A Message from Leadership

2020 has been a year like no other. Collectively, as world citizens, we have faced unimaginable challenges, both personal and professional, in every aspect of life.

The COVID-19 pandemic is a once in one-hundred-year worldwide crisis. As chemosensory researchers, we have come to think of 2020 as “The Year of Smell and Taste.” In the early days of the pandemic, as healthcare staff worked heroically beyond their limits caring for the sick, as society retreated into the safety of quarantine, and as the economy shut down, we began to hear evidence of smell and taste loss in patients with COVID-19. Intrigued, energized, and informed by unique expertise backed by decades of ground-breaking discoveries, we quickly mobilized with our colleagues to understand the connection between this novel coronavirus and loss of smell and taste.

This spring, Monell researchers were in the vanguard of the Global Consortium for Chemosensory Research, a consortium of chemosensory researchers from over 50 nations to advance the study of COVID-19.

Since our founding more than 50 years ago, we have established ourselves as the globally recognized leader in advancing the science of taste and smell and fostering the use of this knowledge to improve public health. Our research on these essential, but often neglected senses, has led to policy change and real-world improvements for consumers. By advancing scientific understanding of taste, smell, and related senses, we continue to accomplish our mission to improve human well-being.

Even while pausing in-person human subject research to protect public and staff, we turned to web-based studies to continue our science. We now think of our work in a pragmatic new light. For example, developing a rapid, inexpensive COVID-19 test based on smell loss could lead to safely opening schools and businesses. And re-framing basic findings about immunity in wildlife will inform future strategies for monitoring animal populations for infectious disease. As an institution, we are also proud that during the economic challenges of the pandemic, we have not furloughed any employees or reduced salaries.

Monell’s global impact on improving public health has never been more apparent – or more important – than at this moment in history.

Thank you for being part of our enterprise to create a healthier planet for everyone. With your generous support and partnership, we are Making Sense of the World. We wish you, your loved ones, friends, and colleagues in our global community continued good health and prosperity.

Robert F. Margolskee, MD, PhD
Director and President

Nancy E. Rawson, PhD
Associate Director and Vice President

David Macnair, PhD
Chair of the Board

Richard L. Berkman, Esq
Vice Chair of the Board
Connecting the Big Data Dots

In late March scientists, clinicians, and public health experts began noticing a curious trend – Google searches for the phrase “I can’t smell” began to spike in cities where there was a significant outbreak of COVID-19. With troves of health information available today at the touch of a key stroke, people often Google their illness symptoms in search of a self-diagnosis.

Monell and other scientists around the globe started connecting the big-data dots with clinical reports from healthcare workers on the front lines of caring for COVID-19 patients.

“It started with one email,” said Monell Associate Director Danielle Reed, PhD. Within hours, hundreds of emails were flying through cyberspace as chemosensory experts from all over the world came together virtually to study COVID-19 and its connection to the loss of smell and taste.

That email thread was the grassroots launch of the Global Consortium for Chemosensory Research (GCCR), a group of more than 500 interdisciplinary scientists, clinicians, and patient advocates in more than 50 countries who convened to study these symptoms as early-warning signs of COVID-19 infection. Reed is on the GCCR’s nine-member international leadership team, directing efforts to conduct and analyze worldwide evidence-based information to combat the pandemic’s spread.

Ultimately, the GCCR aims to learn if there are differences in sensory symptoms in people with COVID-19 infection compared with other types of viral infections. Viral upper-respiratory infections can damage the primary smell receptors – neurons in the lining of the nose – causing transient, and possibly enduring, smell loss. The GCCR’s earliest effort was a global, web-based survey of individuals experiencing cold or flu-like symptoms with or without a confirmed COVID-19 diagnosis. Reed and Monell alumni and colleagues are among the authors of the GCCR’s first publication in the peer-reviewed journal Chemical Senses.
Quiet in Quarantine, the Science Advances

While millions of us sheltered from the pandemic, self-quarantining in our homes as public life and commerce slowed almost to a halt, Monell’s researchers leaned into it, bringing five decades of expertise in chemosensory science to bear on this global public health emergency.

