Flexibility and individualized support are major strengths of Rockefeller's graduate program and have been especially beneficial to students in 2020. The Dean's Office is one of Rockefeller's most valuable resources for students. Dr. Emily Harms, the Senior Associate Dean for Graduate Studies, discussed her experience supporting the student body this year.

Harms and her colleagues in the Dean's Office played an invaluable role in mitigating the impact of this past year's extraordinary events. "We thought our fundamental responsibility was to provide support to students and postdocs professionally and personally," she said. "To try to alleviate as much stress as possible by being flexible and understanding of individual circumstances."

Harms said that many students expressed concerns about meeting deadlines after campus shut down. Almost immediately, the Dean's Office suspended automatic email reminders for Faculty Advisory Committee meetings and other deadlines. Harms and Dr. Sid Strickland, Dean of Graduate and Postgraduate Studies, sent an email in May to reassure the student body that nearly all deadlines would be flexible and individual circumstances would be taken into account. "As we heard from students about things that were stressful to them, we tried to be very clear about expectations and flexibility," Harms said. "People could come to talk to us about individual issues at any time."

The Dean's Office was proactive in making sure students were set up to manage their time most effectively. For one, they shuffled the curriculum to shift some fall courses to the summer, when labs were at limited capacity. Harms said students appreciated the opportunity to focus on coursework while stuck at home.

"I also think that people just need to take time for their personal wellness," Harms said. The Dean's Office discussed strategies with Rockefeller's mental health providers, in order to better advise students who were struggling.

As the year progressed, discussions and concerns expanded beyond the pandemic to include the movement for racial justice and the divisive presidential election. Harms and her colleagues are heavily involved in diversity, equity, inclusion, and justice initiatives on campus, many of which are student-led and developing rapidly. "I think it's great that it's becoming part of the fabric of university operations and our day-to-day discussions, which it should be," Harms said.

"There are a lot of committees doing work behind the scenes to work on increasing diversity and inclusion at Rockefeller," Harms said. For example, the University is seriously considering hiring a Chief Diversity Officer.

It shouldn't come as a surprise that the Dean's Office was set up to accommodate unique situations and difficulties in 2020, because this was also their pre-pandemic policy. "Because of our small size, we have the luxury of being able to deal with circumstances on a case-by-case basis," Harms said.

This year has highlighted, not changed, the care with which Rockefeller supports its students, postdocs, and staff. "What the last year has shown me is that one of the things I value most about Rockefeller is the sense of community and support for one another," Harms said. "I feel grateful to work at an institution where people value the truth and have each other's backs during challenging times."
There has been much news coverage lately about the distribution of the new COVID-19 vaccines. Dr. Anthony Fauci mentioned a previous campaign to inoculate New Yorkers against smallpox in 1947, which supposedly covered six million people in just about a month. It was the last mass vaccine campaign in New York City. There are similarities and differences between these two incidents.

Smallpox, like COVID-19, is caused by a virus, in this case the variola virus. It is a DNA virus, a single linear double strand. It is unusual in that it replicates inside the host cell’s cytoplasm rather than in its nucleus. It also makes a unique DNA-dependent RNA polymerase, and its outside is made up of Golgi body membranes, an organelle that is normally found inside a cell. Smallpox, like COVID-19, is transmitted through the air by droplets from an infected person coughing or sneezing. In some cases, although less likely, it can be transmitted by the used clothing or bed linens of an infected person. It presents as a full body rash that turns into blisters, as well as fever, body aches, and fatigue. There is no cure for smallpox, only management of the symptoms. While its mortality rate is 20-30%, people who survive smallpox are left with severe scars and sometimes blindness. It can only be definitively diagnosed by the detection of clusters of proteins called Guarneri bodies, from a skin biopsy.

The world experienced isolated outbreaks of smallpox like the one in New York City in 1947. On March 1 of that year, Eugene Le Bar, a Maine businessman, and his wife got off a bus from Mexico. They checked into a Midtown hotel and did some sight-seeing. He soon developed a fever and a rash and was admitted to Bellevue Hospital. Three days later, he was transferred to Willard Parker Hospital, the city hospital for communicable diseases at that time, on East 16th Street. His initial diagnosis was an adverse reaction to the drugs he had taken for his fever. But two days later, he died. On March 21 and 27 respectively, two other patients came in with similar symptoms who had been at Willard Parker at the same time: a 22-month-old girl from the Bronx and a 25-year-old hospital orderly, Ishmael Acosta, from Harlem. At that point, the Health Department began to suspect smallpox.

