line: it was indeed a victorious moment. Those early morning runs, numerous struggles, and hectic trainings paid off. When I crossed the finish line, I thought I won: I proved something, not to anyone else but to myself. The entire race was a competition against myself after all, and I definitely felt that I had won.

I once thought running a marathon was something I would never do, if not impossible. Running a 3K race back then was quite a challenge; but then, there were those moments when I did my first 5K, 10K, and then a half marathon. After completing the 26.2-miles, I must say that the journey was not easy. Determination to challenge my limits, perseverance to endure the pain, and a little bit of courage and cheers from friends and family along my endeavor have made me run thus far.

New York City embraces the most incredible people and provides such an opportunity to encounter the richest cultural diversity. Running across the city reminded me of that once again. Every spectator and volunteer I met gave me the feeling of acceptance and benevolence. That is a feeling I want to hold onto and, for that reason, I will run the marathon again next year.

Several people have asked me why I ran the New York City Marathon. Why? Because I wanted to know my maximum potential. Because I wanted to feel the excitement. And most of all, because I love New York. ■



IAN BROWN/Wikimedia Commons

Days and weeks before the festive day of Diwali, lights are hung around houses, office buildings and retail centers. Above is a retail center with trees and shop fronts in festive lights.

## Diwali: India & Beyond

SARALA KAL

Home to twenty-two different languages and seven different religions, a festival is always being celebrated somewhere throughout the Indian Subcontinent. Diwali, however, is one of the few unique holidays celebrated by everyone in the country, regardless of region, religious belief, or caste. Also called Deepavali, the festival is not only celebrated in India, but also in Singapore, Malaysia, Fiji, Suriname, Sri Lanka, Nepal, Mauritius, Myanmar, Trinidad & Tobago, and Guyana. Though the historical significance behind the festival differs across each region and religion, everyone sanctions and celebrates the triumph of good over evil in splendor and grandeur. Communities also take this time to reflect, meditate, discover their inner strength, absolve any sins, and create a new beginning filled with light, love, and peace.

The historical significance of Diwali originates from the many grandiose myths, legends, and folklore of India. The polytheistic nation believes that each god or goddess signifies a particular role to ward off evil and offer protection and solace. With wide-eyed enthusiasm, children of the south learn about the indestructible demon Narakasura whose head is cut off by Lord Krishna, and the celebration of peace ensued named Deepavali. The northern parts of India offer their salutations and reverence to the Goddess Kali whose strength and energy epitomizes the battle between creation and destruction. Her defeat over the forces of destruction is celebrated as Diwali.

Because most people in India follow the lunar calendar, the exact date of Diwali depends on the position of the moon and falls

in either October or November of each year. The festival lasts from three to five days and is celebrated with an abundance of sweet treats and dazzling decorations. Some practice fasting as a process of cleansing, some perform rigorous prayers, and others allocate more time towards their loved ones. It is customary for everyone in the household to purchase new clothes or jewelry, for children to receive money and presents from friends and relatives, and for everyone to enjoy decadent food. It is a time for married people to renew their vows, siblings to give each other gifts, and extended families to come together and cherish the love of being together. Lamps are lit with sesame oil in every part of the household to ward off negative energy, and preserve the purity welcomed in. Dancing commences early after dinner and continues throughout the night with people of all ages coming together and enjoying the melodic music. The vibrant colors and mellifluous sounds of power, purity, light, and love ring throughout the country.

We live in a world in which we are faced with challenges every day, witness pain and suffering, and learn of a multitude of acts committed through anger and hatred. The ultimate message of Diwali is universal and resonates with everyone around the world. It presents a uniting theme that is embodied by those who choose to look past the negativity, and focus on progressing with a pure and bright spirit. It is a time to reflect and remember to give and forgive, to rise and shine, to unite and unify, prosper and progress, and illuminate your inner self with positive energy. ■



# Digging Into That Juicy and Tasty Steak... | *Some Valuable Facts about Meat*

GUADALUPE ASTORGA

This October 2015, the World Health Organization (WHO) declared red meat and its processed derivatives a threat to human health, namely for its carcinogenic risk. Twenty-two experts from ten countries in the International Agency for Research on Cancer (IARC) concluded that processed meat is “carcinogenic to humans” (Group 1, as with tobacco smoking and asbestos), while red meat is “probably carcinogenic to humans” (Group 2A). This classification is based on the strength of scientific evidence rather than on the level of risk. Daily consumption of 50g (1.8 oz) of processed meat increases the risk of colorectal cancer by 18% (as a reference, the meat in a hamburger can easily surpass 200g or 7 oz). Find more details in the WHO Q&A about this topic [here](#).

Now, let's get into more digestible terms:

Processed meat is meat that has been transformed by the food industry through salting, curing, fermenting, smoking, or other processes used to enhance flavor or improve preservation. This includes hot dogs, ham, sausages, corned beef, beef jerky, canned meat and meat-based preparations and sauces, and even the meat in your beloved hamburger.

Now, what is the reason for the risk in unprocessed red meat? In this case, it is the way you cook it that can be problematic. High-temperature cooking, as in a barbecue or in a pan, produces carcinogenic chemicals including polycyclic aromatic hydrocarbons and heterocyclic aromatic amines.

