# TABLE OF CONTENTS

ICCT’s 2019 year in review ......................................................................................................................... 1  
Electric vehicles ............................................................................................................................................. 2  
Passenger vehicles ....................................................................................................................................... 6  
Heavy-duty vehicles .................................................................................................................................. 10  
Fuels .................................................................................................................................................................. 14  
Aviation ............................................................................................................................................................ 18  
Marine .............................................................................................................................................................. 22  
Audited financials ......................................................................................................................................... 26  
Staff ................................................................................................................................................................... 27
ICCT’S 2019 YEAR IN REVIEW

The year 2019 saw significant staff growth at the ICCT, which we expect to continue in 2020. That was a reflection of growing need above all. The climate crisis is urgent. Lack of leadership from some quarters where we had come to expect it means that others must step up. Cities and other subnational governments in particular have begun to do so, to an even greater extent than before. Our work is evolving to reflect the changing policy landscape. So is our organization. Much of our staff growth is in India, Latin America, and Asia, each crucial to global progress on clean transportation policies.

The following pages highlight some of the policy-relevant work that ICCT’s dedicated researchers produced in 2019. Our aviation team continued to shine a light on the climate and noise impacts of supersonic aircraft, which some investors are eager to revive, while also ramping up work on alternative jet fuels and carrying out a unique, bottom-up global inventory of carbon dioxide emissions from commercial aviation. Our fuels team, in addition to collaborating on research into alternative fuels for aviation, was actively engaged on advanced biofuels in markets from India to Brazil and Europe. Researchers in our marine program put useful numbers to policy questions ranging from the costs and benefits of an emissions control area in the Pearl River Delta to the potential fuel and emissions savings from advanced wind-assist and hull-air lubrication technologies for ships.

On land, electrification is a dominant theme, with new ICCT studies ranging across global markets from China to India to the United States and Europe on topics such as estimating charging infrastructure needs and costs, identifying regulatory pathways for zero-emission vehicle mandates, funding the electric transition, and more. But a glance at the work of our passenger vehicle and heavy-duty vehicle teams makes clear that the growing emphasis on electrification does not come at the expense of research aimed at increasing the efficiency of conventional vehicles and reducing emissions to benefit air quality. From harmonizing HDV emissions standards and greening supply chains to deploying cutting-edge remote-sensing technology to measure the tailpipe emissions of vehicles operating on urban roads, ICCT’s research teams continue to produce foundational work for sound, evidence-based public policy.

So 2019 was a busy year, with much accomplished, but much remaining to be done. We look forward to another year of growth and new opportunity to make change in 2020.

Drew Kodjak
Executive Director
ELECTRIC VEHICLES

The widespread adoption of electric vehicles is a vital component of the future of clean transportation. To address air quality, pollution, and climate change issues, local, national, and regional governments are implementing policies to hasten this transition. These range from strengthening emissions regulations, to setting electric vehicle sales targets, to establishing low or zero-emission zones. Along with other zero-emission options, electric transport beyond passenger vehicles is also beginning to take hold. From electric ferries to the introduction of electric heavy-duty vehicles, electric technologies are becoming an increasingly common aspect of the transportation ecosystem.

In 2019, researchers at the ICCT undertook an assessment of the costs and benefits of the transition to zero-emission passenger vehicles. They found the benefits of the ZEV transition are estimated to outweigh costs before 2030, and 2020–2050 cumulative benefits will outweigh the costs by a factor of about 5 to 11.
**ELECTRIC VEHICLE GUIDEBOOK FOR INDIAN STATES**

In 2019, ICCT researchers created a guidebook to help Indian policymakers craft regionally focused policy packages to effectively promote electric vehicle adoption. The guidebook outlines an electric vehicle policy development cycle that explains how state-level electric vehicle policies should be drafted, implemented, and assessed. The guidebook also identifies 83 individual policy actions relevant for state-level governments which address five common barriers to electric vehicle adoption: model availability, cost competitiveness, fleet deployment, usage convenience, and consumer understanding. The guidebook aims to assist state-level policymakers in establishing a strong electric vehicle strategy that is responsive to regional needs.

