













Martha Mooke, with the The Chamber Orchestra of Philadelphia (above), as well as the Portland Cello Project (at right) will be performing at Annenberg Center's Harold Prince Theatre.



7KH\ODGHOSKLDQV\LDLWLRQVZKDWD\DGH\ZLW\ Philadelphia has been shaped by a long history of diverse cultures and traditions. In *The Philadelphians*, the Chamber Orchestra explores the populations that migrated to and influenced the city, uncovering a unique, shared identity. Audiences will experience two periods in time, a contrast of colonial-era early music with new works that look back on Philly's history. Along with junto-style discussion groups, period performance and modern interpretations will connect the audience with those who created the cultural landscape.

Who is Philadelphia? What can we learn from our heritage, and how will our city be changed by new waves of immigrants? Join us as we examine our ancestry through music and discover how we came to be Philadelphians.

The 2018-2019 season's focus is *African American and English Colonial Experience* with the first performance by The Chamber Orchestra of Philadelphia: *Origins & Diaspora* on Wednesday, October 17 at 7:30 p.m. The program will include West African musical traditions and influences in classical music.

This will be a unique, interactive chamber music experience with members of The Chamber Orchestra of Philadelphia. Performing in the round, host Jim Cotter will provide background and insight on each work and lead conversations with the musicians between pieces. The performance concludes with a casual audience Q&A. Tickets: <https://tickets.annenbergcenter.org>

The 3RUWODQGE\HOORE\UMKHSV\ Annenberg Center Debut at 8 p.m. on Saturday, October 20, performing Radiohead's *OK Computer* and more. Cellos and Radiohead were meant to collide, and the results are seriously epic. Portland's premiere alt-classical group, complete with brass, percussion and vocals, pays tribute to Radiohead with a unique spin on music from the band's *OK Computer* album and other favorites. "Every piece is treated with equal sincerity and arranged not just to invoke the original but deconstruct and re-imagine its essence." (*Seattle Times*) Expect an evening "where boundaries are blurred and cellos are in abundance." (*The Strad*)

RXOE\QJV\QVSLULQJERPHQ\I\HPHU\ will have a world premiere on Sunday, October 28 at 4 p.m.—a one-night-only special event—where 12 women will be breathing contemporary life into the centuries-old tradition of Eastern European Jewish folk music at Annenberg Center's Zellerbach Theatre. The brainchild of fourth generation klezmer musician and concert artistic director Susan Watts, this performance was created from the world-renowned trumpeter's concern for the future of her art and appreciation of every individual involved.

"Soul Songs is about the old and new intertwined," said Ms. Watts, a 2015 Pew Fellow. "It is future provoking, intuitive, grass roots. *Soul Songs* is about these women's musical journeys, their artistry and their discernment to use the force of adversity to their gain. It is the klezmer of today and a prelude to future possibilities for the art and the communities it nurtures." *Soul Songs* will feature new compositions, written and performed by three generations of women who bring contemporary meaning to this traditional music. Major support has been provided to the Philadelphia Folklore Project by The Pew Center for Arts & Heritage.

Tickets: <https://tickets.annenbergcenter.org>

**U\H\ERNSODFH**

The University of Pennsylvania is committed to maintaining a drug-free workplace for the health and safety of the entire Penn community. Drug and alcohol abuse can harm not only the users but also their family, friends and coworkers. As Penn observes National Drug-Free Work Week, please take the time to review the University's drug and alcohol policies.

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Penn prohibits the unlawful manufacture, distribution, dispensation, sale, possession or use of any drug by its employees in its workplace. Complete policy details are available online:

UXJ\HHER\UNSODFH\EROLF <https://www.hr.upenn.edu/policies-and-procedures/policy-manual/performance-and-discipline/drug-free-workplace>

7KH\LYHVLW\DFRKROD\QGE\OLF <https://catalog.upenn.edu/pennbook/alcohol-drug-policy>

**Understanding Addiction**

Addiction is a serious disease, but many effective treatments are available. Visit the Health Advocate at <http://www.healthadvocate.com/upenn> for facts about addiction, recovery and support services.