Is raw meat safer? If you really want to eat raw meat you must consider that eating it carries a separate risk related to microbial infections. Although some of them are resistant, cooking kills most bacteria in steak.

In the end, is there a real health risk to eat red meat? Similar to alcohol, the risk depends on the dose. A good alternative is to steam your meat or cook it in the oven. The Food and Agriculture Organization (FAO) offers a recipe for a low-cost sausage variation made from vegetables and fresh, unprocessed meat that you can easily prepare to enjoy a delicious homemade natural product. Learn more about processed meat products and find a homemade alternative at the end of this [article](#).

Knowing these facts about the potential effects on human health is terrific, but what about the real risks derived from the production process?

Unlike the European Union, in the United States there is still a significant use of antibiot-



ics in livestock farming. Because these drugs are also used in humans, when we consume meat we acquire a strong antibiotic resistance and this can drive up health care costs. In 2009, the total cost of antibiotic resistant-infections in the United States was estimated to be between \$17 and \$26 billion per year. Read more in this [governmental health bill](#).

The environmental consequences of meat production can be even stronger than its health risk.

We normally think about global warming as being produced directly by human activity through carbon emissions. Surprisingly, industrial livestock production, including poultry, is one of the biggest sources of methane (CH<sub>4</sub>, released as a digestion byproduct) and human-related nitrous oxide (N<sub>2</sub>O), which has 296 times the global warming potential of carbon dioxide (CO<sub>2</sub>). Find more information about the role of livestock in climate change in [this article from FAO](#). If you want to read a detailed study of livestock and climate change from FAO go to this [link](#).

A limited resource: Water

Livestock's needs for fresh water are also important. One quarter of fresh water used worldwide relates to meat and dairy production. This water is then contaminated with dirt, manure, blood, chemical preservatives, and chemicals used to dissolve hair and skin. And for leather lovers, if we include the process of leather production, pollutants would also include acid ammonium salts, enzymes, fungicides, bactericides, and organic solvents, used to prepare the skins. Find more information about the water footprint of livestock farming [here](#), and a report from FAO on the role of livestock in water depletion and pollution [here](#).

What about the land? The effects on the land are also striking. These include reduced fertility, soil compaction, increased salinity,

and desertification. Livestock-related habitat destruction causes the extinction of native species, while the genetic diversity of livestock is also reduced. Extinct species include some cattle, goats, pigs, horses, and poultry. On the other hand, important land extensions are used for intensive culture of crops (corn, alfalfa, barley or cottonseed, among others) destined to feed animal livestock. Animal feed production produces deforestation, drought, and threatens biodiversity.

This massive feed production also causes problems associated with monocultures, the use of genetically-modified organisms, and excessive use of fertilizer, pesticides, and herbicides.

What is wrong with fertilizers?

As in our diets, we tend to think that the more nutrients we have, the better.

Well, not really. Soil, water, and air can be polluted by nitrogen and phosphorus from the fertilizer used for feed crop production and from manure. This overdose of nutrients reduces biodiversity due to water ecosystem's response to pollution and acidification.

Would it be better to become vegetarians?

A strict vegetarian diet requires strong nutritional enrichment and consumption of a variety of seeds, legumes, cereals, fruits, and vegetables, to replace meat. If not done properly, it can affect red globule production and it may not supply the essential nutrients our bodies require.

A good compromise is to reduce meat consumption by one half.

The United States has the world's biggest rate of meat consumption per capita (120.2 kg/year or 265 lbs.), followed by Kuwait (119.2 kg/year or 262 lbs.) and Australia (111.5 kg/year or 245 lbs.). Peru and Turkey consume 20.8 (44 lbs.) and 25.3 kg/year (55 lbs.), respectively, while China consumes 58.2 kg/year (128 lbs.). Take a look at this [interactive chart](#).

If meat consumption is proportional to the acquisitive power of a country, there is a long way to go to learn to invest in high quality food, other than meat.

Since 1960, meat production has grown. If this trend continues, by 2050 the environmental consequences of meat production could be devastating. Find a chart with the millions of tons of meat produced in the past fifty years [here](#).

It all depends on us; if we reduce our meat consumption by one half, we may be able to maintain sustainable meat consumption in our diets. ■



INTERVIEW BY MELVIN WHITE



Isaiah Curry  
Photo by  
MELVIN WHITE

**How long have you been living in the New York area?**

All my life. 63 years "young."

**Where do you currently live?**

Yonkers, New York. But most people say Rockefeller University, ha! "1 tostado Plaza!"

**Which is your favorite neighborhood?**

I've lived in Harlem, three different parts of Queens, now I am in Yonkers. But I have to say Harlem. I grew up with some great people. I love the Rucker games. And even though they had gangs and violence, my mother raised me right so those things never influence me. I like to say "it don't make no difference".

**What do you think is the most overrated thing in the city? And underrated?**

OVERRATED? I think cleaning the bus stops, I think it's a waste of water. UNDERRATED? Water! People waste a lot of it.

**What do you miss most when you are out of town?**

If I EVER leave, Home sweet home...

**If you could change one thing about NYC, what would that be?**

People who cross the street with headphones in their ears, not paying attention. Especially when I am driving.