On March 17, 2020, Monell joined the ranks of research institutions everywhere in closing to the public and halting its human research programs to protect the health and safety of its employees, visitors, and the public.

Even with its doors closed, the scientific enterprise remained strong.

Health and safety measures and social distancing policies were rapidly implemented so that a small percentage of personnel could return in shifts to maintain institutional and research operations, such as maintaining immortal taste cell cultures, and the IT infrastructure needed for remote, web-based research collaborations and communications. Principal investigators, experienced at leading their labs through emergencies, closely monitored their ongoing studies.

Monell’s annual spring corporate partners’ meeting was held by remote videoconference, as was a well-attended patient advocacy event for the worldwide community of people who care about smell loss. The entire Monell staff stayed in touch with each other through virtual Town Hall events while working from home and almost daily email newsletters. Monell’s summer program for high school students was completely virtual, from initial interviews to capstone symposium (pictured above).

And, Monell continued to serve as a trusted source of health information for the public through its social media platforms, website, blog, video communications, and other vehicles. Monell’s popular seminar series went virtual, and was opened to the chemosensory community at large, further expanding the institution’s global reach.

As the COVID-19 pandemic swept across the globe, Monell stepped up to the challenge and proudly asserted itself as a global leader in advancing discovery in taste and smell and protecting public health.
Monell's interdisciplinary chemosensory science integrates disease prevention and diagnosis, sensory nutrition, regeneration of the senses and digitizing smell and taste. Our goal is to accelerate the translation of basic science on taste and smell into real improvements in human health and well-being.

Our Research Aims

Smell & Taste Loss

Health & Disease

Digitizing Smell & Taste

Sensory Nutrition
Cognitive psychologist Pam Dalton, PhD, launched a remote study investigating how respiratory infections affect the sense of smell, specifically whether COVID-19 infection affects the ability to smell more severely than other respiratory viruses.

Participants in the Sense of Smell and COVID-19 study receive in the mail a set of scratch-and-sniff odor cards with instructions to perform an at-home smell test, and report their responses and answers to health-related questions on the study’s secure website.

The use of the NIH Toolbox Odor ID Test, an objective measure that directly tests one’s ability to smell a set of common odors, sets Dalton’s study apart from subjective surveys currently in use that rely on a person’s self-reported recall of smell ability. A preliminary study by the Reed lab and others revealed that tests asking participants to directly smell a sample odor reported 70 percent of subjects losing their sense of smell; however, self-report tests showed that only 50 percent of subjects claimed to have an olfactory deficit.

In the rapidly changing environment, technology transfer director Maureen O’Leary, PhD, and Monell scientists are applying these findings to develop a rapid, inexpensive, COVID-19 diagnostic which is currently being tested as a tool for supporting safe return to schools and workplaces.

(Monell resumed in-person human subject research studies under strict safety protocols in August.)
Danielle Reed, PhD, Hakan Ozdener, MD, PhD, Johan Lundstrom, PhD, Pam Dalton, PhD, Hong Wang, PhD, and their colleagues who are part of the Global Consortium for Chemosensory Research (GCCR) reported initial results of their multi-lingual, international questionnaire to assess whether the senses of smell and taste are more or less affected by COVID-19 compared with other respiratory diseases.

The questionnaire gauges self-reported ability to smell, taste and perceive chemical irritants (sensations like the “cooling” flavor of mint) using qualitative and quantitative measures, before, during, and after COVID-19.

In just over 4,000 participants with confirmed COVID-19, smell, taste and chemesthetic function were significantly reduced compared to their status before infection. The results suggest that COVID-19 may disrupt sensory-neural pathways. They also found that self-reported smell loss was independent of self-reported nasal obstruction (from congestion, for example), which, in common respiratory infections like the flu, can explain temporary smell impairments. Taken together, the preliminary findings confirmed loss of smell as a diagnostic symptom for COVID-19.