**Help Is Here**

If you or a family member has a substance abuse problem, we encourage you to seek help. Penn provides free, confidential counseling services for you and your immediate family members through the Employee Assistance Program (EAP). The EAP will assist you with challenges that may interfere with your personal or professional life, including substance abuse.

For more information about the EAP's counseling and referral services, visit the Employment Assistance Program web page at <https://www.hr.upenn.edu/eap> or contact the Employee Assistance Program 24 hours a day, 7 days a week at (866) 799-2329.

You can also refer to Penn's addiction treatment publication for information about treatment benefits and resources at <https://www.hr.upenn.edu/docs/default-source/benefits/opioid-brochure.pdf>

**BioArt and Bacteria at the EKG**

A solo exhibition by internationally acclaimed British artist Anna Dumitriu will open at the Esther Klein Gallery on Thursday, October 18. *BioArt and Bacteria* explores our relationship with the microbial world and the history and future of infectious diseases. An artist lecture will be held on Thursday, October 18 at 5 p.m., immediately followed by the exhibit's opening reception 6-8 p.m. at the gallery.

To register, visit <https://sciencecenter.org/engage/bioart-and-bacteria-artist-lecture-and-opening-reception>

The exhibit runs through November 24.

*Pneumothorax Machine* by Anna Dumitriu

**Penn's Way 2019  
Raffle Prize Listing  
Week One Winners**

Office Depot: Supply Basket (\$100); Kara Eller, HUP  
Philip Rosenau Co., Inc.: Walmart gift card (\$50); Orjana Kurti, CPUP  
Fisher Scientific: Home Depot gift card (\$50); Susan Sorenson, SP2  
Fisher Scientific: Lowe's gift card (\$50); Geoffrey Filinuk, ISC  
Specialty Underwriters LLC: Amazon gift card (\$100); Shynita Price, UPHS Corporate  
Philadelphia Eagles: Carson Wentz autographed 8x10 photo (\$50); Joanne DeLuca, CPUP

**Week Three  
Drawing: October 22, 2018**

Visit [www.upenn.edu/pennsway](http://www.upenn.edu/pennsway) for more information about the raffle and making a pledge. Entries must be received by 5 p.m. on the prior Friday for inclusion in a given week's drawing. Note: List is subject to change.

Sponsor: prize (value)  
Philip Rosenau Co., Inc.: Walmart gift card (\$50)  
Fisher Scientific: ExxonMobil gift card (\$50)  
Fisher Scientific: Old Navy gift card (\$50)  
Philadelphia Eagles: Chris Long autographed Super Bowl LII mini helmet (\$30)  
Starr Restaurants: Parliament Coffee Bar gift bag (\$75)  
Gift Baskets for Thought: Penn-Themed gift basket (\$100)  
Philadelphia Flyers: Signed memorabilia (\$35)

**Ideas in Motion: Lunchtime Running—with a Lecture**

The Annenberg (Lunchtime) Running Club is launching *Ideas in Motion*, a monthly series of scripted lectures delivered by area experts (primarily Penn faculty, staff or students) that take place while running. Presenters prepare a lightning-fast, 4-minute lecture on a topic of their choice followed by a 15-minute Q&A, all held at a conversational (slow, that is) running pace through Penn's campus. This will provide runners with both the recommended 20 minutes of daily cardiovascular activity and the chance to learn about new and interesting things. The inaugural lecture was delivered by Emily Falk, associate professor of communication at Annenberg, who discussed fMRIs and decision-making.

The Annenberg (Lunchtime) Running Club is an informal group of faculty, staff and students. The club began at the Annenberg School but has grown to include members from across campus and is open to anyone regardless of affiliation. Typically, the group runs during lunch three times a week and trains together for area races such as the Broad Street Run.

Upcoming *Ideas in Motion* Lectures  
Runs will start at Annenberg Plaza.

October 19, 11:30 a.m.: Zane Cooper, PhD student at Annenberg, "Blockchain Technology."

November 19, noon: Damon Centola, associate professor of communication at Annenberg, director of the Network Dynamics Group, "How Ideas Spread Through Human Networks."

December 17, noon: Jennifer Swerida, post-doctoral fellow, Penn Museum, "Archaeology and Alternative Pathways to Social Complexity in the Sultanate of Oman."