“The more the charging providers see [charging use increase], the more assurance they have that all of their investments in charging will be attractive ones over the long term. And then, vice versa: All of that charging instills more confidence in electric vehicle drivers, and in prospective electric-vehicle consumers to buy electric vehicles.” (Nic Lutsey, ICCT Program Director)

**PUBLICATIONS OF NOTE**

Funding the transition to all zero-emission vehicles (white paper)  
https://theicct.org/publications/funding-ZEV-transition

Estimating electric vehicle charging infrastructure costs across major U.S. metropolitan areas (working paper)  
https://theicct.org/publications/charging-cost-US

Estimating the infrastructure needs and costs for the launch of zero-emission trucks (white paper)  
https://theicct.org/publications/zero-emission-truck-infrastructure

Update on electric vehicle costs in the United States through 2030 (working paper)  

Figure: Cumulative electric passenger vehicles through 2018, and 2018 electric vehicle share of new passenger vehicles in 25 metropolitan areas.  
Source: Electric vehicle capitals: Showing the path to a mainstream market  

Figure: Initial purchase price of conventional gasoline and battery electric vehicles with 150-300 battery range.  
Source: Funding the transition to all zero-emission vehicles  
https://theicct.org/publications/funding-ZEV-transition
PASSENGER VEHICLES

While countries and regions are increasingly implementing policies to promote the shift to electric vehicles, standards and compliance mechanisms to monitor the emissions of combustion engine vehicles are still an important aspect of plans to combat air pollution and climate change. ICCT researchers in Europe produced a comprehensive report containing recommendations for the next stage of emissions standards in Europe, which included new limits for currently unregulated pollutants, introducing not-to-exceed limits for CO during real-world testing, and extending market surveillance effort. ICCT also released the results of a remote emissions sensing campaign in Paris, in which the emissions of over 180,000 vehicles were tested. The analysis revealed that nitrogen oxide (NOx) emissions from Euro 6 diesel cars were 4.8 times those of Euro 6 petrol cars and 6 times laboratory limits.
While the Dieselgate scandal raised awareness of “defeat devices,” or software which manipulates pollutant emission controls when vehicles are operating during normal driving, third-party evaluation remains difficult. To aid in detection by governments and third parties, ICCT researchers developed a seven-step methodology that uses vehicle testing to determine the presence of an inappropriate calibration change. Using the methodology, the researchers tested two vehicles for defeat devices and found alarming increases in real-world emissions under routine urban driving conditions and after small changes in ambient temperature. In addition, as multiple defeat devices and design limitations are activated, NO\textsubscript{x} emissions may increase to as much as 20 times the type-approval limit.

Car manufacturers continue to report that the fuel consumption of new cars is far too low. According to a study by the non-profit organization International Council on Clean Transportation (ICCT), the actual consumption values in 2017 deviated on average by 39 percent from the information provided by the groups. Motorists must therefore spend around 400 euros a year on the additional fuel. The climate impact is also higher than specified. The researchers compared 1.3 million cars from eight European countries.

Figure: Average fuel-specific NO\textsubscript{x} emission by fuel type and Euro standard for passenger cars and light commercial vehicles in Paris and the CONEX database.

Figure: NO\textsubscript{x} emission testing
Source: Beyond NO\textsubscript{x}: Emissions of unregulated pollutants from a modern gasoline car https://theicct.org/publications/beyond-nox-emissions-unregulated-pollutants

**PUBLICATIONS OF NOTE**

Recommendations for post-Euro 6 standards for light-duty vehicles in the European Union (report)
https://theicct.org/publications/recommendations-post-euro-6-eu

Beyond NO\textsubscript{x}: Emissions of unregulated pollutants from a modern gasoline car (white paper)

Meeting South Africa’s new passenger vehicle CO\textsubscript{2} emission standards (working paper)
https://theicct.org/publications/south-africa-pv-co2-std-20190409

Remote sensing of motor vehicle emissions in Paris (white paper)
https://theicct.org/publications/on-road-emissions-paris-201909
HEAVY-DUTY VEHICLES

As activity grows and other sectors become more efficient and/or shift to alternative fuels, medium- and heavy-duty vehicles are expected to be responsible for the largest fraction of transport-sector emissions by 2040. Diesel-powered trucks also disproportionately contribute to air pollution. While significant efforts are being made to decarbonize heavy-duty vehicles and eventually implement the widespread use of zero-emission transport, fuel consumption and emission standards are still an important tool for reducing emissions in the transport sector.

