ANNUAL REPORT 2015-2016

MONELL CENTER
SENSING THE FUTURE
THE MONELL CHEMICAL SENSES CENTER IS AN UNRIVALED MULTIDISCIPLINARY NONPROFIT RESEARCH INSTITUTION LEADING THE WORLD TO A BETTER UNDERSTANDING OF TASTE AND SMELL.

EVERY DAY, MONELL SCIENTISTS MAKE DISCOVERIES ABOUT HOW OUR BODIES DETECT AND RESPOND TO CHEMICAL MOLECULES IN THE WORLDS WITHIN AND AROUND US. OUR WORK GUIDES POLICIES AND INSPIRES PRODUCTS THAT ENABLE HEALTHIER DIETS, SAFER ENVIRONMENTS, AND MORE POWERFUL WAYS TO MEET PRESSING HEALTH CHALLENGES—FROM OBESITY TO INFECTIOUS DISEASES TO ALZHEIMER’S DEMENTIA.

AT MONELL, WE CREATE AND SHARE KNOWLEDGE TO GUIDE REAL-WORLD ADVANCES IN POLICY, PRACTICE, AND BEHAVIOR.
Have you ever looked at something and suddenly seen the whole world in a completely different way? That is what is happening right now at Monell. Our remarkable new discoveries shed light on how chemosensory receptors detect and mount defenses against potentially deadly pathogens, and how bodily odors can be used to diagnose disease and monitor treatment success. This past year was a time of great excitement and opportunity at Monell; we truly are sensing the future. Our science continues to illuminate significant undiscovered roles for these primal senses and their underlying receptors, identifying translational opportunities to lead us to a healthier, safer tomorrow.

Because of you and your strong support of Monell, we moved toward that tomorrow through a strategic investment in biomedical exploration. We worked individually and collectively in multidisciplinary teams, asking and answering questions that no one had posed before. We published our findings, some 67 papers this year alone, and delivered talks around the globe, leading the world to a better understanding of the power and potential of taste and smell receptors. We embarked on new strategic partnerships with individuals and organizations; for instance, aligning with the Brain Health Registry to improve understanding of the relationship between olfactory decline and neurodegenerative disease. We informed the otolaryngologists who treat patients with anosmia, loss of the sense of smell. We trained promising young scientists, giving them the tools to become productive participants in the global biomedical science workforce. We contributed crucial knowledge about the triumvirate of salt, sugar, and fat and its role in our dietary health. We partnered with our corporate sponsors to form academic-industry consortia that further this work, enabling us to solve fundamental problems collectively. We took our research out of the lab and into the community to address public health concerns, from limiting the amount of sugar our children eat to cost-effectively ameliorating the stench of public toilets in India.

This annual report highlights some of our most exciting successes over the past year. We also face challenges in carrying out our mission—for example, a considerable decline in federal funding for research. Please know that we are re-doubling our efforts to ensure our strong future. As we look toward our 50th anniversary in 2018, we are proud that all of you—our donors and our sponsors—have been with us on this journey of discovery, joining forces with us to support our scientific venture. Your ongoing partnership will be essential as we continue to advance and answer questions of far-reaching importance. Together, we are positioning the chemical senses as a vital lever in pursuit of a healthier, safer tomorrow.

Your opportunity to participate in our pioneering endeavor will grow as we approach our milestone anniversary. Thank you for being a part of Monell’s journey.

Robert F. Margolskee, MD, PhD
President and Director, Monell Chemical Senses Center

Dwight R. Riskey, PhD
Chairman of the Board, Monell Chemical Senses Center
SENSING THE FUTURE

TARGETING SUGAR REDUCTION

WHAT HAPPENS WHEN YOU HAVE TOO MUCH OF A GOOD THING? ONCE A SCARCE COMMODITY, SUGAR NOW IS EVERYWHERE, ASSOCIATED WITH HIGH RATES OF DIET-RELATED DISEASES SUCH AS OBESITY AND DIABETES, AND EVEN INCREASING RISK FOR CARDIOVASCULAR DISEASE IN OUR CHILDREN.

Policy guidelines from public health organizations worldwide call for us to reduce our intake of sugar. But that’s easier said than done, in part because we are born liking sweet—it’s a biological imperative.