Historically, Monell has been a leader in identifying, developing, and using cultured smell and taste cells for basic science.

Building on this seminal research, Monell President Robert Margolskee, MD, PhD, and Hakan Ozdener, MD, PhD, are using cultures of taste cells in which they can model taste loss from COVID-19. With the goal of determining if cultured human taste cells are susceptible to the novel coronavirus (SARS-CoV-2, severe acute respiratory syndrome coronavirus 2), they will investigate whether the receptor ACE2 and co-receptor TMPRSS2 that the coronavirus uses to enter a cell are expressed in human taste cells or associated cells. They will also study the effect of COVID-19 infection on the viability of taste cells and their ability to replicate, and whether certain sub-types of taste cells are more prone to coronavirus infection.
Changing the Conversation

Monell hosted the conference "Identifying Treatments for Taste and Smell Disorders" in November 2018. This was a first-of-its kind event that included multiple internationally recognized research groups and engaged patients and clinicians as active participants. The goal of the conference was to identify gaps and opportunities in the research and to create a roadmap for the future. One of the gaps identified is a scarcity of patient advocacy groups in North America. In response, Monell hosted on April 28 a live, on-line panel discussion on the partnership between patients and scientists in advancing research on the loss of smell and building awareness about this vitally important health issue. More than 250 people signed on to hear from anosmia patient advocates and researchers, including a discussion on the GCCR COVID-19 work.
Linking Taste and Smell to Health and Disease

Monell is developing new ways to detect changes in body chemicals that signal disease and enlist chemosensory cells to fight pathogens. Studies this year advance new technologies to monitor these airborne chemicals and yield tantalizing clues on how to predict and prevent the spread of infectious diseases like COVID-19.

Broadening Monell’s research on taste receptors as immune health sentinels, molecular biologist Robert Margolskee, MD, PhD, cell biologist Marco Tizzano, PhD, and colleagues from Sichuan University found chemical-sensing cells in the gums of mice that trigger the immune system to control bacteria in the mouth and protect against tissue-damaging infections that destroy supporting bone in teeth.

These solitary chemosensory cells (SCCs) in the gums of mice express several types of taste receptors, along with the taste-signaling molecule gustducin.

Knocking out gustducin in their gum SCCs led to overgrowth of oral bacteria and gum disease, while stimulating bitter taste receptors in SCCs promoted the production of anti-microbial molecules and protected against gum disease. The team’s findings may lead to personalized dental treatment of periodontitis by harnessing one’s own innate immune system to regulate their oral microbiome.
Ovarian cancer has the lowest survival rate of all female reproductive cancers, primarily because its early symptoms are difficult to detect.

Developing a reliable early diagnostic has the potential to prevent the deaths of 140,000 women each year, worldwide. Building a diagnostic tool to detect early-stage ovarian cancer by using odor biomarkers in blood was the focus of the late Monell chemist George Preti, PhD, and colleagues at the University of Pennsylvania’s Nano/Bio Interface Center, Ovarian Cancer Research Center, and Penn Vet Working Dog Center. Their work this year brought them one step closer to building an instrument that can detect the odor of ovarian cancer.

All cells release volatile organic compounds (VOCs) that emanate from body fluids and may have an odor. In early studies, the team collected blood plasma samples from ovarian cancer patients, with Preti isolating the unique chemical mixture associated with an ovarian cancer-related odor. The team then demonstrated that dogs can be trained to detect ovarian cancer tissues. In this most recent study, the team tested a nanotechnology prototype instrument against the reliable trained dogs and gas chromatography-mass spectrometry chemical analysis in detecting VOCs emanating from blood plasma of ovarian cancer patients. All three methods showed evidence that plasma from ovarian cancer patients gives off an odor signature that can be distinguished from otherwise healthy individuals.

