SILENT SPRING INSTITUTE

2021 IMPACT REPORT

Thank you
FOR INVESTING
IN THE FUTURE.

A SPARK OF **hope ...**

You feel it when you look into the eyes of a child.

You see it when you watch a young, determined scientist setting out to take the world of research by storm.

And you know it when our science leads to discoveries that will prevent breast cancer now and in future generations.

Without the support of kind and caring donors like you, our work would not be possible.

You keep that spark of hope lit, and that spark keeps our most innovative work happening.

Throughout these pages you'll notice a theme. Whether we are telling you about our research on harmful chemicals in children's products, introducing our newest generation of scientists, or sharing stories from generous donors, all are focused on young scientists and supporters making a difference—just like you.

This next generation is full of new ideas, positive energy, and immense passion for the work of Silent Spring and, more broadly, our mission to uncover the links between chemicals in our everyday environment and our health.

The following pages describe just a few of the many amazing things your generosity accomplished in 2021.

Eco-Friendly
CHILDREN'S PRODUCTS FOUND TO CONTAIN PFAS

What are PFAS?

PFAS are highly fluorinated chemicals that are added to a wide variety of consumer products to make them non-stick, waterproof, and stain resistant. Silent Spring is studying them because some types of PFAS have been linked to cancers, including breast cancer, immunotoxicity in children, thyroid disease, reproductive problems, and other health effects.

Laurel Schaider, PhD, senior scientist

While green certifications are good at protecting consumers from some toxic chemicals, new research shows that they are not protecting consumers from harmful PFAS chemicals.

In a study that wrapped up last year, Laurel Schaider and her team found that many children's products labeled as eco-friendly or green certified contained harmful PFAS chemicals that weren't listed on the label.

Silent Spring has been studying PFAS for a long time, and that's for a good reason. PFAS are chemicals that are extremely persistent, meaning they never break down. They can also accumulate in your body and can be passed down from mothers to infants during pregnancy and breastfeeding. In fact, they're found in 98% of Americans.

It's heartbreaking to think that a newborn baby—even your own child or grandchild—might come into this world already impacted by harmful chemicals.

For this study, the Silent Spring team purchased almost 100 different children's products, including bedding, furniture, and clothing. They specifically chose products that were labelled as stain-resistant, water-resistant, "green," or "nontoxic."

> **"We chose to focus on PFAS and children's products because children's bodies are still developing and they are more sensitive to the harmful effects of chemicals like PFAS. Parents should be able to trust that what they purchase is safe for their children."**

So many of us trust that when a product label says it's environmentally friendly, or has a green leaf on it, it means it's safe for our children. It was time to test that assumption. The scientists analyzed each product for the presence of PFAS.

They found PFAS were more likely found in water- or stain-resistant products (regardless of whether they were green certified or said "nontoxic" on the packaging).

WHAT ARE THE NEXT STEPS?

By shining a spotlight on the problem, the new study will hopefully encourage consumers to demand more action by retailers, and policymakers as well. So far, California, Washington state, Massachusetts, and Maine have introduced or passed legislation to prevent manufacturers from putting PFAS in products. You can help us keep the momentum going!

Silent Spring is also working with advocacy partners to push hard for green certifiers to include PFAS in their criteria and to conduct a more thorough review of the products they certify.

"It's like detective work. This idea of bringing my expertise as an exposure scientist to some of these community questions: What's going on? Why are we seeing these exposure inequities? What can we do about it? I want answers to these questions."

Robin Dodson, ScD, research scientist

MEET RESEARCH SCIENTIST **Robin Dodson**

Robin Dodson remembers being 11 years old and hearing about the hole in the ozone layer. She was terrified to learn that humans could have such an impact on the environment.

"It scared me, but it was also a great motivator. I became that kid who was pushing for recycling programs at school, and, above my bed, I had a poster of the top 100 things you can do to save the environment."

But it wasn't until Robin attended college that she discovered the environment could also impact human health. She eventually ended up at the Harvard T.H. Chan School of Public Health where she completed a doctorate in environmental health with a focus on exposure science—the science of how people are exposed to chemicals in their everyday environments.