Over the past year, Monell science focused on understanding, on multiple levels, the ways we sense sweetness. The goal: to provide basic knowledge that will inform evidence-based strategies for reducing sugar consumption and improving public health worldwide.
MOLECULAR BIOLOGY
Robert Margolskee’s lab identified the presence of digestive enzymes, previously found only in the gut, in sweet taste cells on the tongue. These enzymes break down complex sugars like sucrose—table sugar—into simple sugars that can be detected by both of the tongue’s sugar-sensing taste pathways. The finding has both basic and practical implications. “We now have a better understanding of how sweet taste works and may have even identified a way to make a sugar substitute that tastes good but has no calories,” says Margolskee.

SENSORY GENETICS
Some of us just seem to like sugar more than others. Understanding the hows and whys of individual differences in sweet detection and liking is critical to shaping broadly effective sugar-reduction policies. With this in mind, behavioral geneticist Danielle Reed and developmental psychobiologist Julie Mennella measured the sweet taste threshold of over 200 children. Using varying amounts of sugar dissolved in water, they discovered up to a 20-fold difference from child to child in the ability to detect sweetness, differences in sensitivity that relate in part to underlying taste genes. “Just as some children are born with poor eyesight, others have a poor ability to detect sweetness,” Reed explains. “When dealing with sugar-reduction in their diets, these less-sensitive children may have a harder time.” Recognizing the existence and genetic basis of individual differences may prove key to future strategies for combating diet-related diseases.

PERCEPTION
Preference is a major driver of food intake. In other words, we eat what we like—and most of us like sweet taste. Sensory psychologist Paul Wise and behavioral biologist Gary Beauchamp asked if the perceived sweetness and pleasantness of foods can be shifted by varying the amount of sugar we eat, just as earlier Monell studies revealed we can adjust our salt preferences. When people reduced their daily sugar intake by 40 percent for three months, they rated test foods as sweeter than before. However, unlike the case for salt, they still preferred the same amount of sugar in foods as they did previously. When the sugar restriction was removed, they quickly returned to their previous levels of sugar intake. These findings imply that people may resist changes to sugar levels in the diet more ardently than changes to salt, and that recalibrating people’s sweet preferences may be more difficult than for salt, pointing to the need for other strategies.

Together, these and other Monell studies provide a framework for further exploration of the human drive for sweet taste—a powerful force we need to understand as we advance toward the ultimate goals of better eating and better health.

INFORMING HEALTH POLICY
This past year, Monell science helped inform new recommendations from several public health organizations aimed at improving nutritional health. Julie Mennella contributed her expertise on the development of taste and smell preferences to the World Health Organization’s Commission on Ending Childhood Obesity. Mennella’s written report appeared as part of a discussion of risk factors for pediatric obesity and potential areas for intervention. Meanwhile, research conducted by Gary Beauchamp and colleagues provided a foundation for the FDA’s 2016 draft guidelines for industry reduction of sodium in foods. The new guidelines were issued in response to an Institute of Medicine report that recommended a slow reduction of sodium in the US food supply, based in part on the Monell team’s research showing that people can adjust to and accept diets containing lower levels of sodium.
Over the past decade, we have learned that components of the oral taste system are in fact located throughout our bodies, where their function is just beginning to be understood. For example, just as bitter receptor cells in the mouth detect potential toxins, related cells sense pathogens in our airways and intestines. The implications appear to be far-reaching.

THE TASTE OF DANGEROUS PATHOGENS

THIS PAST YEAR, MONELL RESEARCH PROVIDED NEW INSIGHT INTO HOW SENSORY CELLS THROUGHOUT THE BODY HELP DETECT DANGEROUS INVADERS, FROM HARMFUL BACTERIA TO PARASITIC WORMS. THE BENEFITS OF THIS WORK COULD HAVE WIDESPREAD GLOBAL HEALTH CONSEQUENCES THAT EXTEND FROM NOVEL THERAPIES FOR FIGHTING DEBILITATING INTESTINAL PARASITES TO NONINVASIVE TECHNIQUES FOR PREDICTING THE EFFICACY OF SINUS SURGERY.

Over the past decade, we have learned that components of the oral taste system are in fact located throughout our bodies, where their function is just beginning to be understood. For example, just as bitter receptor cells in the mouth detect potential toxins, related cells sense pathogens in our airways and intestines. The implications appear to be far-reaching.
**FIGHTING PARASITIC INVADERS**

New advances in understanding an enigmatic taste-related cell type in the intestines could help reduce a global healthcare problem: disease caused by parasitic worms. These worms infect approximately two billion people worldwide. Many are children, for whom parasitic infections cause anemia, stunted growth, and cognitive impairment.