The research – funded in part by Jade Yoga, the Kaleidoscope of Hope Foundation, the Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation, Ms. Bonnie Hunt, Ms. Gail Seygal, and other individuals – points the way toward achieving Preti’s vision of finding the VOCs specific to ovarian cancer and building a “smelling machine” that can instantly detect those chemicals in a drop of blood. Watch Diagnosing Ovarian Cancer to learn more about this important work.

Monell chemical ecologist Bruce Kimball, PhD, and colleagues at the U.S. Department of Agriculture found a new, non-invasive method for monitoring infectious disease and vaccination programs in wildlife populations that may inform the response to the COVID-19 pandemic.

The team analyzed volatile chemical metabolites detected in the feces of rabies-vaccinated raccoons and striped skunks and found a link between these volatile chemicals and adaptive immunity in the animals.

Rabies is a zoonotic disease, meaning the virus typically originates in wildlife (such as raccoons, skunks, and bats), moves to domestic animals, mutates, and then is transmitted to humans. Researchers speculate that the novel SARS-CoV-2 coronavirus circulating in bats passed through some other animal and mutated, making it virulent and highly transmissible to humans. Kimball’s latest findings suggest that monitoring fecal volatiles in wildlife and domestic animal scat may serve as an important infectious disease surveillance resource to detect viruses in animals before they make the leap to humans.
Dr. George Preti, a world-renowned expert on the chemistry of human body odors and a longtime member of Monell, died in March 2020 after battling bladder cancer.

Since joining the newly founded Monell Chemical Senses Center as a postdoctoral fellow in 1970, Preti had been a central contributor to the institution’s legacy of excellence as a global leader in groundbreaking chemosensory research.

Over the course of his prolific 50-year research career, Preti was known for four characteristics: his expertise in the chemistry and biology of human body odors and their potential diagnostic significance; his success in translating his laboratory discoveries into practical use by filing and licensing intellectual property to enable real-world advances in health and medicine; his special skill at recruiting and leading a multidisciplinary team to execute his research program, which was a winning combination of enthusiasm, dedication and kindness; and, his deep humanity toward patients experiencing odor-related health issues.

Over the years, Preti and colleagues studied volatile emanations from a wide variety of species, but his focus was primarily on human odors and their meaning.

In a seminal paper published in the Proceedings of the National Academy of Sciences in 1996, Preti and colleagues demonstrated the biological process of male underarm odorant formation and release. The process is similar to how many mammalian pheromones work throughout the animal kingdom.

Preti’s interest in the nature and source of bad breath led to him to become one of the world’s experts on a rare metabolic disease called trimethylaminuria, helping countless patients understand their diagnosis, and recommending dietary approaches to reduce the oral and skin odors and improve their quality of life.

Most recently, his work was directed toward finding a diagnostic tool to detect early-stage ovarian cancer using odor biomarkers in blood. He continued his work on this project which had become a passion until just days before he died. Fittingly, just days after his death, a new article describing the “smelling machine” work was published in AIP Advances.

George Preti is remembered by all who knew him as gracious and kind, thoughtful and caring. At Monell, we mourn his death as we celebrate his creative and productive life.
In a new study of twins and dietary preferences, behavioral geneticist Danielle Reed, PhD, found that genetic variation shapes an individual’s perception of fatty foods.

One’s liking of fatty foods depends on inborn genetic traits related to fat perception, rather than simply the fat content of the food. Reed and colleagues gave adult identical and fraternal twins attending the annual Twins Day Festival in Twinsburg, OH, a potato chip test. Each participant sampled six types of high- and low-fat potato chips and reported on how fatty they tasted and how much they liked them. Participants also gave saliva samples so their DNA could be extracted for genotyping.