**What is your favorite weekend activity in NYC?**

I love my DVDs. Karate movies. The best martial arts action-packed film was *Expendables 3*. It had everybody in it. Jean-Claude Van Damme, Chuck Norris, Sylvester Stallone. Man, I would have to lend you the DVD. Anything with action gets my attention.

**Has anything (negative or positive) changed about you while living here as a New Yorker?**

My Sensei, Jose Santos. Because of him I am still teaching exercise classes at Rockefeller.

He taught me discipline, and the right way of life. He's the reason I am the way I am today. Negative? NOTHING! People always see me smiling through the hallways all day long and ask how I do it? How do I always stay happy and smiling? I say "It's healthy for you. You should try it."

**What is the most memorable experience you have had in NYC?**

Memorable? The time I thought wasabi was guacamole. I ate the whole scoop in one shot. All I could say was "WOOOOH! Cough ... cough ... tears .... WOOWOO!" Man, they never let me forget that.

**How do you choose to get around and enjoy the scenery of NYC; Bike, MTA or WALK IT? Ha or Drive?**

Car or subway, but only when my baby is out of commission. I love the scenery.

**If you could live anywhere else, where would that be? Don't say home...haha!**

Florida. I got plans. . .

**Do you think of yourself as a New Yorker?**

Yes, never been anywhere else. 100% maybe even 200%. ■

## Henry IV

ALYSSA LUONG

The waiting crowd is hushed at 7:24 p.m. under the dim lights and high ceilings of Brooklyn's St. Ann's Warehouse on a windy night in early November. A man in a security uniform bellows for us to step aside, "Inmates coming through! Please step aside." Furrowed eyebrows are relaxed and smiles slowly appear when we realize it is part of the show. We hear the jangling of metal chains and see the imprisoned women all in uniform grey sweatshirts and sweatpants, with their eyes looking indifferently at the people who've come to see their production.

Donmar Warehouse and St. Ann's Warehouse presents the American Premiere of William Shakespeare's *Henry IV* in the context of a women's prison, directed by Phyllida Lloyd. The all-female cast initially feels like a gimmick in response to the history of all-male Shakespearean casts, but soon becomes irrelevant as the inmates begin Part I among children's

kitchen toys and tiny chairs and tables. It almost feel voyeuristic, watching upon playful props and sleepwear robes-turned royal. "Perhaps this is too personal for us to see?" I thought.

The prison setting proves effective as we see how the roles are played, inferring that the inmates may be true representations of their characters. The most commanding performance comes from Harriet Walter, who plays King Henry. Her presence brings a simple, unwavering intensity.

Another burst of energy comes from Jade Anouka, who plays Hotspur, living up to the nature of his name. The overall atmosphere is well-balanced, taking us through comic relief delivered by Falstaff, played by Sophie Stanton, and Clare Dunne with a crescendo of development as the maturing heir, Hal, to King Henry.

The ensemble is led through a musical cover of Glasvegas' "Daddy's Gone," led by Lady Percy, played by Sharon Rooney. It's a

delicate aspect of the play that offers a light melody, dueling with the rebellion and national conflict.

Lloyd succeeds in weaving the prison backdrop through the play, exposing the layers of the story with an abrupt incident when the Hostess, played by Zainab Hasan, runs off the stage in response to offensive language that has been directed at her. The lights came on and the prison guards came out, reminding us of the setting. Then, at the end, when Hal is crowned King, an uproar develops that triggers alarms and the guards emerge to end the play.

This strong cast with bold performances make the play worth experiencing. It's a stimulating layering of stories in which we have privy.

*Henry IV* runs through December 6, 2015  
Runtime: 2 hours 15 minutes  
[St. Ann's Warehouse](#), 45 Water Street, Brooklyn ■

# FOR YOUR CONSIDERATION Ones to Watch, Vol. 3 Edition

JIM KELLER

There's a reason why I always conclude this three-part series by covering the Best Supporting Actor and Actress races: with the exception of the frontrunners, they are very unpredictable. Hence, I am going to shake things up a bit this year and change the discussion format. Instead of laying out each actor's accomplishments and why I would, or would not, bet on them for a nomination, I have broken down below the different circumstances these actors find themselves in and how that narrative may or may not grow to influence Oscar voters. In a few short weeks, groups such as The New York Film Critics Circle (NYFCC), the National Board of Review (NBR), and the Los Angeles Film Critics Association (LAFCA) will announce their respective winners, thereby revealing a consensus of nominees, as we march forward to Oscar nominations on January 14th. These announcements, along with those of the Screen Actors Guild (SAG) and the Hollywood Foreign Press Association (Golden Globes), signal the start of the Oscar race's second leg.

## ~THE GENTS~

Here is how the actors discussed last year fared:

### Best Supporting Actor:

-J.K. Simmons — *Whiplash*: **Nominated and won**

-Edward Norton — *Birdman Or (The Unexpected Virtue of Ignorance)*: **Nominated**

-Mark Ruffalo — *Foxcatcher*: **Nominated**

-Ethan Hawke — *Boyhood*: **Nominated**

-Josh Brolin — *Inherent Vice*: **Not nominated**

Last year's fifth nominee was Robert Duvall for *The Judge*.