Tuft cells—chemosensory cells in the intestines with similarities to taste cells on the tongue—may provide the pathway to a solution. Monell scientists Ichiro Matsumoto and Robert Margolskee each recently contributed to pioneering collaborative studies showing that tuft cells mediate intestinal immune responses to several species of parasitic worms, enabling the body to eliminate the harmful invaders.

As part of an international collaboration looking at immune system responses to parasitic worms, Matsumoto leveraged previous studies from his lab showing that the protein called Pou2f3 is necessary to make chemosensory cells that detect irritants in the airways. His participation in the newest study was essential to the team’s ability to show that this same protein also is needed for the body to generate intestinal tuft cells, and importantly, that these cells are critical to the immune system’s response to parasitic worms.

Adding to the evidence that tuft cells act as chemosensory sentinels in the intestines, a separate multi-institutional study involving the Margolskee lab showed that taste-cell proteins within tuft cells are essential to the cells’ ability to detect parasites and initiate immune responses.

Together, these studies help open the way for novel medical therapies that could boost immune responses to intestinal worms by activating tuft cells—a breakthrough that could radically reduce the incidence of crippling parasitic infection in children on a global basis.

**OPTIMIZING TREATMENT FOR A PREVALENT CHRONIC DISEASE**

Chronic rhinosinusitis, or CRS, affects more than 35 million Americans and accounts for 20 percent of adult antibiotic prescriptions. CRS can be difficult to treat: many patients do not respond to antibiotics and elect to undergo sinus surgery, yet 25 percent of surgical patients still suffer from symptoms afterward. Fortunately, physicians may soon be able to optimize treatment plans for CRS patients just by handing each patient a vial of clear liquid and asking, “How bitter does this taste?”

A team led by University of Pennsylvania physician and Monell adjunct faculty Noam Cohen, MD, PhD, and Monell taste geneticist Danielle Reed, PhD, is focusing on one of the 25 different types of bitter taste receptors in the mouth. Designated the T2R38 receptor, it detects a class of plant compounds known as goitrins, found in vegetables such as Brussels sprouts and kale. We each have one of several different forms of this receptor, making some of us highly sensitive to the bitterness of goitrins—while others do not taste it at all.

The researchers previously discovered that airway T2R38 receptors also vary in sensitivity from person to person, reflecting the same pattern as in the mouth. Further, people with the bitter-insensitive taste and airway receptor are more susceptible to upper respiratory bacterial infections and at greater risk for developing CRS.

Moving forward, the newest study examined treatment ramifications and found that non-sensitive bitter tasters are less likely to report improvement following endoscopic sinus surgery. “We need to see if these non-tasters get more relief from more aggressive surgical approaches,” says Cohen. If so, a simple taste test could soon guide a patient’s individualized surgical treatment plan, speeding the process of identifying the most effective intervention.
YOU COULD SAY THAT CELLULAR PHYSIOLOGIST JOHANNES REISERT HAS A NOSE FOR DISCOVERY. REISERT'S RESEARCH FOCUSES ON ONE OF THE FIRST STEPS OF ODOR DETECTION: HOW THE Olfactory RECEPTOR CELLS IN OUR NOSE CONVERT ODOR INFORMATION FROM AN INCOMING MOLECULE INTO AN ELECTRICAL SIGNAL THAT CAN BE PROCESSED BY THE BRAIN.
**MYSTERY**

Our ability to smell depends on a complex sequence of molecular events within olfactory receptor cells in the nose. This molecular cascade enables the receptor cells to interpret information from the thousands of different odor molecules arriving at any one time to provide us with detailed information about our surrounding world. Scientists have long known that a molecule called olfactory marker protein (OMP) is involved, but until this year nobody knew how.

Reisert solved the 30-year-old mystery of what OMP does by showing that it helps regulate how quickly and accurately odor information travels from the receptor cells to the brain. The way in which OMP does this depends on which of our hundreds of olfactory receptors is involved. This unexpected insight will be critical to further investigations. “The implication that you have to know which odorant receptor is expressed when studying the transduction mechanisms in any given cell certainly will guide our future research,” explains Reisert.