Israel Weinstein, the New York City Health Department Commissioner, received lab results that showed the presence of Guarneri bodies from Le Bar’s skin biopsy on April 4. He realized that the traditional Easter Parade was only two days away. With those massive crowds, smallpox could spread quickly. Along with Mayor William O’Dwyer, he held a news conference urging every New Yorker to get vaccinated. Even if you had gotten vaccinated as a child, he suspected that immunity may have waned. “Be safe, be sure, get vaccinated!” was the slogan. They immediately set up free clinics in hospitals, health departments, police and fire stations, and schools. They recruited volunteers from the health department, the Red Cross, off-duty police and firefighters, and the still existing World War II Air Raid Wardens to help run the clinics. The mayor received his injection on television. People lined up...

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by the hundreds. There were only about half a million doses of smallpox vaccine in
the city’s stockpile at first. Some doses were
distributed to private physicians. Wein-
stein reached out to the seven smallpox
vaccine manufacturers in the country, who
promised around two million doses. He
acquired another approximately 800,000
doses from the military, for a total of
roughly three million doses. On April 11,
The New York Times reported that 600,000
people had gotten their shot.

Carmen Acosta, Ishmael Acosta’s
wife, died on April 13, the only other death
in this outbreak. The story appeared on
the front page of The New York Times. This
drove people out to the clinics in greater
numbers. The city’s tracking and tracing
program concluded on April 15 that all of
the traced contacts with Le Bar had been
isolated or vaccinated. This practice is
called ring vaccination. Some sources say
that this is what eventually ended the 1947
New York City smallpox outbreak.

On April 16, the Times reported that
the city had run out of vaccine doses. Po-
lie had to break up crowds who were told
that there were no more shots after waiting
in line. The next day, the city received an-
other million doses from private labs. The
Times daily tally on April 21 stated that a
total of 3.4 million New Yorkers had been
vaccinated. The next day, the tally was an-
other 200,000.

The city declared the outbreak over
on April 24 and started closing clinics two
days later. The last clinic closed on May 3,
and the city said that they had vaccinated
six million people. If one adds up the daily
counts from the Times, the total comes to
2.5 million. It is not clear which number is
accurate, but the lower number is still an
impressive feat in just one month. In the
end, there were twelve confirmed infec-
tions and two deaths. The city had an ad-
vantage in 1947 as opposed to now in that
the smallpox vaccine already existed, and
only one shot was required. Smallpox was
declared eradicated in 1980 by the 33rd
World Health Assembly. As for COVID-19,
as of January 14, 2021 the city had admin-
istered 303,671 shots since December 15,
most of which were the first dose. The daily
number of doses administered has been as
high as 24,289. If this rate increases, and
our vaccine supply is sufficient, it is pos-
sible that we may have all ten million New
 Yorkers vaccinated in a little over a year.

New York Rhymes

SCENTS THEY SENT

I would give a fortune to buy an incense that smells like
my mother’s pink robe: something between jasmine and
baby powder.

Her father would be easier to simulate; it would be mint,
but the smell turns different when he plucks it naughtily
from the neighbor’s garden.

Her mother is pretty tough to pin down; from her cheese
pie to hair spray, I can’t spot what lingers the most.

I could bring my father here through his after shave, but
only when he’s freshly shaved. When he is not, he smells
like beard again.

His father would be grandpa’s toothpaste; definitely
strong mint; there must be something with mint and
grandpas.

His mother smelled like lipstick or pasta frola or cherry
liqueur or Greek coffee in the afternoon.

My sister smells like clean, and it’s so bad I can’t explain
it better.

By Konstantina

Poetry: Dr. Konstantina Theofanopoulou
(Instagram: @newyork_rhymes)
One line art: Mikaella Theofanopoulou
(Instagram: @m_theta_art)

Natural Expressions

Digital

This month, Bernie Langs of The Rockefeller University Development Office
announces the release of his latest song, “Arms Aloft.” Primarily written and recorded by Joe
Strummer and The Mescaleros for their 2003 album Streetcore, Langs lends his voice and musical vision
to this rock cover. Check out Langs’ performance on his SoundCloud page.

