

## **Ethical Investment Advisory Committee**

April 2019 Report to the Investment Committee

### **Recommendations**

The EIAC recommends the following actions:

1. That the University become a signatory to the Climate Action 100+ coalition;
2. That the Investment Committee adopt the following resolution: “The University of Rochester pledges to make no direct investments in companies engaged in substantial production of thermal coal or oil from tar sands, with the understanding that the EIAC will revisit this pledge if the facts underlying this recommendation should change.” The Investment Pool does not currently include any direct investments of these kinds, so making this pledge would not require any changes to existing investments.

### **Background**

The impetus to form our committee came from a groundswell of support among students and faculty for some form of divestment related to climate change. After working closely with Doug Phillips and the Investment Office for nearly two years, we recognize the limitations of sweeping investment screens as a strategy for aligning the University’s Investment Pool with its institutional values and ethical commitments. Accordingly, we have explored alternative forms of engagement to advance the University’s values without undermining investment performance. The most constructive form of shareholder engagement we have identified is that of the Climate Action 100+ coalition, described below. Meetings with the University of Rochester Sustainability Council, the Faculty Senate, open forums, and our own analyses lead us to also recommend two non-investment pledges pertaining to business sectors in which the University does not currently have direct investments: thermal coal production and tar sands. Concerns about other business sectors, including for-profit prisons, are under review.

Climate destabilization is a fundamental threat to human well-being, and universities and other institutions have ethical responsibilities to limit the negative externalities or harms caused by their own activities and associated with their investments. As institutions committed to education and advancing knowledge in the public interest, universities also have obligations to educate, inquire, and lead by example in seeking solutions to the challenges that the society and world must overcome. In the sphere of investment policy, the underlying ethical principle is that investments should be consistent with these fundamental institutional commitments and with the fundamental moral obligation of all institutions and individuals to take care to avoid causing harm. In applying this principle, it should be understood that investing in a business makes the investor a party to any harms imposed by the business as well as any benefits that might in some cases justify the risk of harm.

The University of Rochester has taken some meaningful steps toward reducing its harmful environmental impact since President Seligman established the University Council on Sustainability over a decade ago, but in many respects it has lagged behind peer institutions. In

the meantime, the harms of climate destabilization arising from greenhouse emissions (GHGs) are already substantial.<sup>1</sup> The scientific and inter-governmental consensus on climate destabilization has been consolidated, global institutions such as the World Bank have reshaped development policy to align with sustainability, and the professional associations to which many of our alumni belong have made ethical commitments to environmental protection and sustainability.<sup>2</sup>

The pace of observed manifestations and costs of climate destabilization has also been accelerating.<sup>3</sup> Ecosystems are being disrupted, water scarcity is growing more acute, food production in many regions is at risk or already collapsing, and climate refugees are on the move as their lands become uninhabitable.<sup>4</sup> Meanwhile, populations of mammals, reptiles, amphibians,

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<sup>1</sup> A 2011 United Nations Environmental Programme report estimated that environmental damage cost \$6.6 trillion or 11% of global economic production in 2008, and could reach \$28.6 trillion by 2050 on a business-as-usual scenario (UNEP FI, *Universal Ownership: Why Environmental Externalities Matter to Institutional Investors*. Report prepared by Trucost Plc for PRI Association and UN Environmental Programme Finance Initiative (Geneva, Switzerland, 2011), p. 88. For cost estimates limited to climate disruption that is already occurring, see NRDC, *Groundbreaking Study Quantifies Health Costs of U.S. Climate Change-Related Disasters & Disease*, published online 8 Nov. 2011, <http://www.nrdc.org/health/climate/extreme-weather-ticker-2012.asp>; WWF, 2012 *Weather Extremes: Year-to-Date Review*, published online Dec. 6, 2012, at <http://www.wwfblogs.org/climate/sites/default/files/2012-Weather-Extremes-Fact-Sheet-6-dec-2012-final.pdf>. The giant reinsurance company, Munich Re, reported in *Highs and Lows: Weather Risks in Central Europe* (Munich, 2008) that, "Our database clearly shows that the number of weather-related natural catastrophes in Europe has more than doubled since 1980. There is increasing evidence that this trend is already driven by climate change." For an analysis of which extreme weather events can be attributed to human induced climate destabilization, see Stephanie C. Herring, M. P. Hoerling, T. C. Peterson, and P. A. Scott, eds., *Explaining Extreme Events of 2013 From a Climate Perspective*, Special Supplement of the American Meteorological Society 95, no. 9 (Sept. 2014): S1-S96, <http://journals.ametsoc.org/doi/pdf/10.1175/1520-0477-95.9.S1.1>. See also, Gernot Wagner and Martin L. Weitzman, *Climate Shock: The Economic Consequences of a Hotter Planet* (Princeton: Princeton University Press, 2015). A landmark 2006 report by the Treasury of the United Kingdom quantified the costs owing to climate destabilization, projecting a 20% decline in global average consumption on a business-as-usual scenario (Nicholas Stern, *Stern Review on The Economics of Climate Change* [London: HM Treasury, 2006], archived at: [http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview\\_index.htm](http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview_index.htm)).