Before we begin, please note the following regarding the supporting actor and actress races:

**Everyone loves a two-fer:** Often the same film will have multiple supporting nominees. The precedent was set back in both supporting categories in 1939 when Hattie McDaniel competed against Olivia de Havilland for *Gone with the Wind* and Harry Carey and Claud Rains were nominated for *Mr. Smith Goes to Washington*. For the ladies, this has occurred twenty-nine times, whereas it has only happened sixteen times for the men in the eighty-seven years the Academy Awards has existed. Further, the phenomenon last occurred in Supporting Actor for 1991's *Bugsy*, which saw nominations for Harvey Keitel and Ben Kingsley. Conversely, it last occurred in Supporting Actress for 2011's *The Help*, which yielded a win for Octavia Spencer and a nod for Jessica Chastain. One might attribute this difference to the lack of female roles in Hollywood, i.e., there weren't enough supporting roles for women in Hollywood films to nominate the performance in a fifth film in those years.

**Ride Along:** A Best Picture nomination can often yield supporting nominations for the film's actors (e.g., Robert De Niro and Jacki Weaver in *American Hustle*).

**Category fraud is alive and well:** In a year where the best actor and actress categories are an embarrassment of riches, look for voters to vote lead performances as sup-

porting and vice versa just to get the actor(s) a nomination.

**Beware the newcomer:** Oscar voters love to swirl around newcomers and anoint them the prom king/queen (e.g., Lupita Nyong'o in *12 Years a Slave*).

### A Tale of Two Reporters

**Mark Ruffalo and Michael Keaton (Spotlight):**

Thomas McCarthy's drama is based on the true story of how the *Boston Globe* "Spotlight" team uncovered the massive child molestation scandal and cover-up within the local Catholic Archdiocese. It is one of the year's best reviewed films, it has a 93 Metacritic score, and is, therefore, a serious Best Picture contender. It has already won the Gotham Jury Award for Ensemble Performance at this year's Gotham Awards and shows no signs of slowing down as the Oscar season accelerates. At its core are the supporting players: Mark Ruffalo, Michael Keaton, and Liev Schreiber, who play the members of the Spotlight team. Ruffalo once again imbues the film with tenderness and has the best scene. It would be his third nomination in this category after having been nominated for 2010's *The Kids Are All Right* and last year's *Foxcatcher*. On paper, it seems that should be the story, but there is a groundswell opinion, among Oscar pundits, that the Academy will nominate Keaton since he lost Best Actor last year to Eddie Redmayne (*The Theory of Everything*). As ridiculous as this sounds, it could very well be. Look for one of them to get in alongside these other contenders:

### The "It" Factor

**Robert De Niro (Joy):** He won Best Supporting Actor in 1975 for *The Godfather Part II* and Best Actor in 1981 for *Raging Bull*. He has been nominated four times for Best Actor: *Taxi Driver* (1977), *The Deer Hunter* (1979), *Awakenings* (1991), and *Cape Fear* (1992), and most recently, for Supporting Actor for *Silver Linings Playbook* (2013).

**Bradley Cooper (Joy):** He earned his first Best Actor nomination alongside De Niro for *Silver Linings Playbook* (2013) and has been nominated each subsequent year:

CONTINUED TO P. 9



*American Hustle* (Supporting, 2014 and *American Sniper* (Lead, 2015).

Joy is directed by David O. Russell, whose last three films have been nominated for Best Picture and have yielded three supporting actor nominations combined.

#### Newcomers

**Mark Rylance (*Bridge of Spies*):** He was nominated this year for Outstanding Lead Actor in a Limited Series or a Movie for *Wolf Hall* and won the Best Actor British Academy of Film and Television Arts (BAFTA) TV Award for *The Government Inspector* in 2006. He is also widely known for his stage work, having won three Tony awards.

**Tom Hardy (*The Revenant*):** He won the Best Actor LAFCA last year for *Locke* and was nominated for the Best Actor BAFTA TV Award in 2008 for *Stuart: A Life Backwards*. His film is directed by Alejandro González Iñárritu, last year's Best Director winner for *Birdman or (The Unexpected Virtue of Ignorance)*.

**Idris Elba (*Beasts of No Nation*):** He won the Golden Globe for Best Performance by an Actor in a Mini-Series or a Motion Picture Made for Television in 2012 for *Luther*, a role that netted him two other nominations in 2011 and 2014. In those same years he was nominated for the Outstanding Lead Actor in a Miniseries or a Movie Primetime Emmy. Last year he was also nominated for Best Actor by the same body for *Mandela: Long Walk to Freedom*.

Regardless of nominations, *Beasts* will go down in history as the first feature-length, original film from Netflix. The idea of a content streaming titan churning out films frightens the big studios and challenges the idea that the Academy does in fact award the best films. It is one of the best films of the year and it is likely that Hollywood will snub the film, but will throw it a bone in the form of a supporting actor nomination for Elba.