Supported with funding from PepsiCo, Diageo and the National Institutes of Health, the team found that genetically identical twins were more similar in their pattern of liking for the high- and low-fat potato chips compared to fraternal twins. They also identified two specific gene variants that correlated with the twins’ ratings of liking, tying these genes for the first time to the perception of fattiness. The findings show that although fat is almost universally liked in foods, some people may be born with the genetic tendency to prefer foods higher or lower in fat.
Molecular biologist **Hong Wang, PhD**, advanced the current understanding of how chronic stress affects taste, food intake, gut health, and metabolism.

Her research showed that inflammation caused by chronic stress shortens the lifespan of taste cells, and the response to acute stress changes the expression of certain taste receptors. What’s more, reduced taste sensitivity can increase an individual’s preference for sugar and salt and may contribute to overeating and obesity. Wang’s findings have practical applications in designing foods and dietary strategies to prevent or balance the negative effects of stress on taste and health.

Over the past three decades at Monell, developmental psychobiologist, **Julie A. Mennella, PhD**, has made significant discoveries that shed light on the nature of early nutritional programming and the development of flavor senses. We highlight some recent findings made during the past year.

Childhood is a period of rapid growth and development. While there is variation in the rates of growth among infants, growing “too fast” during the first months is increasingly considered to be a risk factor for later obesity and other diseases. Mennella and her collaborators showed that faster weight gain during the first months accelerated the timing of the infants’ first tooth and the number of primary teeth erupted by their first birthday. Infants who gained weight rapidly also were at greater odds for obesity at one year, but infants who breastfed compared to those who were formula fed were at lower risk. The timing and patterning of teething may be biomarkers for increased risks for oral and systemic conditions such as obesity and dental caries that may be modified by the type of early diet.

Everyone knows that children love sweets more than adults, but why? In collaboration with former Monell postdoctoral fellow M. Yanina Pepino, PhD, at the University of Illinois Urbana, Mennella studied the relationship between sweet taste preference (concentration of sucrose most preferred) and sensitivity (lowest concentration of sucrose detected). While children require higher sucrose concentrations to detect sweetness (so, less sensitive) and they most preferred higher concentrations of sucrose, sweet taste sensitivity did not predict preference.
Despite a growing body of evidence from Monell and other researchers showing that the senses of taste and smell are linked to diet and nutritional status, there is still much to learn about the interactions of chemosensory input, eating and drinking behaviors, diet and health.

In November 2019 Danielle Reed, PhD, co-chaired a Sensory Nutrition and Disease Workshop hosted by the National Institutes of Health to explore these relationships. Multidisciplinary researchers in psychology, neuroscience, and sensory, food, nutrition and health sciences explored how chemosensation influences dietary choice and health.

Several strategies for advancing sensory nutrition research emerged, such as ways to improve chemosensory testing and assessment and how to better define the interplay of chemosensory signals, dietary intake, and metabolism. Attendees agreed that multidisciplinary research teams will move the emerging field forward by establishing connections in big data, neural circuitry, and individual genetics and behaviors. This will help them identify the chemosensory stimuli, receptors, and cell types that contribute to food choice and metabolism.

With such information, they can design strategies for mitigating risk for some of today’s most pressing health problems, including obesity, hypertension, type 2 diabetes, heart disease, and cancer.

Meet Monell’s Newest Member: Amber Alhadeff, PhD

A behavioral neurobiologist who studies how the nervous system controls food intake, Amber Alhadeff, PhD, joined Monell as an assistant member in January 2020, following four years as a post-doctoral fellow in the Department of Biology at the University of Pennsylvania. Her research focuses on neurons in the brain that control hunger and how gut-brain signaling influences the sensation of hunger. Alhadeff’s lab uses modern neuroscience approaches to understand how gut-brain connections influence eating behaviors. She aims to uncover new targets for developing treatments for diet-related diseases such as obesity and type 2 diabetes, as well as eating disorders.