Silent Spring was Robin's next stop and she's been here for the past 14 years. Robin heads up our exposure science projects. She's focused on what we're exposed to within our homes, as well as groups of people who are disproportionately exposed to toxics.

Here in the United States, we spend more than 90 percent of our time indoors—in places like our homes, schools, offices, gyms, and cars. These are also places where harmful chemicals in consumer products can migrate into the air or collect in household dust.

This is the type of environment that fascinates Robin.

Over the past few years, Robin and her team have been expanding Silent Spring's exposure science work and applying it to communities that are more at risk, particularly women of color.

Studies show that women of color face higher exposure to toxic chemicals relative to White women. As well, Black women and children have increased rates of hormone-mediated health conditions, like diabetes, fibroids, and more aggressive forms of breast and endometrial cancers.

Robin and her team are finding that women of color tend to use different personal care and household products than other groups, which may explain their higher chemical burden. One of the projects she's involved in is **Taking Stock**, a community-based pilot study in California that's examining products used by Black and Latina women in South Los Angeles.

"Because of racialized beauty norms, women of color tend to use different beauty products, for instance to straighten their hair or make it shiny. We want to understand not only what products they're using—and what chemicals they're exposed to—but also why they are choosing those products."

From ResearchHer TO RESEARCHER AT SILENT SPRING

Elissia Franklin first heard about Silent Spring while doing research for her podcast, The ResearchHer. She started the podcast in 2019 with the goal of highlighting Black women scientists and researchers. At the time, she was a visiting research scholar at Tsinghua University in Beijing and in her last year of completing her PhD in analytical chemistry from Purdue University.

Elissia has always recognized that people of color are under-represented in science, and she grew up understanding that there are systemic disadvantages when you are both black and a woman.

With her passion for science, she is not afraid to blaze a trail in a field where people need to see themselves reflected. She is passionate about teaching anything she knows to anyone who wants to learn and believes that knowledge should be accessible to all.

When she came across Silent Spring's research on toxic chemicals in personal care products, her entire trajectory changed. Right then and there she decided that this would be her research focus.

Now, as a postdoctoral research fellow at Silent Spring, Elissia works closely with Robin Dodson studying consumer product use among women of color.

"Coming to Silent Spring was a transition. It was a transition from doing something I'm good at to doing something I'm passionate about."

Elissia immediately started working with Robin on **The POWER Study**. One aspect of the project is using social media influencers to empower Black women to reduce their exposures to harmful chemicals in beauty products that affect their health and contribute to health disparities.

Elissia is focused on sharing the latest science on endocrine disruptors—chemicals like BPA and phthalates that interfere with hormones in the body and have been linked with health effects such as infertility, impaired brain development, diabetes, and certain cancers.

"Black women are looking at social media for product recommendations, how to use products, and for the latest and greatest on beauty products. Since we need to meet women where they're at, we're engaging social media influencers and sharing information with them about endocrine disrupters in beauty products so that we can start to change behaviors."

The goal is to encourage social media influencers to share their new knowledge with their hundreds of thousands of followers.

Elissia looks forward to expanding her research to other marginalized communities in the future.

"Silent Spring has been the most supportive environment I've been in as a scientist. Everyone's so passionate and, despite always having so much on their plates, they are always willing to sit down with me."

Elissia Franklin, PhD, postdoctoral research fellow

FROM STAFF SCIENTIST TO BOARD MEMBER **to Donor**

Sarah remembers it like it was yesterday. She was just a kid when her mom was diagnosed with cancer. Her grandmother, too, had cancer, so it was part of Sarah's life from a very young age.

In high school, Sarah spent much of her free time driving her mom to and from chemotherapy appointments in Boston. It was during those days that she started to think about public health and what might be the cause of non-hereditary cancers. It was during college that she came across Silent Spring.

"After college, I was thinking about ways to combine my background in environmental science with my emerging interest in public health. And was drawn to Silent Spring because of its wonderful mission and the caliber of its research.

"I also loved that it was a group of women scientists, because I had some experience seeing what it was like to be a woman in the field of scientific research."