#### ~THE LADIES~

Here is how the actresses discussed last year fared:

#### Best Supporting Actress:

-Meryl Streep – *Into the Woods*: **Nominated**  
-Patricia Arquette – *Boyhood*: **Nominated and won**

-Keira Knightley – *The Imitation Game*: **Nominated**

-Emma Stone – *Birdman Or (The Unexpected Virtue of Ignorance)*: **Nominated**

-Jessica Chastain – *A Most Violent Year*: **Not nominated**

Last year's fifth nominee was Laura Dern for *Wild*.

#### Will They or Won't They?

**Rooney Mara (*Carol*) and Alicia Vikander (*The Danish Girl*):**

A storm is brewing and the fallout from it could determine whether or not Rooney Mara and Alicia Vikander earn nominations for *Carol* and *The Danish Girl*, respectively. Until the second week in November, most Oscar pundits had been predicting both women to be in the top two slots of Best Supporting Actress. It was then that the HFPA cried foul, rejected both women's bids for supporting actress from the Golden Globes, and forced them to compete in the Best Actress category. This news has shaken up the race considerably as it casts an eye on the aforementioned category fraud that takes place during awards season. As I have said previously in this column, when it comes to the Academy, all bets are off in terms of voting: they will vote for whom-ever they please in whichever category they please, regardless of the campaign strategy. So it's difficult to say how much of an effect this will have on the Academy Awards, but it's certainly worth mentioning. With that said, I suspect the Academy will remain undeterred by the Globes' stance and will consider both women only in the Supporting Actress category. Look for the following ladies to accompany them:

#### Old Favorites

**Kate Winslet (*Steve Jobs*):** Speak of the devil! Isn't Winslet's one of those (if not the most notorious) nominations begotten under category fraud? Why yes, yes it is! I never tire of sharing my complete and utter disdain for the Academy's choice to award Winslet the Best Actress statuette in 2009



for her supporting role in *The Reader*. It truly is laughable, but I digress. Aside from her win, Winslet has five nominations under her belt—two in supporting (*Sense and Sensibility* in 1996 and *Iris* in 2002) and three in lead (*Titanic* in 1998, *Eternal Sunshine of the Spotless Mind* in 2005 and *Little Children* in 2007).

**Jane Fonda (*Youth*):** She won twice for Best Actress—for *Klute* (1972) and for *Coming Home* (1979). Fonda was first nominated for Best Actress in 1970 for *They Shoot Horses, Don't They?* and also earned nominations for *Julia* (1978), *The China Syndrome* (1980), and *The Morning After* (1987). This would be her second Supporting Actress nomination, her first was in 1982 for *On Golden Pond*.

#### Newcomer

**Jennifer Jason Leigh (*The Hateful Eight*):** In 1990, Leigh won the NYFCC Best Supporting Actress for *Miami Blues* and *Last Exit to Brooklyn*. She also won Best Actress from the body in 1995 for *Georgia*. Her role in 1994's *Mrs. Parker and the Vicious Circle* netted her a Best Actress win from the NSFC, a role that was also recognized by the Golden Globes in 1995.

There are a number of other men that could feature this year including industry veteran, Robert Redford in *Truth*, newcomer and youngster, Jacob Tremblay in *Room*, and Oscar heavyweight, Christian Bale in *The Big Short*. For the ladies, other possibilities include Joan Allen for *Room*, Julie Walters for *Brooklyn*, and, because anything can happen in a David O. Russell film, Diane Ladd and Isabella Rossellini for *Joy*.