Alhadeff was awarded a 2020 Klingenstein-Simons Fellowship Award in Neurosciences. These are among the nation’s oldest and most illustrious fellowships for young investigators in neuroscience research.
Monell’s Vision for Digitizing Taste and Smell

Consider for a moment the work of the late George Preti, PhD, to identify the odor signature of ovarian cancer in a drop of blood plasma. Now imagine having the ability to send a digitized smell sample across the country or even the globe to get a second opinion on a medical diagnosis. Imagine using a digital app on your smartphone to develop a personalized perfume or embedding the smell of a rainforest into a PowerPoint on climate control. This is Monell’s vision for delivering odors, tastes, and sensations instantaneously to consumers with new technology and familiar hand-held devices.

Monell scientists are working to characterize the aroma of diverse molecules as well as to map the genetic differences in individual interpretations of smell. Using this catalog of odor data, Monell neuroscientist Joel Mainland, PhD, and sensory scientist Emily Mayhew, PhD, are developing large-scale machine-learning models to predict odor quality based on molecular structure. They aim to ultimately engage commercial partners to build devices capable of detecting, generating, and sharing scents.

To that end, Mainland, Mayhew and colleagues are piloting Project AROMA (Accessible Repository of Odor Materials Assessments) to assess the most appropriate data-gathering and measurement approaches for a universal system of odor classification. Current models have begun to predict odor perception based on molecular structure but are limited by the quantity and quality of perceptual data.

With the help of human volunteers, both trained and untrained in detecting scents, the team is building an open-access database of 10,000 odors with improved consistency and resolution.

In their latest study which tested eight highly trained and 15 moderately trained participants on 50 odor stimuli, they found the highly trained group more fully described the odors; however, their evaluations took about five times longer than the speedier novices. The findings inform the data collection strategy and lay the groundwork for developing commercial applications in the future.

A Melding of Arts and Sciences

Anicka Yi is a conceptual artist whose multi-sensory work unites sculpture, biology, fragrance, and feminism in what she calls a “biopolitics of the senses.” Her recent work is a fragrance collection called Biography, which, through scents from nature and the laboratory, evokes the stories of four feminist characters.

Last November, olfactory neuroscientist Joel Mainland, PhD, partnered with the Hugo Boss Prize-winning artist – who has held solo exhibitions at the Guggenheim Museum in New York and the Kundsthalle in Basel, Switzerland – to launch the Biography collection at New York City’s famed Dover Street Market. Mainland demonstrated humans’ ability to detect intricate mixtures of odors with a specialized piece of equipment called an olfactometer. With this piece of technology he was able to explain to a diverse consumer audience the individual differences in the way we each perceive odors in everyday scents and designer perfumes.
Partners in Progress: Solving New Challenges for Science and Society

Since its founding, Monell’s deeply rooted culture of free and rich collaboration across disciplines and with partners in academia and industry has been fundamental to its success as the world’s premier institution studying the senses of smell and taste.

These robust relationships enable Monell and its partners to translate new knowledge about the chemical senses into better clinical practice and consumer products, and help strengthen global public health policy.

Corporate Partnership Program

Monell has 50 years' experience partnering with industry, and currently interacts with over 900 individuals in 35 companies on five continents. The value we provide to our corporate partners is reflected in an average length of Monell membership of 21 years.
Monell and partner DiscoveryBioMed, Inc. (DBM) were awarded a $1.7 million grant through the National Institutes of Health’s Small Business Technology Transfer Research (STTR) program to find bitter-taste blockers to improve the taste of bitter medicines and food ingredients.

Bitter taste in foods and medicines presents a barrier to overcoming such global public health challenges as food insecurity and poor compliance with medication use, especially among children and the elderly. Even the best drugs against malaria and parasitic infections – which are responsible for the deaths of millions of children each year, for instance – are not effective if children won’t take them.

Building on earlier Phase I STTR funding and a grant from the Bill and Melinda Gates Foundation, this second phase of the STTR funding will create and use bitter-responsive taste bud cell lines cultured from individual donor oral tissue to create robust screening assays. Earlier Monell-DBM work shed light on the “bitterome” – the genome of the 25-plus bitter-taste receptors in human taste buds which is captured in the donor-specific cultured cells. Chemical “antagonists” discovered in initial screens of the cultured taste cells blocked the taste of bitter medicines for some of the research participants.

