2020 marked our 5-year anniversary, which gave us reason to pause and reflect on everything we’ve achieved since we founded in 2015. Established in 2015 with a grant of just $25,000 from Lush Cosmetics, we have grown into a charity that provides practical humane science learning tools to students and educators, and influences scientists and policy makers at all levels to reconsider their animal use. To mark this occasion, we started 2020 with a newly crafted Strategic Plan and we changed our name! We are now the Canadian Society for Humane Science, a name that better reflects our values and our commitment to achieving better science without animals.

Notable achievements this year:
- We exceeded our target of 30 guest classes for the year by February 28! We responded to COVID-19 school closures in March by pivoting to provide online classes to over 500 students.
- We convened a group of legal experts from across the country to brainstorm legislative solutions for animal-based science in Canada. This work is gathering momentum and the results will unfold in 2021.
- We created a new series of online Humane Science Education packages available by subscription at reasonable cost (www.forhumanescience.org/hsesubscriptionpackages), making it easy for teachers and students to access humane science education materials, and book live online sessions.

In 2020, we said goodbye to Samantha Berscht as a Board member - we are very grateful for Sam’s service and engagement. She will be missed! We also said goodbye to our Program Coordinator, Nicole Lee-Kauer, who provided excellent support and creative work in the first half of 2020.

The year has been a challenging one for the charitable sector - due to the impacts of COVID-19 many charities and non-profits will scale back their work or close their doors. We are fortunate - thanks to our committed donors, members, funders, volunteers and other supporters, we ended 2020 in a much stronger position than we could have imagined when the pandemic first hit in March. We are now able to look to 2021 with optimism, fuelled by our supporters’ unwavering commitment to animals and science.

Thank you.
Nicole Fenwick
President
The Society for Humane Science is Canada’s first and only national registered charity working solely to promote better science without animals. The animals used in science (research, testing and education) are often overlooked in national animal advocacy efforts, and the animals involved are some of the most invisible in our society. We work to provide science-based education on why and how to replace animal use in research, testing and education for the advancement of science, and the improvement of animal welfare and human health.

**BOARD**

Nicole Fenwick (President)
Dr. Joanna Makowska (Vice President)
Melinda Mennie (Secretary)
Dr. Sara Dubois (Treasurer)
Lesley Fox
Dr. Holly Longstaff
Ted Roh

**STAFF**

Dr. Elisabeth Ormandy (Executive Director)
Nicole Lee-Kauer (Program Coordinator, Jan-Jun 2020)

**Membership with Humane Canada**
The Society for Humane Science is delighted to be a member of Humane Canada. Membership was issued in March 2018.

**Partnership with the Humane Education Coalition**
The Society for Humane Science is a proud partner of the Humane Education Coalition. Partnership began in 2018.

**Partnership with the Canadian Centre for Alternatives to Animal Methods**
The Society for Humane Science values our partnership and collaboration with the Canadian Centre for Alternatives to Animal Methods (CCAAM) at the University of Windsor.

**Canada’s first Humane Science Education Program for Schools**
In 2020, the Society for Humane Science created Canada’s first Humane Science Education Program for schools. Our program includes downloadable unit/lesson plans and student workbooks, recorded classes, and the ability to book online teacher training sessions or guest classes for students. Pricing starts at just $50 per year.

**Leading the charge for national legislation for animals in science**
The Society for Humane Science is spearheading a conversation about the oversight and governance of animal-based science in Canada. Canada currently has no national legislation regarding animal-based science - we aim to change that.
Influencing science culture is the first strategic pillar guiding our work. Current prevailing science culture sees animal models as the gold standard for research, testing and education. We are working to change this customary reliance on animal models in some key ways:

**Intervention in early science education**

There is a deeply held assumption that conventional animal dissection is the best way to learn about anatomy and body systems. So, dissection remains commonplace in our schools. However, there is compelling evidence to show that non-animal teaching methods, like virtual anatomy tools, are better for education, less costly for school budgets, safer and more inclusive for students, and a greener option in terms of environmental impact. They are also the ethical option. There are principles that guide the ethical use of animals in science and science education, called the Three Rs - replacement, reduction, refinement. The principle of replacement tells us that if we can meet our scientific or educational goals without using animals, then it is an ethical obligation to use non-animal methods.