Have an idea for someone who should give a talk?

Or want to work on your own elevator pitch? Or, just want to run? Join the Annenberg (Lunchtime) Running Club: <https://groups.google.com/forum/#!forum/annenbergrunningclub/join>



**Update**

October AT PENN

**TALKS**

**19** *The History, Theory and Practice of Administrative Constitutionalism*; 2018 University of Pennsylvania Law Review Symposium; 1 p.m.; Penn Law; info and to register: [www.pennlawreview.com/symposium](http://www.pennlawreview.com/symposium) Through October 20.

**25** *From Inquiry to Innovation: How a Clinical Question Became a Business Opportunity*; Kathryn Bowles, nursing; 3 p.m.; Fagin Hall; RSVP: <https://tinyurl.com/y82xfnha>

*Public Health vs. the Viruses: A Match-up for the Century*; CPHI Seminar Series; Anne Schuchat, CDC; 3 p.m.; Rubenstein Auditorium, Smilow Center; Center for Public Health Initiatives, Penn Dental, Prevention Research Center, Student Health Service).

**AT PENN Deadlines**

The October AT PENN is online. The November AT PENN will be published *October 30*. The deadline for the weekly Update is the Monday of the week prior to the issue. The deadline for the December AT PENN is *November 5*.

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3910 Chestnut Street, 2nd floor  
Philadelphia, PA 19104-3111  
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**The University of Pennsylvania Police Department  
Community Crime Report**

**About the Crime Report:** Below are the Crimes Against Persons or Crimes Against Society from the campus report for **October 1-7, 2018**. Also reported were 11 Crimes Against Property (1 burglary, 2 frauds and 8 thefts). Full reports are available at: <https://almanac.upenn.edu/sections/crimes> Prior weeks' reports are also online. —Eds.

This summary is prepared by the Division of Public Safety and includes all criminal incidents reported and made known to the University Police Department for the dates of **October 1-7, 2018**. The University Police actively patrol from Market St to Baltimore Avenue and from the Schuylkill River to 43rd St in conjunction with the Philadelphia Police. In this effort to provide you with a thorough and accurate report on public safety concerns, we hope that your increased awareness will lessen the opportunity for crime. For any concerns or suggestions regarding this report, please call the Division of Public Safety at (215) 898-4482.

10/2/18	5:00 PM	3900 Walnut St	Confidential
10/2/18	7:39 PM	4000 Locust Walk	Complainant assaulted by offender
10/5/18	2:30 AM	3401 Spruce St	Unknown male touched complainant inappropriately
10/6/18	2:16 AM	3549 Chestnut St	Altercation between boyfriend and girlfriend
10/7/18	9:17 PM	3000 Chestnut St	Complainant assaulted by partner/Arrest

**18th District**

Below are the Crimes Against Persons from the 18th District: 9 incidents (1 robbery, 1 assault, 1 indecent assault, 2 aggravated assaults and 4 domestic assaults) were reported **October 1-7, 2018** by the 18th District covering the Schuylkill River to 49th Street & Market Street to Woodland Avenue.

10/1/18	8:51 PM	4806 Market St	Robbery
10/2/18	5:00 PM	3900 Walnut St	Indecent Assault
10/2/18	7:59 PM	40th & Locust Sts	Assault
10/3/18	6:21 PM	4901 Chestnut St	Aggravated Assault
10/3/18	9:44 PM	47th & Springfield Ave	Domestic Assault
10/5/18	6:23 PM	4500 Baltimore Ave	Domestic Assault
10/6/18	2:52 AM	3549 Chestnut St	Domestic Assault
10/6/18	11:11 AM	48th & Spruce Sts	Aggravated Assault
10/7/18	9:18 PM	30th & Chestnut Sts	Domestic Assault

The University of Pennsylvania's journal of record, opinion and news is published Tuesdays during the academic year, and as needed during summer and holiday breaks. Its electronic editions on the Internet (accessible through the Penn website) include HTML, Acrobat and mobile versions of the print edition, and interim information may be posted in electronic-only form. Guidelines for readers and contributors are available on request and online.