**POTENTIAL**

Reisert’s nose for discovery extends beyond the bench. Appointed this year as co-director (along with Danielle Reed) of Monell’s Postdoctoral Training Program, he plays a key role in carrying out the Center’s long-term training mission to prepare new generations of independent scientists in taste and smell biology.

In his own lab, Reisert currently mentors two postdoctoral fellows pursuing vastly different projects. Together, they epitomize how the training program bolsters the future of chemosensory science by exposing junior scientists from diverse fields to an environment of collaborative and interdisciplinary research.

Cell biologist David Scheiblin uses state-of-the-art super-resolution microscopy to study receptor distribution on the olfactory cells. The goal is to better understand how the olfactory receptors interact with the underlying cell to influence the signals sent to the brain. Akihito Kuboki, who has a medical degree, focuses on the mechanisms of olfactory adaptation—roughly, how the receptor cells know when to pay attention to a given odor. His intention is to contribute to clinical knowledge related to smell disorders.

Reisert’s affinity for nurturing scientific potential extends beyond formal programs. This past summer, he opened his lab doors to Daniel Schein, the 21-year-old founder of Anosmia Awareness Day. Born without a sense of smell and wanting to learn how olfaction functions, Schein (pictured above with Reisert) reached out to request an internship. He subsequently spent the months of June and July working on a project to understand how an intracellular enzyme called phosphodiesterase 4A helps olfactory cells in the nose know where to make their connections in the brain.

Schein hopes to return next summer, wanting to learn more: “Working with Johannes gave me a real appreciation for how cutting-edge scientific research is done.”
At Monell, we know that the questions we answer today will invariably reveal new mysteries to be explored tomorrow—and we are preparing the men and women who will lead this exploration. This past year, more than 60 scientists at all levels of professional development came to the Center to learn about the senses of taste and smell, to gain invaluable technological expertise, and to prepare to lead new advances in the field.
MONELL SCIENCE APPRENTICESHIP PROGRAM 2016

During summer 2016, 19 talented high school and college students spent seven weeks participating in the 35th annual Monell Science Apprenticeship Program, a paid research internship focused on students traditionally underrepresented in the sciences. The 2016 Program was made possible by Altria Client Services, Bedoukian Research, the Dolfinger-McMahon Foundation, the Ellis Trust for Girls, The Christopher Ludwick Foundation, the National Institute for Deafness and Other Communication Disorders, the Philadelphia Activities Fund, the Society of Flavor Chemists, and many individual donors, including Paul Breslin, Eugene Garfield, Robert Harkins, John Labows, and Jeng-chyi Tsai.

TRANSITIONING POSTDOCS INTO TOMORROW’S SCIENTIFIC LEADERS

Monell’s strong postdoctoral training program provides emerging scientists with an exceptionally broad set of skills and viewpoints. This past year, our postdocs published papers in peer-reviewed journals, presented at national and international conferences, and sought specialized training in courses and workshops. Brian Lewandowksi was named the Monell Center’s inaugural Gary K. Beauchamp Director’s Fellow. Made possible by a generous gift from Dr. Louise Slade, the Director’s Fellow position provides three years of salary and research support, establishing a pathway to help transition Monell’s most promising postdoctoral scholars to independent positions in academia, government, and industry.

STRENGTHENING TRANSLATION BY DEVELOPING CLINICIAN-SCIENTISTS

Jennifer Douglas, a fourth-year Penn medical student, spent the year at Monell as part of an initiative to integrate clinical and translational components into the Center’s training. Douglas’s research builds on previous Monell findings showing that differences in bitter taste sensitivity are determined not only by which taste gene variants a person has but also by how much messenger RNA they make. Her project asked the important question of whether this same finding applies to bitter receptors in the nose, which help mount immune responses against bacterial invasion.
As organizations in the food and flavor industry work to identify healthy and good-tasting products for their consumers, many find membership in Monell research consortia to be a highly effective venture.