Email Megan E. Kelley at mkelley@rockefeller.edu to submit your art/music/performance/sporting/other
event for next month’s “Natural Expressions” and follow @NatSelections on Twitter for more events.
Digital and online events/releases are welcome!
2021 Fitness Resolutions

ANNA AMELIANCHIK

In the pre-COVID world, if you had seen me running down the street, it would have almost certainly meant that someone was chasing me down with a machete. As an avid dancer, I took my cardiovascular fitness for granted and snubbed every other form of cardio, including running. This all changed in March 2020 when I took to running up and down the East River Esplanade to appease my stressed-out and sleep-deprived brain. Day by day and mile by mile, I became faster and stronger. With an improvement in fitness came an increase in confidence, and with it—the incessant need to keep on moving, no matter what. And then it got cold. Cold weather running is a reprieve for the restless, and, with the right gear, it can be safe and pleasant. However, my biggest challenge was overcoming the activation barrier that keeps you from stepping outside and doing something that is objectively hard while battling the elements. This is where the tradition of New Year’s resolutions came in handy.

Browsing through upcoming challenges on the fitness tracking app Strava one day, I came across a “New Year 90” challenge sponsored by a certain high-end athleisure retailer. All I had to do was workout for ninety minutes a week for the first twenty-one days of 2021, clocking in four and a half hours in total. And although any workout could count toward the goal, I decided to make it all about running. This resolution is not going to carry me through all of 2021, but it will certainly allow me to start the year with the right attitude. As a bonus, completing this challenge on Strava would give me a 30% discount on purchases made with the certain high-end retailer, and who doesn’t need another pair of $100 leggings in their life?!
The Curious Appeal of “The Innocent” in Film: Benjamin Button and Forrest Gump

The 1994 film *Forrest Gump*, directed by Robert Zemeckis, focuses on the life of a supposedly simple-minded man who manages to constantly find himself in the center of many historically turbulent moments during the 1960s and 1970s. Along the way, the Greenbow, Alabama native meets several presidents, sees combat action in the Vietnam war, finds a highly successful shrimping business, and literally jogs across the entire expanse of America. The movie, which won numerous Academy Awards including Best Picture, Best Actor for Tom Hanks as Gump, and Best Director for Zemeckis, is also a touching love story that tracks Gump’s childhood love of the kind-hearted and rebellious Jenny (Robin Wright) to their cathartic yet heartbreaking marriage.

Hanks’ Gump, with his melodic southern twang and amusing range set of sayings and vocal mannerisms, is best described as an “Innocent.” He is marvellously good-natured and a steadfast friend to his war buddy Bubba (Mykelti Williamson) and the formidable Lieutenant Dan (Gary Sinise), saving the latter’s life during an intense napalm bombing during the Vietnam war. Lt. Dan later descends into despair as a double amputee war veteran, and it is through Gump’s dedication to him over many years that he emerges once more a renewed man with a fresh lease on life. Gump encouraged a similar transformation in Jenny, who struggled with disastrous self-hatred and drug abuse before finally realizing, like the savvy Lt. Dan, what is of real importance in life. Their understanding is gained by slowly awakening to the consistent, exemplary behavior of Gump, an expression of his quiet, “God-given” instinctive ethical wisdom. Gump has, through the thick and thin of all his extraordinary experiences, remained consistent to his unique self, and has the uncanny ability to brush aside constant insults and abuse about his intelligence, which he hears and quickly dismisses as of no real relevance.

*The Curious Case of Benjamin Button* was released in 2008 and was directed by David Fincher. Fincher's movies always take chances and films such as *Mank* (2020), *The Girl with the Dragon Tattoo* (2011), and *The Social Network* (2010) stand up to repeated viewing. *Benjamin Button* received numerous Oscar nominations, but won only three in minor categories. Brad Pitt, perhaps the most underrated and underappreciated actor in movie history, is absolutely stunning in the lead as Benjamin Button, a native of New Orleans raised by Queenie (Taraji P. Henson) as her own. Button’s Louisiana accent is a completely different Southern vocal characterization compared to Gump’s. Pitt’s character speaks with intonations and inflections that are music to the ear, akin to the flow of a melodic ballad softly performed by a New Orleans jazz band. Pitt masterfully rises and falls on the waves of his character’s unique and amazing life, as we witness how he is welcomed into the hearts of those he encounters on his journey.