After the holidays, it's all over but the shouting. ■



# Citi-zens United

GEORGE BARANY, CHRISTOPHER ADAMS, JOHN CHILD, CHARLES FLASTER, AND BRENT HARTZELL

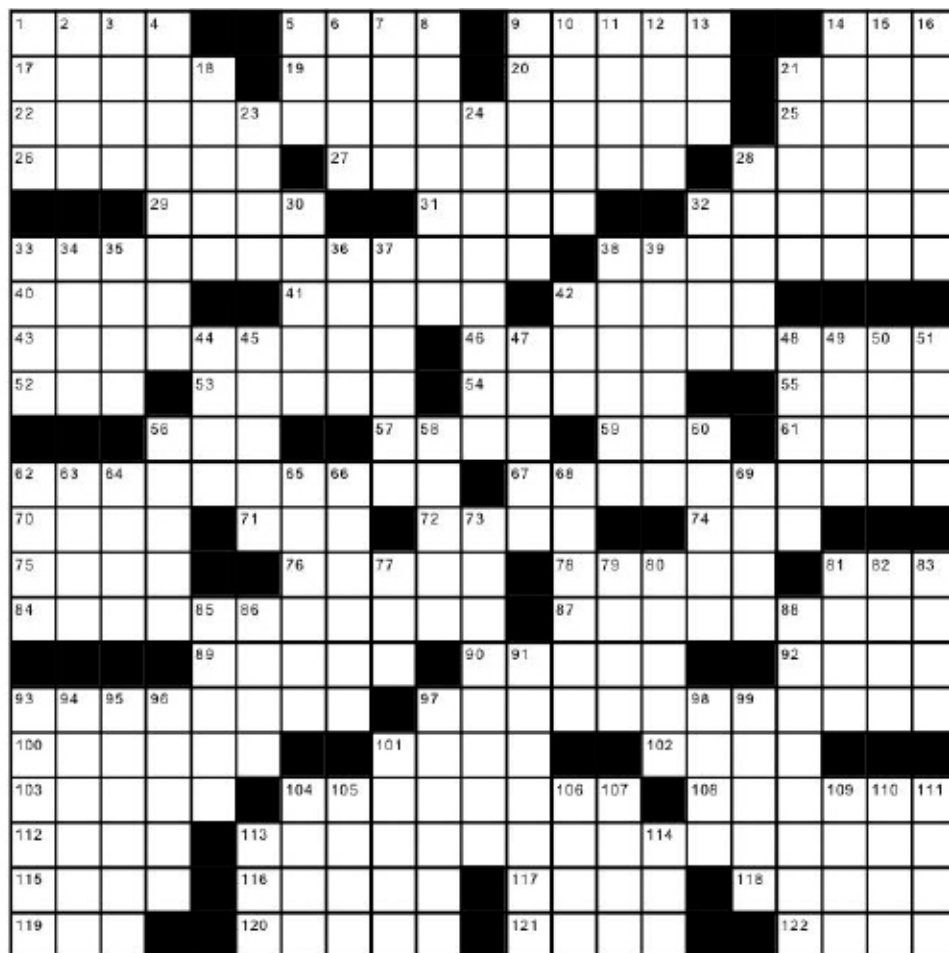
George Barany is a Rockefeller alum (1977), currently on the faculty of the University of Minnesota–Twin Cities. Christopher Adams is a graduate student at the University of Iowa, John Child runs a business in Nepal, Charles Flaster is a retired school teacher in the Philadelphia area, and Brent Hartzell is the finance director for the City of Allentown, Pennsylvania. For more about this specific puzzle, including a link to the answer, [click here](#). Also, [try more Barany and Friends crossword puzzles](#).

## ACROSS

1. One of the “Three Bs”
5. One who crosses a line
9. Go-to ballplayers, colloquially
14. “Bull Durham” transportation
17. Like Citi Field when 122-Across’s Yoenis Céspedes goes deep
19. End of a palindrome about Napoleon’s exile
20. Bagel, e.g.
21. Lady’s man, briefly
22. 122-Across’s ace Matt’s favorite drink?
25. Pitcher with a big mouth?
26. From 1962-1987, spring training site for the 122-Across, informally
27. Potpourri
28. Aida or Spartacus, e.g.
29. Berberian and Parseghian
31. Marine killer
32. Nighttime ball, perhaps
33. Out in left field, to 122-Across’s rookie phenom Michael?
38. One to the left of the curve?
40. What 122-Across’s pitcher Niese has, that his teammate Colón does not?
41. Glandular opening?
42. The “f” in f-stop
43. Site of the 2014 season opener (Dodgers vs. Diamondbacks)
46. Paraphernalia for 122-Across’s third sacker David?
52. “Saving Private Ryan” landing craft: Abbr.
53. Steve of “Family Matters”
54. Categorize
55. Like some traditions
56. Org. that let Barry Bonds walk in 2015
57. Bologna bones
59. Agcy. spawned by the Manhattan Project
61. Figure of interest?
62. Something used by 122-Across’s manager Collins to wipe the sweat off his face?
67. “Steal a base when nobody’s looking,” according to 122-Across’s sudden slugger Daniel?
70. “\_\_\_ bit of common sense”
71. Airline’s home base
72. Athena’s breastplate: Var.
74. Classified ad abbr.
75. Dodge Viper engine, e.g.
76. \_\_\_ great catch (dazzle the fans)
78. Suburb of Minneapolis-St. Paul (crossword constructor Tom Pepper is its Finance Director)
81. Abbr. with a ring to it?
84. Roll out the red carpet for 122-Across’s rookie southpaw Steven?
87. Plea made with one’s hands up
89. Desi of Desilu
90. Jordanian World Heritage site
92. Scatter?
93. Strengthen
97. What 122-Across’s ace DeGrom uses to get high?
100. Roman romances
101. Dry, like Spanish wine
102. One driving in the winning run, e.g.
103. Worked undercover
104. Winter Olympics event
108. Single-celled microorganisms
112. 10-point Q, e.g.
113. Cry of recognition when 122-Across’s closer Jeury starts to warm up?
115. “\_\_\_ Tu” (1974 hit)
116. Beatles in Shea Stadium, e.g.
117. Fastball down the middle, e.g.
118. Colorado resort
119. Part of 122-Across’s rookie phenom Syndergaard’s routine
120. Milton Berle sidekick Arnold \_\_\_
121. Sources of taxol
122. Miracle team, once (and perhaps twice!)