Sarah joined Silent Spring as a research assistant and assistant to the executive director in in 2006. One year later her mother passed away from cancer, and she remembers how supportive and empathetic everyone was.

Eventually Sarah became a staff scientist, but there was something still pulling on her heartstrings. After several years, she left Silent Spring to pursue her passion for cooking and sustainable agriculture and has become a recognized farm-to-table chef.

These days, you can find Sarah and her high school sweetheart (now husband), Stuart, running their beautiful (almost 300-year-old) inn in Maine. The inn is located not too far away from Rachel Carson's cottage. Sarah prepares meals for her guests using local ingredients, and they can sit and enjoy a meal while looking out over the Inn's breathtaking waterfront views.

But Sarah's passion for Silent Spring never left her. When Sarah left Silent Spring, she immediately joined our Leadership Council and, more recently, became a member of our board of directors.

We're very thankful to Sarah for her caring and generous contributions, both of time and resources, over the years.

"To have worked at Silent Spring as a researcher, then to have become involved in a different way as a donor, and finally as a board member, I've always felt like I've had a unique perspective because of that experience on the inside. I've seen how Silent Spring works, how they prioritize, how efficient they are. No donor funds are ever wasted, and I feel 100 percent confident in supporting them as a donor and encouraging others to do the same."

What is Silent Spring's Leadership Council?

Our Leadership Council is a group of impressively accomplished women who have a passion for our work and who are dedicated to Silent Spring's research to prevent breast cancer. Want to learn more? Contact Rachel Sarvey at sarvey@silentspring.org.

"The Jewish value of tzedakah [the value of contributing towards building a more just world] is something I was raised with from a young age, and I'm excited to see what causes my own son grows to love."

THE VALUE OF **Tzedakah**

Elana Cutler was first introduced to Silent Spring by her mother, who became very passionate about environmental toxics when Elana was just out of university. This was before companies started labeling products as paraben-free and nobody was talking about PFAS.

When Silent Spring began developing the Detox Me app, Elana and her family were thrilled to financially support it. After all, they'd been detoxing their homes for years already.

"I wanted to get the word out to more people, and Detox Me was a way to make the research more digestible and accessible to the general public. I could see people of my generation and younger engaging with an app in a way that they're not going to engage with an article published in a scientific journal."

When Elana gave birth to her son a few years ago, she had a whole new category of products to consider introducing into her home and Detox Me was helpful in making those choices. She'd already transitioned to so many nontoxic products, but she spent a lot of time doing research on things like baby soaps and wipes and diapers.

"You don't really think about the ingredients in a diaper because it's not something you consume, but it's still something that's on your child's body. Those are the things I focus on.

"It's impossible to keep your child in a bubble, but everything you can do in your own house for your own family is reducing the risk."

Today, Elana's a busy mom and a full-time teacher, but she still finds time to support Silent Spring as a generous long-time donor. At the same time, she looks forward to teaching her son about philanthropy.

THE ONCE-A-MONTH CHALLENGE

When Elana Cutler was in college, her mother had discovered Silent Spring and became very passionate about the research on breast cancer and environmental toxics. So, Elana and her mom created a challenge for themselves.

Every month they would choose one product in their house—laundry detergent, body wash, multi-surface cleaner—and switch to a nontoxic version based on the research of Silent Spring. Over the course of a year, Elana and her mother changed their habits and started their journey toward a greener household.

LEARN MORE ABOUT DETOX ME ON PAGE 12!

BECAUSE OF YOU

300 CHEMICALS WERE IDENTIFIED AS POTENTIAL **Breast Carcinogens**

As a supporter of Silent Spring, you likely pay attention to the products you purchase and the other items in your environment. You already know that we're exposed to hundreds of synthetic chemicals every day.

But what you might not know is that there are hundreds, in fact thousands, of chemicals out there which the health effects are unknown. Now, thanks to you, we're starting to get a clearer picture of the toxics we might be exposed to.

This past July, Silent Spring's director of research Ruthann Rudel and research assistant Bethsaida Cardona, published the results of a study that's likely to have a big impact on our health in the future.