In 2020, we conducted a **systematic review** of empirical data from the past 15 years that compared student learning outcomes when they used non-animal methods compared to dissection. The results of our systematic review show that 9 out of 10 students learn just as well, and in many cases better, when they use non-animal teaching methods compared to dissection. Based on this evidence, under the principle of replacement, dissection should be phased out. We aim to publish our study a peer-reviewed education journal in 2021.

At the Society for Humane Science, **we have established Canada’s first Humane Science Education (HSE) Program**. The program teaches K-12 life science content, including internal anatomy, without using a single real animal specimen - instead, we use virtual anatomy tools, paper dissections, plastic anatomy models, and virtual and augmented reality technology.

Despite the restrictions imposed by COVID-19, in 2020 we delivered 41 guest classes and participated in 11 talks and teacher training workshops. In March we were able to pivot quickly and offer our classes online to a wider audience - between March 26-June 30 we taught over 500 students via online classes. The success of those online classes led us to further develop our HSE Program materials, and we now offer a series of subscription packages (starting at just $50 per year) that contain downloadable unit/lesson plans and student workbooks exploring animal and human anatomy, recorded classes, recorded tutorials, and links to book live online teacher training workshops or guest classes. The packages are named after famous female scientists: **Curie, Franklin, Carson, and Goodall**.
**Intervention in undergraduate science education**

The legislative and policy landscape (both national and international) is rapidly changing, and the replacement of animals in science is a key focus of emerging laws and policy decisions. Furthermore, under the internationally accepted Three Rs principles, researchers are required to consider non-animal methods as a first step. However, there is evidence that this is not happening and those using the Three Rs framework tend to favour refinement over replacement, despite the availability of non-animal methods. Thus, tertiary-level education about the availability and effectiveness of non-animal methods in research, testing and education, how non-animal methods are developed, validated and adopted, and the science and technology behind them, needs to be a priority so that undergraduate students are aware of both the fast-emerging technologies that are replacing animals, and their ethical (and sometimes legal, depending on the country) responsibilities to replace animals in science wherever possible.

To address the gap in current undergraduate education we developed and now teach Canada’s first undergraduate science course that is fully focused on non-animal methods. The course, New Approach Methods in Biomedical Science, is taught at the University of British Columbia (UBC), through the Integrated Sciences Department (Faculty of Science).

The SHS Executive Director, Dr. Elisabeth Ormandy, is the course creator and instructor. The course connects students to the latest information about non-animal methods in biomedical sciences, as well as the international community of scholars, industry experts, and policy makers working in this exciting, emerging field.

2020 saw the first cohort of students take the course and it was a resounding success! For part of their evaluation, the students completed group projects on their chosen non-animal methodologies, and produced high-quality work focused on the following areas: blood-brain-barrier-on-a-chip, intestinal organoids, human patient simulators, body-on-a-chip, and brain organoids.

The course will be offered again in 2021 and 2022.

We are grateful to the BC Foundation for Non-Animal Research (BCFNAR) for providing seed funding to UBC for the course for the first three years (2020-2022).
The second strategic pillar of our work is policy reform. Canada lacks progressive policies or laws regarding the use of animals in science. We aim to change that, so in 2020 we worked on two key policy reform efforts:

**Dissection policies**

While dissection remains prevalent in Canadian schools, there are very few student choice policies, and even fewer policies that aim to phase out dissection. Across Canada there are just a handful of student choice policies, which typically require teachers to give students advance notice of any upcoming dissection and then a free choice between dissection and non-animal teaching methods (e.g. virtual anatomy tools). **We have developed an advocacy toolkit that students can use to approach their school board to ask for a student choice policy** - the kit includes a template letter to the school board, a template school petition, and a slide deck with notes that students can use if they are invited to present their case at a school board meeting.

In late 2020 we were contacted by a student group - Our Voices for Change - from Okanagan Mission Secondary school in British Columbia. The students are doing an advocacy project to phase out dissection in their school district. Work to support the students will continue into 2021.