Exemplifying the benefits of academic-industry partnership at its best, these consortia bring together multiple sponsor companies to work with a selected team of Monell scientists. With funding from the participating companies, the consortia address big research questions using molecular, genetic, physiological, and sensory approaches. These multidisciplinary studies bring greater understanding to questions that have been difficult to answer when addressed from a narrower perspective—questions such as these:

**WHY DO CALORIC SWEETENERS HAVE LONGER-LASTING SWEETNESS THAN SUBSTITUTES?**

In February, a research consortium involving five sponsors concluded a three-year initiative exploring mechanisms of sweet taste adaptation. The findings revealed that taste mechanisms in the oral cavity cause the noncaloric sweeteners Reb A and sucralose to decline in sweetness through a process known as adaptation, more rapidly than simple sugars. When the consortium began its work, many scientists believed that brain mechanisms were largely responsible for taste adaptation. Results from experiments approaching the problem from multiple perspectives demonstrated that this is not the case. The findings
are leading to novel strategies to address the rapid decline in sweetness of noncaloric sweeteners. An important benefit to the companies sponsoring this research is that they have more than a year’s head start to apply these findings to developing proprietary applications before articles from this research begin appearing in the biomedical journals.

**WHY DOESN’T POTASSIUM CHLORIDE TASTE LIKE TABLE SALT?**

Potassium chloride (KCl), the only current salt substitute, is an imperfect one at best, both for medical and taste reasons. Eight companies are currently participating in a research consortium focused on understanding why KCl tastes salty and yet different from the more desirable table salt (sodium chloride, NaCl). A previous Monell salt consortium confirmed that the ENaC ion channel is a key salt taste receptor and also that it does not respond to KCl. Furthermore, when ENaC is disabled, a large component of salty taste remains, indicating that there is another pathway in the oral cavity for tasting salty compounds. The past year brought advances in identifying this second salt pathway, a main goal of the current work. The findings will help companies to develop better-tasting salt substitutes, a key step if the public is to successfully reduce salt consumption as recommended by international public health guidelines.

**WHAT IS THE SENSORY BASIS FOR THE PLEASURE OF FAT?**

Monell is forming a new consortium to investigate the sensory properties of fat taste. An energy-dense macronutrient, fat is avidly (often too avidly) consumed and offers notable sensory pleasure. However, the mechanisms behind this pleasurable experience are poorly understood. Monell researchers have discovered that individuals vary widely in their ability to detect how much fat is in foods. We don't know why. Given this lack of foundational understanding of human fat perception, it is not surprising that reduced-fat foods are not well-accepted and have fared poorly in the marketplace. This new project will focus on determining the relative contributions of taste, odor, and mouthfeel to fat perception and identifying genes involved in the detection of fats.
YOU MAKE OUR DISCOVERIES POSSIBLE

MONELL CENTER DONORS 2015-2016

One of our greatest pleasures is to thank you—the friends, alumni, employees, foundations, and businesses—who support Monell’s research mission through philanthropic gifts and grants. Below, we gratefully recognize your donations received between July 1, 2015, and July 15, 2016.

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GAIL SEY GAL

SUPPORTING EXTRAORDINARY WORK

I worked at Monell for five years and have great memories of those early days, from studies looking at pheromones in deermice to taste tests with lions and tigers at the Philadelphia Zoo. Over the years since, I have admired how Monell has expanded and grown scientifically. I find the work the Center does extraordinary, broadly relevant, and unique in focus. Who else is going to explain why I dislike hot peppers but love wasabi? I now own a restaurant and find that Monell has helped me understand my chef when he talks about balancing the flavors in a recipe.

Turning to a different aspect of the Center’s mission, I support Dr. Preti’s ovarian cancer research because I appreciate how he is using chemical analyses to understand how working dogs are able to detect cancers. It is exciting to think that this work may eventually lead to odor-based devices that can detect this silent killer in its earliest stages.

Honestly, Monell connects all the interrelated circles in my life.
LISA NORRIS-DOWNING AND ARNOLD DOWNING
EXTENDING REMARKABLE LEARNING OPPORTUNITIES

Our daughter Arnelle was a high school apprentice at Monell for years, and the experience was better than we could ever have expected. The work Arnelle did was intensely hands on, and she learned things that her classroom could never give her.

By age 16, Arnelle was a published author, and that’s something that went on her college applications. We can Google her name and find it alongside her mentor, Dr. Michael Tordoff. That’s impressive! Arnelle is now a biology major at Northeastern, getting ready to apply to medical school.

When we learned there was an opportunity to give back to the apprentice program, we wanted to do so right away. We can’t give $10,000, but Monell can count on our support every year. We have talked to Arnelle about giving too, because we think it’s our responsibility to help someone else’s child get the opportunity that our child did.
CONSISTENT LONG-TERM SUPPORT OF THE MONELL CENTER

Below we recognize those who have given $25,000 or more to the Center over its history.