*Benjamin Button* is a difficult movie. The story maintains a disturbing undercurrent leaving the viewer feeling almost guilty in finding it so troublesome. Based loosely on a 1922 short story by F. Scott Fitzgerald, *Benjamin Button* is a lifespan fantasy of, for lack of better words, a “freak of nature,” who biologically ages in reverse, from old to young. He is born to this world and immediately abandoned as an infant-sized, shriveled, old man with the neurology of a baby. He ends his days plagued with dementia and senility in the body of a boy, finally retreating and passing away as a newborn, perhaps in his 80s or older.

Benjamin Button is presented as the most kind-hearted of “Innocents,” with quiet smarts as well as powers of observance far beyond the capabilities of Gump. Like Gump, he faces the turbulence and tumults of history, some of which are played out in the 1940s.

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Both characters come into their own in the 1960s and both not only survive war, but are present at the moment of the violent deaths of their closest friend in battle. Gump expresses regret that the last words he says to his best friend Bubba as he dies in Vietnam border on absurd. Captain Mike is blessed to die on a small boat at sea during a fierce battle during World War II with Button grasping his hand to comfort him. Both scenes are tearfully and emotionally staged by the two innovative film directors.

Each film was highly praised on release for its innovative use of special effects, especially Zemeckis for how he magically interjected Gump to meet three United States presidents and the late recording artist, John Lennon, using historical footage. Critics also praised Fincher's ability to physically change Brad Pitt's body over his trajectory from old age to youth.

Gump had his Jenny, while Button was enamored by Daisy, portrayed by the brilliant Cate Blanchett. When Button meets Daisy, they are both young children, and it's disturbing to see the extremely old man that Button's body maintains at that time playing with a little girl—however, the viewer is reminded that they are actually close in age and that he poses no unnatural danger to her. Their dynamic changes and evolves as they approach physical parity as she grows up and he "grows down." Daisy's rebellion is completely different from Jenny's when she leaves her New Orleans hometown, but both are motivated by the enticement of discovering a larger world and embracing opportunities for excitement. Daisy enters a bohemian life as a celebrated ballerina, and her unexpected encounter with Button in the arts scene of Manhattan is reminiscent of Jenny accidentally reuniting with Gump at a Washington DC anti-war rally in the 1960s. Both relationships take many more years to come to fruition as Daisy and Jenny seek out other lovers and pursuits.

Jenny chooses to run from Gump after she's come out of her self-destructiveness. She emotionally restores herself in Greenbow at Gump's home. When Forrest proposes to her, she softly declines:

Forrest Gump: Will you marry me? I'd make a good husband, Jenny.
Jenny: You would, Forrest.
Gump: But you won't marry me.
Jenny: You don't wanna marry me.
Gump: Why don't you love me, Jenny? I'm not a smart man, but I know what love is.

It's one of the few vocal inflections Hanks uses in the entire movie with an edge to it. The viewer is left to note, "Perhaps he is not such an 'Innocent' after all." Jenny abandons her own self-hatred, and their reunification towards the film's end comes at a bad time: after finally settling down, Jenny is doomed by what is most likely a deadly AIDS diagnosis and Gump is left to raise their child alone.

Daisy reunites with Button when her dancing career is halted after a tragic car accident. They begin a deeply loving relationship, but ironically it is Button who decides to steal away for good after they have a baby and he becomes disturbed by the idea that he, as a father, is destined to physically morph over the years to having a child-like appearance and an aging mind. The scenes Pitt subsequently traveling to obscure spots of the world and the Indian subcontinent in a spiritual quest reminded me of the adventures of the Austrian mountaineer Heinrich Harrer that Pitt portrayed in 1997's Seven Years in Tibet.