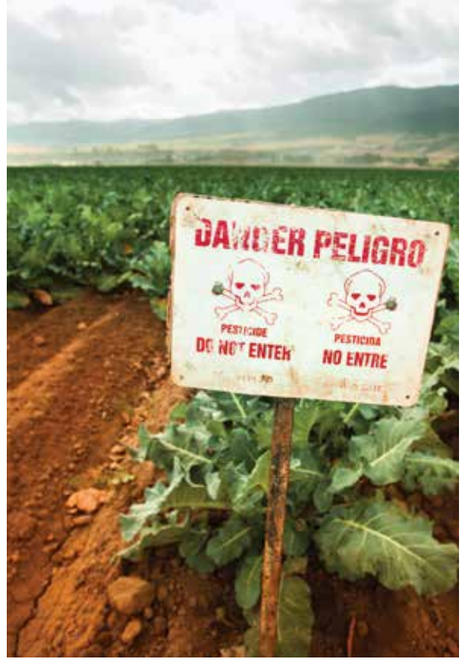
It's been named one of the top 35 research papers of 2021 by the National Institute of Environmental Health Sciences.

In the study, Ruthann and Bethsaida identified several hundred chemicals used in everyday products, including hair dye, pesticides, food additives, building materials, and drinking water, that could increase the risk of breast cancer.

That's because the chemicals cause cells to produce more progesterone and estrogen, known risk factors for breast cancer. While we've known for decades that those two hormones are linked to breast cancer, chemical safety screening in the U.S. rarely looks at how chemicals affect the production of those hormones.

> **"An easy way to look at it is like this: When a cancer patient is finished with radiation or chemotherapy, they're usually put on an aromatase inhibitor. That inhibitor is designed to block the synthesis of estrogen and keep the cancer away," explains Ruthann. "So, what we found with these 300 chemicals is that they do the opposite of that."**

The Silent Spring scientists combed through data on more than 2,000 chemicals that's held in a database by the U.S. Environmental Protection Agency (EPA). The database contains detailed information on how cells



change when exposed to different chemicals.

What they found was shocking. Almost 300 were found to increase estradiol (a form of estrogen) or progesterone in cells in the laboratory. Seventy-one chemicals were found to increase both hormones.

That's a lot of products that are doing more harm than good to our bodies.

We don't yet know how these chemicals are causing cells to produce more hormones. "What we do know is that women are exposed to multiple chemicals from multiple sources on a daily basis, and that these exposures add up," says Bethsaida.

The project is part of Silent Spring Institute's **Safer Chemicals Program**, which is developing new cost-effective ways of screening chemicals for their effects on the breast. Knowledge generated by this effort will help government agencies regulate chemicals more effectively and assist companies in developing safer products.

Thank you for making this project possible.

MEET **Bethsaida Cardona**

Bethsaida Cardona grew up in a Latinx community where most of the population only spoke Spanish, and most of the doctors only spoke English. Bethsaida, fluent in both languages, spent a lot of time helping her parents navigate the health system and it wasn't long before she decided to dedicate her life to medicine.

It was while she was studying at Harvard that Bethsaida started to take a strong interest in disease prevention and data analysis. While randomly looking through an online job board one day, she discovered Silent Spring. That was three years ago.

Donors like you make it possible for newly graduated students like Bethsaida to come to Silent Spring to gain research experience, and that's exactly what Bethsaida did.

Bethsaida joined Silent Spring just as Ruthann Rudel, Silent Spring's director of research, was starting to look at chemicals that increase estrogen and progesterone (described on previous page), and she was soon assisting with the study.

Currently, Bethsaida is involved in **Taking Stock**, a project aimed at exploring the types of household consumer products women in California use and how these may contribute to disparities in health. She's also involved in a study that's identifying mammary carcinogens that firefighters are exposed to on the job—in their gear and when fighting fires.

As for her future, Bethsaida hopes to pursue a graduate degree in epidemiology or environmental health. The fact that her first job out of university has been with Silent Spring has had a huge influence on her and she hopes to continue with a focus on the intersection between public health and the environment.

DETOX **Me**

Detox Me is the most reliable clean lifestyle guide that walks you through simple, research-based tips on how to reduce exposure to toxic chemicals where you live, work, and play.