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### Prenatal Gene Editing for Treating Congenital Disease

For the first time, scientists performed prenatal gene editing to prevent a lethal metabolic disorder in laboratory animals, offering the potential to treat human congenital diseases before birth. Published in *Nature Medicine*, research from the Perelman School of Medicine at the University of Pennsylvania and the Children's Hospital of Philadelphia (CHOP) offers proof-of-concept for prenatal use of a sophisticated, low-toxicity tool that efficiently edits DNA building blocks in disease-causing genes.

The team reduced cholesterol levels in healthy mice treated in utero by targeting a gene that regulates those levels. They also used prenatal gene editing to improve liver function and prevent neonatal death in a subgroup of mice that had been engineered with a mutation causing the lethal liver disease hereditary tyrosinemia type 1 (HT1).

HT1 in humans usually appears during infancy, and it is often treatable with a medicine called nitisinone and a strict diet. However, when treatments fail, patients are at risk of liver failure or liver cancer. Prenatal treatment could open a door to disease prevention for HT1 and potentially for other congenital disorders.

"Our ultimate goal is to translate the approach used in these proof-of-concept studies to treat severe diseases diagnosed early in pregnancy," said study co-leader William H. Peranteau, a pediatric and fetal surgeon in CHOP's Center for Fetal Diagnosis and Treatment and assistant professor of surgery in the Perelman School of Medicine. "We hope to broaden this strategy to intervene prenatally in congenital diseases that currently have no effective treatment for most patients and result in death or severe complications in infants."

In this study, the scientists used base editor 3 (BE3) to form a partially active version of the CRISPR-Cas 9 tool and harnesses it as a homing device to carry an enzyme to a highly specific genetic location in the liver cells of fetal mice. The enzyme chemically modified the targeted genetic sequence, changing one type of DNA base to another. BE3 does not fully cut the DNA molecule and leave it vulnerable to unanticipated errors when the cut is repaired, as has been seen with the CRISPR-Cas9 tool.

After birth, the mice in the study carried stable amounts of edited liver cells for up to three months after the treatment, with no evidence of unwanted, off-target editing at other DNA sites. In the subgroup of the mice bioengineered to model HT1, BE3 improved liver function and preserved survival. The BE3-treated mice were also healthier than mice receiving nitisinone, the current first-line treatment for HT1 patients. To deliver CRISPR-Cas9 and BE3, the scientists used adenovirus vectors, but they are investigating alternate delivery methods such as lipid nanoparticles, which are less likely to stimulate unwanted immune responses.

### Regrowing Dental Tissue with Baby Teeth Stem Cells

When trauma affects an immature permanent tooth, it can hinder blood supply and root development, resulting in what is essentially a "dead" tooth. Until now, the standard of care has entailed a procedure called apexification that encourages further root development, but it does not replace the lost tissue from the injury and causes root development to proceed abnormally.

New results from a clinical trial, jointly led by Songtao Shi of the University of Pennsylvania and Yan Jin, Kun Xuan and Bei Li of the Fourth Military Medicine University in Xi'an, China, suggest that there is a more promising path: using stem cells extracted from the patient's baby teeth. Dr. Shi and colleagues have learned more about how these dental stem cells, called human deciduous pulp stem cells (hDPSC) work and how they could be safely employed to regrow dental tissue, known as pulp.

The Phase 1 trial, conducted in China, enrolled 40 children who had each injured one of their permanent incisors and still had baby teeth. Thirty were assigned to hDPSC treatment and 10 to the control treatment, apexification. Those who received hDPSC treatment had tissue extracted from a healthy baby tooth. The stem cells from this pulp were allowed to reproduce in a laboratory culture, and the resulting cells were implanted into the injured tooth. Upon follow-up, the researchers found that patients who received hDPSCs had more signs than the control group of healthy root development and thicker dentin, the hard part of a tooth beneath the enamel, as well as increased blood flow. At the time the patients were initially seen, all had little sensation in the tissue of their injured teeth. A year following the procedure, only those who received hDPSCs had regained some sensation.