In 2019, the European Union and the United States initiated regulatory processes to update heavy-duty vehicle emission standards. As most countries around the world follow the U.S. and EU requirements, harmonization of these standards would have positive international repercussions. ICCT researchers offered concrete recommendations to improve and harmonize the standards, including tightening NO\textsubscript{x} limits, monitoring via in-use testing, and increasing the use of on-board diagnostics and monitoring.
Using green strategies is important for ensuring the shipment of goods has less of an impact on the environment. To quantify the impact such strategies could have, researchers at the ICCT leveraged data from The Home Depot and the EPA’s SmartWay program to assess the energy, climate, and health impacts of technology and other emissions reduction strategies on an eastbound trade route from China to the United States. The researchers found that long-term, energy use and CO₂ emissions could be reduced by more than 60% and local NOₓ and PM₂·₅ pollutants could be reduced by more than 80%. The study is one of the first studies to incorporate technology research, operational best practices, and emissions accounting methodologies in an in-depth assessment of a real-world supply chain.

![supply chain characterization diagram]

Figure: Supply chain characterization

[CO₂ fleet limit values] would create incentives for manufacturers to deliver vehicles that are already in demand. However, a “higher level of ambition” is necessary to achieve the climate goals.

Peter Mock from the International Council on Clean Transportation also urged increases in ambition. The current proposal is an “important and good step in the right direction,” but nothing is sufficient from a climate protection perspective. Attention should also be paid to loopholes. For example, Mock warned that manufacturers could push their emission levels up in the reference year 2019 in order to make savings more easily later.

PUBLICATIONS OF NOTE

Current state of NOx emissions from in-use heavy-duty diesel vehicles in the United States (white paper)

Future heavy-duty emission standards: An opportunity for international harmonization (white paper)

Global progress toward soot-free diesel vehicles in 2019 (report)

The future of VECTO: CO2 certification of advanced heavy-duty vehicles in the European Union (white paper)

Figure: Key energy loss areas on a trailer during typical operation and technologies to reduce these losses. Source: The future of VECTO: CO2 certification of advanced heavy-duty vehicles in the European Union

Figure: Potential cumulative fuel-consumption reduction from selected tractor-trailer efficiency technologies in China in the 2020-2030 timeframe. Source: Heavy-duty vehicles in China: Cost-effectiveness of fuel-efficiency and CO2 reduction technologies for long-haul tractor-trailers in the 2025-2030 timeframe
Alternatives to fossil fuels go beyond food-based biofuels such as corn ethanol. From renewable gas to lignocellulosic energy crops and waste, regulators are increasingly looking at alternative energy options to meet their climate goals. Researchers at the ICCT focus on analyzing the production potential, cost, and climate performance of these alternative fuels. In addition, ICCT experts assess the feasibility of meeting renewable energy goals and regulations with forecasted technologies and production.
DOES BIOENERGY IMPROVE FOREST MANAGEMENT?

More than half of all renewable energy used in the European Union comes from biomass, and much of this is roundwood from deforestation and clearcutting of plantations.

ICCT researchers conducted a study which presented strong evidence that biomass burning is bad for climate, despite claims that it is a net positive. The study was an important contribution to the discussion surrounding the climate impact of forest bioenergy. Subsequently, the European Commission released its Biodiversity Strategy, which included language urging minimization of the burning of whole trees and amending the Recast Renewable Energy Directive to address the sustainability of forest biomass. Europe is now on the path to changing the role of roundwood in its renewable energy policy, which could have significant climate benefits.