Our free mobile app draws on decades of research on the health risks associated with toxic chemicals in our everyday environment, turning this vast knowledge into practical advice for healthier living.

Customize it according to your age, gender, and racial or ethnic background for recommendations on reducing your exposure to toxics.

KEY FEATURES:

- Track your progress and get reminders with a personalized guide.
- Scan barcodes on products to find relevant tips.
- Use the Buying Guides to decode product labels and find nontoxic alternatives.
- Share action-oriented tips with friends and family.
- Get the latest news on toxics with tips on how to protect yourself.

Detox Me is constantly getting updates and new features that make it even better!

Download it today at detoxmeapp.org.

HERE'S WHAT YOU CAN DO **today!**

Choose fresh or frozen food instead of canned or packaged fare. The lining of cans and other food wrapping may contain hormone-disrupting chemicals.

Phase out your nonstick pans. Use cookware that is steel clad, enamelled, cast iron, or anodized aluminum.

Read the labels on cosmetics and personal care products to avoid purchasing those that contain parabens. These chemicals are often added to lotions, shampoos, and deodorants, and may disrupt hormones.

Avoid buying new furniture or carpeting with stain-resistant treatments like Scotchgard.™ Look for natural fibers whenever possible.

Invest in a strong vacuum with a motorized brush and HEPA filter to help minimize indoor pollution and prevent dust from getting into the air.

Avoid sunscreens that contain chemical UV filters that disrupt the body's hormones. Chemicals to avoid include benzophenone, oxybenzone, and octyl methoxycinnamate or octinoxate.

Store food and beverages in stainless steel or glass containers rather than plastic.

Choose a quick-drying nylon shower curtain instead of vinyl, which may contain phthalates and other endocrine-disrupting chemicals.

Eat more home-cooked meals to reduce your exposure to PFAS chemicals commonly found in takeout and fast-food packaging.

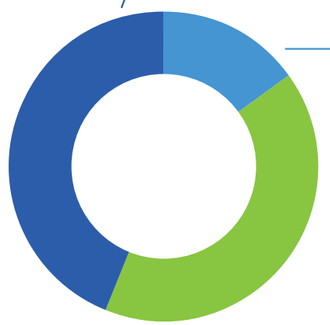
Avoid buying furniture that contains harmful flame retardants. Check the label to make sure it meets TB 117-2013 and states "does not contain added flame retardants."

FINANCIAL INFORMATION—CALENDAR YEAR 2021

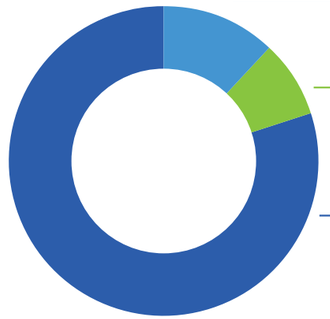
Donors—WE CAN'T DO IT WITHOUT YOU.

The chart below proves it. Last year, your gifts made up almost 60 percent of our income, powering the bulk of everything we do. Thank you for your farsighted generosity.

We promise to invest your donations for the greatest possible impact. If you would like more information, please contact **Rachel d'Oronzio Sarvey, director of development, at: sarvey@silentspring.org or 617-332-4288 x215**.



Individuals	$2,018,961 (44%)
Foundation Grants	$677,819 (15%)
Government Grants	$1,870,485 (41%)
Total Income	**$4,567,265**



Administration	$411,918 (12%)
Fundraising	$280,085 (8%)
Research & Programs	$2,801,303 (80%)
Total Expenses	**$3,493,306**

Board OF DIRECTORS

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Throughout this report, you've read about the tremendous impact you've had on our work over the past year, and you've read about the passion and new ideas that our next generation of scientists and donors are bringing to the table.

And you've helped us lay the foundation for even bigger things to come. Looking forward, we will continue to make tremendous progress eliminating cancer-causing chemicals from our environment.

With your support, we will continue to think big! Thank you for being with us on this journey.

JULIA BRODY, PHD,
EXECUTIVE DIRECTOR

Thank you.

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