While using a patient's own stem cells reduces the chances of immune rejection, it is not possible in adult patients who have lost all of their baby teeth. Dr. Shi and colleagues are beginning to test the use of allogenic stem cells, or cells donated from another person, to regenerate dental tissue in adults. They are also hoping to secure FDA approval to conduct clinical trials using hDPSCs in the United States. Eventually, they see even broader applications of hDPSCs for treating systemic disease, such as lupus.

### Reducing Political Polarization on Climate Change

Social media networks may offer a solution to reducing political polarization, according to new findings published in the *Proceedings of the National Academy of Sciences* from a team led by Damon Centola, associate professor of communication in Penn's Annenberg School for Communication and the director of the Network Dynamics Group.

Researchers asked 2,400 Republicans and Democrats to interpret recent climate-change data on Arctic sea-ice levels. Initially, nearly 40 percent of Republicans incorrectly interpreted the data, saying that Arctic sea-ice levels were increasing; 26 percent of Democrats made the same mistake. However, after participants interacted in anonymous social media networks—sharing opinions about the data and its meaning for future levels of Arctic sea ice—88 percent of Republicans and 86 percent of Democrats correctly analyzed it.

Republicans and Democrats who were not permitted to interact with each other in social media networks but had several additional minutes to reflect on the climate data before updating their responses remained highly polarized and offered significantly less accurate forecasts.

Dr. Centola, along with Penn doctoral student Douglas Guilbeault and recent Penn PhD graduate Joshua Becker, constructed an experimental social media platform to test how different kinds of social media environments would affect political polarization and group accuracy. The researchers randomly assigned participants to one of three experimental social media groups: a political-identity setup, which revealed the political affiliation of each person's social media contacts; a political-symbols setup, in which people interacted anonymously through social networks but with party symbols of the donkey and the elephant displayed at the bottom of their screens; and a non-political setup, in which people interacted anonymously. Twenty Republicans and 20 Democrats made up each social network. Once randomized, every individual then viewed a NASA graph with climate change data as well as forecasted Arctic sea-ice levels for the year 2025. They first answered independently, and then viewed peers' answers before revising their guesses twice more.

"We were amazed to see how dramatically bipartisan networks could improve participants' judgments," said Dr. Centola. In the non-political setup, for example, polarization disappeared entirely, with more than 85 percent of participants agreeing on a future decrease in Arctic sea ice.

"But," Dr. Centola added, "...the improvements vanished completely with the mere suggestion of political party."

### New Insights on Interprofessional Health-Care Training

A recent research study led by Zvi D. Gellis, director of the Center for Mental Health & Aging and the Ann Nolan Reese Penn Aging Certificate Program at Penn's School of Social Policy & Practice, demonstrates the positive impact of utilizing Interprofessional Education (IPE) simulation-based training to instruct health professions students in team communication.

The federally funded study, led by Dr. Gellis and his health professions colleagues from Penn and the University of the Sciences, reports on outcomes of a simulation-based "real-world" training among a large group of health professions students comprised of medicine, nursing, chaplaincy and geriatrics social work scholars (from the Penn Aging Certificate Program), as well as University of the Sciences occupational, physical therapy and pharmacy students.

Dr. Gellis and his research partners examined a comprehensive set of outcomes overlooked in previous work, including attitudes towards health-care teams, self-efficacy in team communication, interprofessional collaboration and satisfaction with the simulation. The research team chose a geriatrics-palliative case study because this specialty has grown significantly in the US. Interprofessional teams frequently treat older patients with prevalent and complex chronic illnesses. Following the training, team communication self-efficacy scale scores and interprofessional collaboration scores increased among the health professions students. In addition, all participants reported more positive attitudes towards working in health-care teams and reported high satisfaction scores, post-simulation.

The study, published in the journal *Gerontology & Geriatrics Education*, revealed many advantages to simulation training in health-care education. Simulation training enables students to practice clinical skills in real time among peers and faculty, without jeopardizing the safety of actual patients, and it affords the opportunity to receive immediate patient feedback within a supportive learning environment. Meanwhile, faculty have the chance to lead by example by discussing the significance of interprofessional team roles, participant recruitment in simulation learning with other disciplines, and modeling positive and professional clinical team behaviors. Simulation training can improve performance and self-efficacy in real-world clinical settings, resulting in a better experience for patients and their caregivers.