Table: Strength of evidence that bioenergy demand has driven forest management changes that can reduce bioenergy carbon debt

<table>
<thead>
<tr>
<th>Forest management change</th>
<th>Canada</th>
<th>Sweden</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased residue removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logging residues</td>
<td>Weak</td>
<td>Weak</td>
<td>None</td>
</tr>
<tr>
<td>Salvage logs from infestation</td>
<td>Strong</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>More intensive stand management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site preparation</td>
<td>None</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td>Thinning</td>
<td>None</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td>Fertilization</td>
<td>None</td>
<td>Weak</td>
<td>Strong</td>
</tr>
<tr>
<td>Change to higher yielding species</td>
<td>None</td>
<td>Weak</td>
<td>Moderate</td>
</tr>
<tr>
<td>Afforestation / avoided deforestation</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

In France alone, more than 75% of the 900,000 tonnes of palm oil imported each year ends up in the tanks of diesel vehicles. According to a study published in November by the NGO International Council on Clean Transportation, “analysis of satellite images has shown that between 40% and 53% of the expansion of palm oil plantations in Indonesia and in Malaysia, from 1990 to 2015, was carried out on land with a high carbon stock, such as forests, wetlands and grasslands.”

**PUBLICATIONS OF NOTE**

The potential for advanced biofuels in India: Assessing the availability of feedstocks and deployable technologies (working paper)

Assessing the potential advanced alternative fuel volumes in Germany in 2030 (working paper)
https://theicct.org/publications/potential-advanced-fuel-volumes-germany

Opportunities and risks for continued biofuel expansion in Brazil (briefing)
https://theicct.org/publications/biofuel-expansion-Brazil

Advanced alternative fuel pathways: Technology overview and status (working paper)

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**Figure:** Projected advanced alternative fuel volumes with policy support of 2.00 Euros per diesel-equivalent liter
Source: Projected contribution of advanced fuels to Germany’s RED II targets in 2030

**Figure:** Global palm oil imports by top importing countries
Source: International policy and market drivers of Indonesian palm oil demand
https://theicct.org/publications/international-policy-and-market-drivers-indonesian-palm-oil-demand
In 2019, the environmental consequences of air travel were pushed into public consciousness due to the “flygskam” or “flight shame” movement, a campaign originated in Sweden that urges people to consider taking less-polluting forms of transportation. At the same time, a possible resurgence of supersonic air travel, and the high emissions and noise pollution that go with it, threatens to drive the environmental impact even higher. Countries and international bodies have continued efforts to curb the environmental impact of air travel. As of June 2019, 114 International Civil Aviation Organization member countries, representing more than 93% of global international air traffic, submitted action plans to ICAO outlining plans to reduce aviation emissions. ICCT estimates that emissions have increased by 32% over the past 5 years despite efforts to improve efficiency, showing more action is sorely needed.
**CO₂ EMISSIONS FROM COMMERCIAL AVIATION, 2018**

ICCT researchers published a global emissions inventory for commercial aviation, finding that CO₂ emissions from all commercial operations in 2018 totaled 918 million metric tons, an equivalent of 2.4% of global CO₂ emissions. This is a 32% increase in emissions over the past five years.

Flights departing from the United States were responsible for about one-quarter of global passenger transport-related CO₂ emissions, two-thirds of which came from domestic flights. China, the United Kingdom, Japan, and Germany rounded out the top five countries with the highest aviation-related carbon emissions. For the global commercial fleet, 43% of CO₂ was linked to passenger movement in narrowbody aircraft, followed by widebody jets (33%), and regional aircraft (5%). The remaining aviation emissions were driven by freight carriage.

The International Council on Clean Transportation said recently that carbon-dioxide emissions and fuel burning rose 7 percent from 2016 to 2018, overshadowing a 3-percent gain in fuel efficiency.

The report’s authors say airlines could reduce emissions and fuel consumption more than 25 percent by buying newer planes and filling them with more passengers.

Dan Rutherford, one of the report’s authors, said airlines are slowly boosting efficiency, but not enough to keep up with the growth in travel. “We are heading off an emissions cliff right now. This is becoming even more urgent,” he said.