An "Innocent" maintains an easy, positive attitude and optimism through all of life's trials and tribulations. Such an individual cannot waver from their path because it is seemingly embedded in their DNA and naturally expressed in their unique nature. Gump and Button touch the lives of the many people they encounter with magical ease. Their relatives, lovers, and friends stand in awe and respect of the power of how a simple, easy personality is profoundly rooted in ideals, ethics, and morality, which is endearingly miraculous. Gump meets Lt. Dan in Vietnam as his war-wise, superior officer who will eventually berate him for not leaving him to die on the field of battle. In their last scene together, Dan is a surprise guest at the wedding of Gump and Jenny, and you can see the esteem in which he holds Gump. Button's biological father, a wealthy businessman in New Orleans, surreptitiously befriends his son. He soon reveals his paternity and admits the cowardice of leaving him on Queenie's doorstep after seeing his appearance at birth as a tiny, shriveled old man. Benjamin displays a moment of frustrated despair and anger, but soon returns to reconcile in a most wonderous way as his father is dying, carrying him to a bench where he can gaze in peace at the rising orange sun on the distant horizon across the waters of the Gulf. The way that the elder Button glances at Benjamin reveals his silent understanding of how his son has "grown down" to be a man of profound kindness, permeated head to toe by what can only be described as the natural good of "The Innocent."
Happy 2021! 2020 saw a surge in pet adoption and foster care, emptying shelters across the country. You may have noticed new furry faces around campus, or maybe you yourself are enjoying the company of a recently adopted companion. We at Natural Selections are eager to meet the new kids on the block this year, and we hope you enjoy reading about them, too! Pet owners who would like their furry, feathered, or scaly companions to be featured should direct their correspondence to agoldfarb@rockefeller.edu.

For this issue, I interviewed **Yofi the dog**, the best bud of **Dani Keahi** (Rockefeller University Ph.D. Candidate). Every encounter I’ve had with Yofi in the three years that I’ve known him has centered around fetch. Although this is always a treat—his athleticism is remarkable—I was curious to delve into more serious topics. Yofi is a tough nut to crack but at his core is a tranquil and thoughtful soul.

**Audrey Goldfarb**: How old are you? In human years?
Yofi: 4 years old!

**AG**: How did you first meet Dani?
Yofi: We met in Hawai’i where both of us were born. I was the size of a guinea pig when I met mom, she bought me my first ball, and I knew I’d follow her anywhere! I was also very good and quiet on the long flight to NYC at only 12 weeks old.

**AG**: Is there a story behind your name?
Yofi: Yofi means beautiful or good in Hebrew, so you could say that Yofi is yofi.

**AG**: If I promise to play fetch after this, can you sit still for 10 minutes?
Yofi: I will TRY. But please hide the ball for the duration or I will go nuts.

**AG**: Do you have a favorite ball?
Yofi: ALL balls are my favorite and ball is life!

**AG**: What are your favorite foods?
Yofi: WET FOOD. But also, mom and dad give me a bit of filet mignon on my birthday.

**AG**: Do you have a favorite food?
Yofi: I am excited to try new and exotic balls in Seattle. What will it be like to fetch in the rain?

**AG**: What will you miss most about NYC?
Yofi: So many friends who indulge me by throwing the ball! Shoutout to Uncle Isaac, Uncle Samer, and Uncle Phil for taking such good care of me when mom and dad travel.

**AG**: What are your top three favorite things to do/places to go in the city?
Yofi: 1) Outdoor dining, 2) Fetching the ball at Carl Schurz dog park, 3) long walks around Central Park.

**AG**: Do you ever get tired?
Yofi: Not really. I’m actually a very capable hiker and have summited Mt. Marcy, Mt. Algonquin, and Big Slide in the Adirondacks.

**AG**: What is your biggest responsibility?
Yofi: Letting people know if there is an idle ball present in any room I enter.

**AG**: What is your biggest weakness?
Yofi: I do not like music. I do not like anything with violins, “All I Want for Christmas is You” by Mariah Carey, big band, jazz, or orchestral movie soundtracks. Makes me howl.

**AG**: What is your favorite thing about yourself?
Yofi: My passion for ball! It makes mom more motivated to pursue her favorite things in life with a dogged determination. Hopefully this means more balls for me in the future.

**AG**: What is your favorite thing about Dani?
Yofi: We go together like peas and carrots.

**AG**: How do you feel about other humans? How about other non-human animals?
Yofi: I love all people and very much miss when many humans can gather around me indoors and take turns throwing the ball. I like most other dogs, but puppies sometimes freak me out. I tolerate my guinea pig sister, Bernadette.

**AG**: What would Dani do without you?
Yofi: She wouldn’t know what to do with herself!