**National legislation for animal-based science**

In response to the need for deep policy reform for animal-based science in Canada, in 2020 we convened and co-hosted a group of legal and subject matter experts from across the country to brainstorm legislative solutions. The group first met in Toronto on March 8, 2020, and there have since been several remote follow-up meetings. With the Society for Humane Science as the stewards, the group has outlined some key objectives and strategies, and drafted a white paper that will be used to create policy recommendations.

The white paper is scheduled to be completed by April 2021. We are grateful to Animal Justice, Humane Canada and Humane Society International for collaborating with us on this effort.

We are grateful to the Robert and Judith Clark Foundation for Animal Rights for providing financial support for this work.
OUR ED SPOKE AT TEDx THIS YEAR

Despite the cancellation of many conferences and other events that would usually make for a busy event schedule for us, we were still able to participate in some key events in 2020 via virtual conference platforms.

**Notable events:**
- BC Teachers’ Federation Conference (Jan 25)
- Catholic Educators’ Convention (Feb 13)
- Surrey Teacher Association Conference (May 1)
- Humane Canada Conference (May 20-21)
- Educational Computing Organization of Ontario (ECOO) conference (Aug 26)
- Canadian Animal Law Conference (Sept 13)
- Compassion for All Humane Education conference (Oct 18)

One major highlight for 2020 was the **TEDxSFU Unravel conference** - our Executive Director, Dr. Elisabeth Ormandy, was selected as a speaker at this high profile event. As with other major events for 2020, the conference was held virtually, but was full to capacity. Dr. Ormandy’s TEDx talk focused on the need for a paradigm shift in science teaching and practice towards non-animal methods, as well as the need to shift our current governance system for animal-based science towards legislation. Her talk, "**A brave new future for science beyond traditional animal models**" is now publicly available on the TEDx YouTube channel.

In 2020 we also engaged in a collaboration with UBC for their Applied Animal Biology practicum course. We recruited UBC student Janella Schwab to help us conduct a systematic review of literature exploring the educational merit of non-animal teaching methods compared to dissection.

In 2020 we ran our first targeted outreach and fundraising campaign to mark our 5th anniversary. Our goal was to raise $5,000 in 5 weeks, and it was a great success! Not only did we gain more supporters and followers, but we surpassed our original goal and raised $5,900. We are grateful to Tracey Barr, our fundraising consultant, for being instrumental in the success of our birthday campaign. We learned a lot through the process and we are looking forward to our next major campaign in April 2021.
We gratefully acknowledge the support of the following funders and major donors in 2020:

THE ROBERT AND JUDITH CLARK FOUNDATION

THE MCLEAN FOUNDATION

THROW THE SWITCH IGOR FOUNDATION

thank you
### 2020 FINANCES

**Revenue**
- **Grants**: $138,975.00
  - Vancouver Foundation: $50,000
  - Clark Foundation: $50,000
  - BC Gaming Grant: $14,600
  - BC SPCA: $10,000
  - McLean Foundation: $10,000
  - Animal Welfare Institute: $2,875
  - Throw the Switch Igor Foundation: $1,500
- **Donations**: $25,052.85
- **Other (e.g. interest)**: $375.20
- **Memberships**: $780.00
- **Fees for Service**: $1,848.00

**Total Revenue**: $167,031.06

**Expenses**
- **Charitable Activities**: $73,486.78
  - Executive Director Salary (Administrative Duties; 20%): $10,777.19
  - Office Rent: $6,349.68
  - Insurance: $683.34
  - Legal Fees: $710.67
  - Accounting Consultant: $691.77
  - Other Admin. Costs (e.g. website, admin. software, bank fees): $5,227.38
- **Fundraising**: $8,447.60
- **Administration**: $24,440.03
  - Executive Director Salary (Charitable Activities; 80%): $43,108.77
  - Program Coordinator Salary: $19,416.50
  - Program Delivery Costs (e.g. software subscriptions, printing, travel, etc.): $10,961.51

**Total Expenses**: $106,374.41