ICCT aviation researcher Brandon Graver discusses findings of a study on global aviation CO₂ emissions. Source: Carbon dioxide emissions from commercial aviation in 2018
https://www.youtube.com/watch?v=oAkvaDwjsc0&t=15s

| 1. LATAM | Average fuel efficiency [pax-km/L] | 43 |
| 2. Azul | | 42 |
| 3. Aerolineas Argentinas | | 36 |
| 4. Delta | | 35 |
| 4. Spirit | | 35 |
| 6. Avianca | | 33 |
| 6. American | | 33 |
| 6. United | | 33 |
| 6. JetBlue | | 33 |
| 10. TAME | | 29 |

**Excess fuel/pax-km**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ 2%</td>
</tr>
<tr>
<td></td>
<td>+ 19%</td>
</tr>
<tr>
<td></td>
<td>+ 23%</td>
</tr>
<tr>
<td></td>
<td>+ 23%</td>
</tr>
<tr>
<td></td>
<td>+ 30%</td>
</tr>
<tr>
<td></td>
<td>+ 30%</td>
</tr>
<tr>
<td></td>
<td>+ 30%</td>
</tr>
<tr>
<td></td>
<td>+ 30%</td>
</tr>
<tr>
<td></td>
<td>+ 48%</td>
</tr>
</tbody>
</table>

**INDUSTRY AVERAGE**

**Figure:** Fuel efficiency of 10 major airlines in the U.S.–SA market, 2018.
Source: U.S.–Latin America airline fuel efficiency ranking, 2017–2018

**PUBLICATIONS OF NOTE**

*U.S. domestic airline fuel-efficiency ranking 2017-2018* (white paper)

*Economic incentives for fuel efficiency under a U.S. aircraft CO₂ standard* (working paper)

*Noise and climate impacts of an unconstrained commercial supersonic network* (working paper)
MARINE

Despite being a cost-efficient means of transport, maritime shipping is a significant source of pollutants contributing to climate change and climate-related health issues. In May, the International Maritime Organization strengthened energy efficiency standards for new ships and set out a plan to consider a ban on heavy fuel oil for select ships in the Arctic. An ICCT case study on alternative propulsion technology found that using rotor sails reduced route-level fuel consumption, CO$_2$ emissions, and carbon intensity up to 47%, and employing hull air lubrication yielded savings of up to 13%. In addition, ICCT research has shown that switching to distillate fuels or hydrogen power would result in fewer to no air and climate pollutants, including black carbon.
HEAVY FUEL OIL, EXHAUST GAS CLEANING SYSTEMS, AND BRITISH COLUMBIA’S RESIDENT KILLER WHALES

In order to comply with regulations to reduce air pollution and greenhouse gas emissions, many shipping companies have installed exhaust gas cleaning systems, or scrubbers, to be able to continue to use cheaper bunker fuel. However, the wastewater from these systems is harmful to sea life. Researchers at the ICCT produced a study on heavy fuel oil use and scrubber washwater discharge from ships operating off the coast of British Columbia, Canada. The study found that in 2017, 30 scrubber-equipped ships emitted nearly 35 million tonnes of scrubber washwater. Cruise ships were responsible for 90% of this discharge. Without rules requiring closed-loop or zero-discharge operations, the use of open-loop or hybrid scrubbers operating in open-loop mode is expected to grow, increasing washwater pollution discharges and perpetuating the risk of an HFO spill.

The ICCT has estimated that cruise ships with scrubbers will consume around 4 million tons of heavy fuel oil in 2020 and will discharge 180 million tons of contaminated scrubber washwater overboard.

“About half of the world’s roughly 500 cruise ships have or will soon have scrubbers installed,” said Mr Comer. “Cruise ships operate in some of the most beautiful and pristine areas on the planet, making this all the more concerning.”

PUBLICATIONS OF NOTE

Costs and benefits of a Pearl River Delta Emission Control Area (report)
https://theicct.org/publications/pearl-river-delta-eca-201907

Rotors and bubbles: Route-based assessment of innovative technologies to reduce ship fuel consumption and emissions (working paper)
https://theicct.org/publications/working-paper-imo-rotorships

Action plan for establishing China’s national emission control area (policy update)

Transitioning away from heavy fuel oil in Arctic shipping (working paper)
https://theicct.org/publications/transitioning-away-heavy-fuel-oil-arctic-shipping
AUDITED FINANCIALS