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JOHN LABOWS

ADVANCING A MISSION OF VALUE

I have a long association with the Center, as an alum and later representing my company at corporate sponsor meetings, so I know Monell’s work well and recognize its value.

I am deeply interested in the applications of the chemical senses and in the discoveries Monell generates that will impact the medical field. These range from stem cell regeneration for those who have lost their sense of smell or taste to breakthroughs related to chemical sensing in the digestive system to those promoting overall nutritional health.

I want my support to allow Monell to continue its mission and expand the many promising efforts underway. It’s also important for me to know that I am supporting future scientists as they launch promising careers.
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*deceased

CARLY WILSON
HELPING THOSE WITH A SENSORY LOSS

In seventh grade I was diagnosed with anosmia—told I had no olfactory bulbs and that I had never smelled. When you are deprived of a sense, it changes your life in unexpected ways. It makes you see that senses do so much more than most people realize.

Last year, my grandparents suggested a philanthropy project involving me, my siblings, and my cousins, and asked us each to pick a cause to support. I chose to focus on the theme, “Nobody should have to live without their senses.” I asked for my contribution to go to Monell and to an eye center in my state.

Our family has been fortunate, and we believe it’s important to give back to the community that has helped us. I am now going into my junior year in high school and I want to set up an anosmia awareness day at my school, to build a community of people with anosmia and to help others learn about it.

To make a gift to Monell, please contact Jenifer Trachtman, Director of Development, at 267.519.4715 or jtrachtman@monell.org. Visit www.monell.org/giving to make a secure online contribution. Every effort has been made to ensure the accuracy of these lists. If we have inadvertently misspelled or omitted your name, please accept our apologies and notify Jenifer Trachtman.
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Biomedical research institutes like Monell traditionally rely heavily on competitive grants from the National Institutes of Health (NIH). Many years ago, Monell made the strategic decision to diversify our sources of revenue to help cushion the Center from the effects of potential federal budget cuts to NIH. This proved to be prudent, as NIH funding for research has fallen more than 20 percent since 2003.

Funding for the Monell Center comes from three principal sources: competitive federal grants to our scientists; corporate sponsorship membership and sponsored basic research; and philanthropic donations from individuals and foundations. Support from corporate sponsors and federal grants remains the Center’s principal source of revenue. Total annual revenues dropped 10 percent this past year, largely as a result of expiring NIH grants, which Monell scientists are actively seeking to replace or renew. The shortfall in revenues produced a budget deficit that was covered by Monell reserve funds.

The Center cannot depend on federal funding to the degree that we have in the past. That’s why philanthropic and corporate support for the Center has become increasingly important, more than ever. As Monell expands our efforts to increase critical philanthropic support, we remain grateful for the continued generosity of the Monell Foundation, the Center’s founding funder and still our largest private donor.
TOTAL REVENUES

$13,832,943

- Federal Grants: 36.5%
- Corporate Sponsors: 38.3%
- Federal Grants: 36.5%
- Philanthropy: 15.3%
- Others: 9.9%

TOTAL EXPENDITURES

$14,786,710

- Research Programs: 76.4%
- Administration: 17.8%
- Fundraising: 5.8%
How much do you know about taste and smell science?

Test your knowledge with the 2016 Taste & Smell Quiz at www.monell.org

Educating the public

In April, we hosted Dark & Stormy at a popular Philadelphia coffeehouse. The informative evening of interactive coffee-themed science highlighted how genes and experience both contribute to individual differences in sensory perception and food preferences—including coffee!

Starting stem learning early

Monell partners with Philadelphia’s Franklin Institute throughout the year to help citizens of all ages appreciate how our science relates to their lives. At Community Science Night, we compared individual ‘noseprints’ to engage the curiosity of the city’s littlest scientists.

Conveying scientific insight

On October 6, 2015, Monell inaugurated an exciting new tradition, hosting the first Kunio Yamazaki Lecture. Named in memory of Monell scientist Kunio Yamazaki, and made possible through generous gifts from individuals and companies, the lectureship brings eminent scientists to Monell to speak on topics related to Dr. Yamazaki’s seminal work on odortypes, the genetically determined body odor signatures that distinguish one individual from another. The inaugural event featured Yuzo Ninomiya, PhD, MDSci, Distinguished Professor at Kyushu University and Adjunct Member at Monell, who delivered an informative talk entitled Sweet Taste Genetics, Hormones, and Metabolism.