This important work leverages Monell’s collective strengths in sensory science and taste cell technology to reduce the awful tastes of life-saving oral medications for diseases such as HIV and malaria. Finding ways to block bitter will also encourage healthy eating habits by reducing reliance on salt and sugar.
Partners in Progress: Solving New Challenges for Science and Society

2020 Monell Spring Colloquium
Monell’s first completely virtual event.

New methods in the manipulation and analysis of very large and multi-dimensional datasets are transforming how we collect data and conduct chemosensory research. These methods hold the potential to revolutionize how food, flavors and fragrances can be transformed to improved diets, environments and health.

Because of the COVID-19 pandemic, Monell moved to a completely virtual format. As a result, there was overwhelming participation by our Partners. Presentations covered the why, what, how and when of very large, high-dimensional data with examples from many disciplines and application areas in basic and applied chemosensory science, personalized medicine and nutrition.
Monell and Université Côte d’Azur: A Partnership in Sensory Research

Monell’s partnership with its newest academic affiliate, Université Côte d’Azur, blossomed this spring with a public engagement project at the 2020 Pennsylvania Horticultural Society Flower Show. With the show’s theme of “Riviera Holiday,” it seemed only natural for the partners to design their educational programming around lavender, the floral hallmark of Provence and the French Riviera.

Over the nine-day exhibition at the Pennsylvania Convention Center, Monell researchers, staff, and volunteers shared with thousands of visitors how activation across odor receptors in the human nose determines how we smell lavender and how scent is linked to our emotions. In an informal survey, most attendees reported that smelling lavender made them feel “relaxed.” At a special Garden Hub talk, Université Côte d’Azur colleagues presented on the chemistry of lavender scent, and Monell Vice President Nancy Rawson, PhD, shared how each person has their own unique “odor print.”

The partnership originated in research collaborations to explore the molecular underpinnings of sweet taste, with the goal of designing new sweet-taste modulators and sensory nutrition strategies to address global health challenges such as diabetes and obesity. Plans are underway for developing academic exchanges, including visiting professorships, and internships in computational biology, analytical chemistry, and immunology. And many thanks to our industry partners Bedoukian Research, Berjé, and Young Living, who sponsored the exhibit.
The Monell Center at the 2020 Flower Show

Over 9 Days

- 5,000 Visitors Participated in Lavender Sticker Survey
- 205,000 Total Attendance
- >550 Social Media Posts and Reposts
- 266 People Who Asked to Learn More About Monell
- 50 Attended Special Behind-the-Scenes Events
- 40 Volunteers Helped Staff Exhibit
- 50 Partnerships • 20 Partners in Progress: Solving New Challenges for Science and Society
Financials

Investment in the research enterprise – our people, technologies, and infrastructure – and responsible stewardship of financial resources position Monell at the vanguard of chemosensory science.

The Monell Chemical Senses Center’s work is supported by three primary sources. The largest source, government funding, consists chiefly of competitive federal grants with the National Institutes of Health, which have increased over the past two years. Additional funds come from corporate partnership fees and industry-sponsored basic and translational research. Finally, the Center receives significant support from generous gifts, grants, and bequests from private individuals and philanthropic foundations. The Center is most grateful for the continued generosity of the Ambrose Monell Foundation, the Center’s founding funder and largest private donor.

In 2019-2020, revenue declined by nearly 10 percent, largely as a result of reduced operations forced by the COVID-19 pandemic. However, Monell received a $1.5 million loan from the Small Business Administration’s Paycheck Protection Program that enabled it to maintain full staffing, and it is expected that the loan will be forgiven in the next fiscal year.
Now, more than ever, it is our greatest pleasure to THANK YOU – the friends, alumni, employees, foundations, and businesses – who support Monell’s research mission through philanthropic gifts and grants. We are grateful to each of you for including the Monell Center in your charitable choices, especially this year when we all face such great challenges. Together with you, we are learning through the pandemic and applying our findings to all four of our scientific research aims. Many thanks.