Consolidated Statements of Financial Position
December 31, 2019

**Assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>$4,106,590</td>
</tr>
<tr>
<td>Promises to give, net</td>
<td>$6,817,917</td>
</tr>
<tr>
<td>Accounts receivable, net</td>
<td>$923,527</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>$105,127</td>
</tr>
<tr>
<td>Deposit</td>
<td>$573</td>
</tr>
<tr>
<td>Property and equipment, net</td>
<td>$340,007</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td><strong>$12,293,741</strong></td>
</tr>
</tbody>
</table>

**Liabilities and Net Assets**

<table>
<thead>
<tr>
<th>Liabilities:</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts payable and accrued expenses</td>
<td>$1,169,245</td>
</tr>
<tr>
<td>Deferred rent</td>
<td>$346,470</td>
</tr>
<tr>
<td>Refundable advances</td>
<td>$964,851</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td><strong>$2,480,566</strong></td>
</tr>
</tbody>
</table>

**Net assets:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without donor restrictions</td>
<td>$1,163,407</td>
</tr>
<tr>
<td>With donor restrictions</td>
<td>$8,649,768</td>
</tr>
<tr>
<td><strong>Total net assets</strong></td>
<td><strong>$9,813,175</strong></td>
</tr>
</tbody>
</table>

**Total liabilities and net assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total liabilities and net assets</strong></td>
<td><strong>$12,293,741</strong></td>
</tr>
</tbody>
</table>

Consolidated Statements of Activities
Year Ended December 31, 2019

<table>
<thead>
<tr>
<th>Description</th>
<th>Without Donor Restrictions</th>
<th>With Donor Restrictions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue and support:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants and contributions</td>
<td>$279,728</td>
<td>$9,465,878</td>
<td>$9,745,606</td>
</tr>
<tr>
<td>Contract income</td>
<td>1,230,922</td>
<td></td>
<td>1,230,922</td>
</tr>
<tr>
<td>Interest income, net</td>
<td>36,744</td>
<td></td>
<td>36,744</td>
</tr>
<tr>
<td>Other income</td>
<td>20,012</td>
<td></td>
<td>20,012</td>
</tr>
<tr>
<td>Net assets released from restriction</td>
<td>6,197,926</td>
<td>(6,197,926)</td>
<td></td>
</tr>
<tr>
<td><strong>Total revenue and support</strong></td>
<td>7,765,332</td>
<td>3,267,952</td>
<td>11,033,284</td>
</tr>
</tbody>
</table>

| Expenses:                                   |                            |                         |             |
| Program services                            | 8,597,743                  |                         | 8,597,743   |
| Supporting services:                        |                            |                         |             |
| Management and general                      | 2,309,549                  |                         | 2,309,549   |
| Communications                              | 345,178                    |                         | 345,178     |
| Development                                 | 652,243                    |                         | 652,243     |
| **Total expenses**                          | 11,904,713                 |                         | 11,904,713  |

| **Change in assets**                        | (4,139,381)                | 3,267,952               | (871,429)   |

**Net assets:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning, as restated (Note 12)</td>
<td>$5,302,788</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending</td>
<td><strong>$1,163,407</strong></td>
</tr>
</tbody>
</table>

These 2019 financial statements have been derived from complete financial statements, which were audited by RSM US LLP.
STAFF

Anup Bandivadekar  
Brigitte Bernal  
Kate Blumberg  
Caleb Braun  
Jennifer Brodskaya  
Kamrin Brown  
Jennifer Callahan  
Chen Chen  
Xi Chen  
Jessica Chu  
Bryan Comer  
Tim Dallmann  
Oscar Delgado  
Samantha D’Introno  
Cristiano Facanha  
Elise Georgeff  
Brandon Graver  
Dale Hall  
Hui He  
Ulises Hernandez-Jimene  
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Anastasia Kharina  
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Michael Nicholas  
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Samantha Pettigrew  
Clint Petty  
Leticia Pineda  
Francisco Posada  
Benjamin Posner  
Dan Rutherford  
Joe Schultz  
Stephanie Searle  
Zhenying Shao  
Benjamin Sharpe  
Peter Slowik  
Amy Smorodin  
Kurt Sodee  
Brianna Thompson  
Diane Tworog  
Moaz Uddin  
Chuqi Wu  
Yihao Xie  
Zifei Yang  
Aaron Yu  
Kevin Zhang  
Sola Zheng  
Yuanrong Zhou