## DOWN

1. Dickensian cries
2. Smell \_\_\_ (be suspicious)
3. Citi follower, through 1998
4. Go ballistic



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5. Make a baseball seam
6. Hardly a blabbermouth
7. Start of a palindrome about Napoleon’s exile
8. Swell up, like ERAs for ineffective relievers
9. Position, for Cruz or Thomas
10. South Seas kingdom
11. Exhort
12. Something often paid in the minor leagues
13. Ukraine or Belarus, once: Abbr.
14. Ides of March word
15. Inconsistent
16. Easy, for one
18. Back in?
21. Very cold
23. 1969 or 1986, e.g.
24. Medium-sized nocturnal raptors
28. Mephistophelean merchandise
30. Pursue prey
32. Ballpark figure?
33. Stocking stuffer, perhaps
34. Millstone
35. Where eagles care?
36. Drooling dog in “Garfield”
37. Many a 122-Across fan, some might say
38. Makeshift bookmark
39. It’s a drag
42. Myth statement?
44. Like Dorothy’s slippers
45. “If I Were \_\_\_ Man” (“Fiddler” tune)
47. “For Love of the Game” director Sam
48. Statue with limitations
49. Caspian feeder
50. \_\_\_ Morgana
51. Left the coop?
56. 100 centimes, in pre-euro days
58. Common sight on Banner Day
60. Throw a spitter, e.g.
62. S\_\_\_X
63. Spanish direction
64. Rod’s companion
65. Light units
66. Sasha and Malia
68. Familiar with
69. Cravings
73. Dish best served cold
77. Matsui who was the first Japanese infielder in the major leagues, to 122-Across’s fans
79. “You’ve got two choices”
80. Grind together
81. Penicillin producer
82. Alexander, to Reagan
83. The face of the franchise, invariably
85. Rowed one’s boat ashore
86. Mil. field rations
88. Devotion to pleasure
91. Green science
93. Dresses down... or butters up?
94. Don Denkinger, Jim Joyce, or Bill Klem
95. Flushing site?
96. Shady sorts?
97. Globetrotter’s malaise
98. “Champagne Tony” of golf
99. Bouquet
101. “Nights in White \_\_\_” (1967 hit)
104. Rice in Nepal
105. Suffix denoting a collection
106. “\_\_\_ From Muskogee” (1969 hit)
107. “I wouldn’t click on this link from your office,” initially
109. Mont Blanc, par exemple
110. Losing proposition?
111. Lacking
113. Band-Aid and Barbie, e.g.: Abbr.
114. Sumter and McHenry: Abbr.

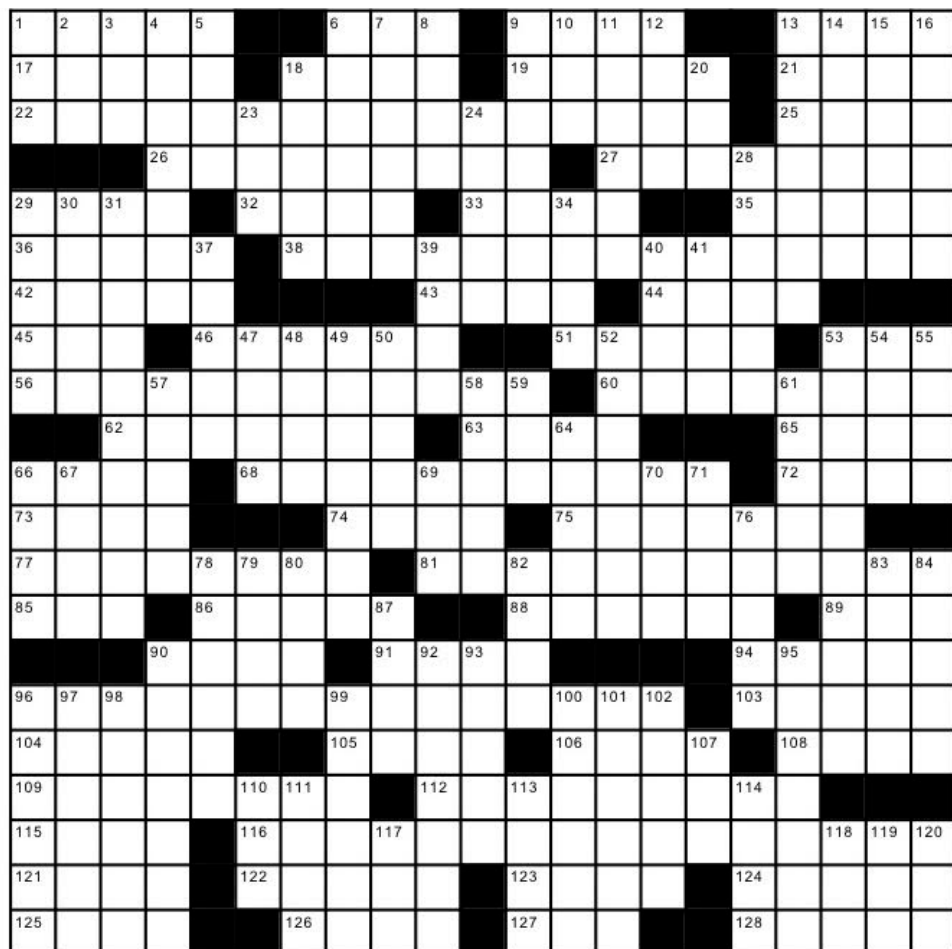
SEE THE SECOND PUZZLE  
ON THE NEXT PAGE 21



# Nothing Up My Sleeve

GEORGE BARANY AND JOHN CHILD

George Barany is a Rockefeller alum (1977) currently on the faculty of the University of Minnesota–Twin Cities. John Child has had an interesting career and currently lives in Nepal. For more about this specific puzzle, including a link to the answer, visit [here](#). More Barany and Friends crosswords can be found [here](#).