Below, we gratefully recognize donors of $1,000 or more during the academic year (July 1, 2019 to June 30, 2020).

Meet Our Supporters
The 2019-2020 Honor Roll of Donors

Monell Circle ($1,000+) 2019-2020

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 Jennifer Trachtman at jtrachtman@monell.org or 267-519-4715. To view a full list of donors and matching gift companies, and to see consistent, long-term support of the Monell Center, consecutive year donors, and donors by affinity group, please visit www.monell.org/thankyou.
Meet Our Supporters

“Coming from the food industry where taste and smell are critical, Monell has long been a priority to me. Now, as Board Chair, I have the unique opportunity to give through my service and through my philanthropic support of the Center’s campaign.”

David Macnair

“When I moved back to Philadelphia, I had the opportunity to put my experience as a Monell alumn and a nonprofit executive to use by sitting on the Center’s International Advisory Council. My new role reacquainted me with the Center’s great contributions to the community and I increased my commitment with a multi-year gift to the Sensing the Future campaign.”

Rev and Mrs. Mike Pratt

“Tina and I were struggling to get information from our pediatrician about our children’s rare disorder. We learned about Dr. Preti from a Philadelphia Inquirer article. He and Monell filled a real void for our family and we continue to give because of our strong belief in Monell’s scientific research and the education provided to better understand our sons’ genetic disease.”

Richard and Tina Hasselbusch

“Richard L. Berkman

“As a board member, it was important for me to make a commitment to the Sensing the Future campaign. I also wanted to continue my annual contributions to Monell and this year decided to sponsor a Monell summer apprentice. It is heartening to know that my contribution helped a Philadelphia high school student gain meaningful bench science experience, especially in our new remote environment.”

Richard L. Berkman

“We are donors because our son lost his sense of smell from a head injury. We have now started giving through our individual retirement accounts so that we can do even more to help Monell increase the pace of their research.”

Deana Joss

“I am a perfume blogger and collector and my best friend was also a very serious perfume collector. We got so much joy out of experiencing and discussing scents. When he died suddenly, a recurring donation to Monell seemed like the best way to honor his memory and generous spirit.”

Judy Wellington

“Through Monell’s Sensing the Future campaign, these future scenarios are closer than you might think.”

Sensing the Future: The Campaign for Monell at 50

Imagine a future in which physicians use a simple taste test to help them treat chronic upper respiratory infections. Fast forward to a day when we can replace damaged or aging smell receptors to restore our ability to fully enjoy the wonderful scent of newborns and tantalizing flavor of our favorite foods. And consider the prospect of a rapid smell test to track the earliest symptoms of infections such as COVID-19.

At the close of the 2019-2020 year, we were 84 percent of the way to our fundraising goal. Please contact Jenifer Trachtman at 267-519-4715 or jtrachtman@monell.org to learn about how you can help us reach success.

1968 Alliance

The campaign will be successful through gifts of all sizes! You can play a vital role. Consider becoming a part of the 1968 Alliance. Members give $1968 over a three to five year period.
Morley Kare founded Monell in 1968 as a bold experiment, breaking down the traditional academic structure of the time to collaborate freely and richly across disciplines. That deeply rooted culture of collaboration is what distinguishes Monell as a global leader in improving health and well-being by advancing the scientific understanding of taste, smell and related senses.
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Monell's mission is to improve health and well-being by advancing the scientific understanding of taste, smell and related senses.

Our Values

Commitment
We view basic science as the foundation of discovery.

Open Communication
We share our knowledge widely to impact global health and well-being.

Mentorship
We train the next generation of chemosensory scientists to assure a bright future.

Broad Impact
We work across sectors to advance science that solves problems.