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## ACROSS

1. Hiccups cure, perhaps
6. N.Y. engineering sch.
9. Flying jib or spinnaker, e.g.
13. Plumbing problem
17. Knight's attendants
18. Possible answer to "When will we get there?"
19. Pythagoras's homeland
21. Kutch queen
22. Home town to 38- and 116-Across
25. Rappers Wayne and Kim
26. Umber or taupe, e.g.
27. Pigs out
29. "\_\_\_ and out"
32. H.H. Munro's nom de plume
33. Bugging bug
35. Spanish omelet ingredient
36. Thriller author Daniel
38. Clever pal of 116-Across
42. Angler Isaak's wicker work
43. Scatter
44. Mil. school
45. Cash dispenser
46. Fly
51. Gas relief
53. They swing both ways?
56. Inscription proving that 116-Across was an earl's heir
60. Wrestler Andre's condition
62. Archrival
63. Lhasa \_\_\_ (shaggy dog breed from Tibet)
65. Grammy-winner R&B singer India. \_\_\_
66. \_\_\_ 'acte

68. 116-Across's alma mater
72. Dept. store stock
73. Dark emotion
74. Objects in Venn diagrams
75. Multi-pane window spaces
77. Dessert that's Italian for "pick me up"
81. 96-Across's country
85. Like a fox, it's said
86. On the market, in a way
88. Old box letters
89. They may amend xword clues
90. Paul who composed Johnny's theme song
91. "\_\_\_ My Way" ("Porgy and Bess" tune)
94. D.A.'s aides
96. Adversaries of 38- and 116-Across
103. Not \_\_\_ eye (stay calm)
104. National competitor
105. Leftist "Reader"
106. German gentleman
108. Texts or e-mails
109. Computer geek
112. Break in, in jargon
115. Golf's Isao
116. Dim-witted pal of 38-Across
121. Something one might shake or break
122. "Later!"
123. Turns right
124. It may be near the Advil
125. North Sea EU country
126. Colorist
127. Town that is the gateway to the Boundary Waters Canoe Area
128. Afro-pop musician Youssou

## DOWN

1. Beach ratings?
2. Jaguar, e.g.
3. "Long, long \_\_\_ .."
4. Put aside
5. This, in Toledo
6. "No. 10" painter Mark
7. Kind of justice or license
8. Dirt, in a way
9. Part of walk and talk?
10. It bought Netscape and The Huffington Post
11. Atlas features
12. It comes between Kilo and Mike
13. "The Proper Care and Feeding of Husbands" author, for short
14. Bitter critic
15. One way to fall
16. Epitome of hotness
18. Ravi Shankar's forte
20. It may be fare to an aardvark
23. Abbr. in a realtor's ad
24. Financial backer
28. 1994 Nobel Peace laureate Peres
29. Half of "The Odd Couple"
30. Taste for fine art
31. Holmesian exclamation
34. Take \_\_\_ at, as in criticism
37. Crime chime
39. Jim-dandy
40. \_\_\_ d'Orsay, en Paris
41. Mil. school
47. Aspect
48. "Make \_\_\_" (order from Picard)
49. On the table
50. Kaffee cup
52. "I" problem
53. Some of them are edible: think soup
54. "Depends on what the meaning of \_\_\_"
55. "Peter Pan" pirate captain's right hand
57. Yankee's M.V.P. catcher Yogi
58. "You are not!" reply
59. Mil. address
61. Buccaneers' base
64. ERA and RBI, e.g.
66. New newts
67. He revived Carl's "Cosmos"
69. Energy storage molecule, briefly
70. Stark sister in "Game of Thrones"
71. Fruit that tastes better than it looks and sounds
76. Classroom with cameras
78. Yankee's M.V.P. catcher Thurman
79. Durante song starter
80. The ugly duckling, ultimately
82. Fish found in melts
83. "Hello! My name is..." stick-on
84. Professional gps.
87. By \_\_\_ of (due to)
90. Reach for the stars
92. Horse of the Century
93. Cheri of "Scary Movie"
95. Ho-hum reply to "What's new?"
96. WWII Philippine battleground
97. World Cup chant
98. Shady business
99. Moore who found Bo a "10"
100. Biblical coin
101. Regatta site
102. \_\_\_ liberales, at Mexican colleges
107. British rule opposed by Gandhi, in short
110. "This is only a test" org.
111. Regretted
113. "Picnic" playwright
114. IRS agent
117. Caustic chemical
118. Palindromic "War on Poverty" agcy.
119. "Law and Order" spinoff, familiarly
120. Puppet attachment?



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## Life on a Roll

QIONG WANG

The Diocletian's palace is a truly amazing heritage site from the Roman Empire. It is located in Split, an important Mediterranean harbor city in Croatia. I was completely in awe, standing at the center square of the palace, feeling like a dwarf look-

ing up at the magnificent palace pillars. The Gregory of Nin statue at the north gate carries an admirable and amiable charisma, and whose big toe through years of touching by visitors (for good luck), has become discolored and shiny, like bronze. ■



ALL PHOTOS BY QIONG WANG/Natural Selections