<sup>2</sup> See the World Bank sponsored study on which its development policies are now based: Potsdam Institute for Climate Impact Research and Climate Analysis, *Turn Down the Heat: Why a 4°C Warmer World Must be Avoided* (Washington, D.C.: The World Bank, 2013). For an example of environmental and sustainability commitments in recent professional codes of ethics, see the National Society of Professional Engineers (NSPE), Code of Ethics for Engineers (2007), <https://www.nspe.org/resources/ethics/code-ethics>.

<sup>3</sup> See IPCC, *Global Warming of 1.5 °C*, 2018, <http://www.ipcc.ch/report/sr15/>, and for a summary of it, C. Davenport, "Major Climate Report Describes a Strong Risk of Crisis as Early as 2040," *New York Times* October 7, 2018, <https://www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html>. Based on an analysis of 6,000 studies, it was the first systematic effort to project the impact of 2.7 degrees Fahrenheit (1.5° C) of global surface mean warming. It estimated the costs of such warming at \$54 trillion and predicted severe heat waves, drought, food shortages, fires, coastal inundation, and die-offs of coral reefs (and the aquatic ecosystems they support) by 2040. To put this in perspective, global surface mean temperatures have risen from about the +0.2° C to +0.4° C range in the 1970s, to +0.4° C to +0.6° C in the 1980s, to +0.4° C to +0.8° C in the 1990s, to +0.8° C to +1.2° C since 2000.

<sup>4</sup> For an overview of key causes and manifestations of unsustainability, including those related to climate, see Randall Curren & Ellen Metzger, *Living Well Now and in the Future: Why Sustainability Matters* (Cambridge, MA: MIT Press, 2017), pp. 16-26. For region-by-region overviews, see UNEP, *Summary of the Sixth Global Environment Outlook, GEO-6, Regional Assessments: Key Findings and Policy Messages* (Nairobi: United Nations

fish, and birds have declined by sixty percent in just four decades, and human activities are causing the extinction of tens of thousands of species every year, making this era the sixth mass extinction event discernible in the 4 billion year history of life on this 4.5-billion-year-old planet.<sup>5</sup> The long geologic view of the matter, which we cannot afford to ignore, is that the advent of oxygenating photosynthetic lifeforms 3.5 billion years ago made oxygen-metabolizing lifeforms, such as our own, possible. It shaped the atmosphere and the temperate climate on which we depend, by oxygenating and removing massive quantities of carbon from the atmosphere in forms laid down as fossil hydrocarbons. Over just a couple hundred years of unearthing and burning fossil hydrocarbons as fuel, human beings have returned to the atmosphere a quantity of carbon that it took photosynthetic lifeforms a billion or so years to remove from the atmosphere. This will end very badly for us if we persist.

### **Climate Action 100+**

Climate Action 100+ is a coalition of 323 investors representing \$33 trillion under management that have agreed to engage the one hundred firms with the largest carbon footprints, as well as a variety of other important firms, on climate change issues. Specifically, they seek to convince these firms to publicly align their business strategies with the objectives of the Paris Agreement on Climate Change, to adopt a governance framework that “articulates the board’s accountability and oversight of climate change risk and opportunities,” and take concrete actions to reduce their firms’ greenhouse gas emissions. The coalition reserves the right to recommend that its members divest from individual firms in extreme cases, but so far its strategy has been to use shareholder engagement and the threat of public shaming to improve corporate social responsibility. The Sign-on Statement is here: [climateaction100.org](http://climateaction100.org).

The coalition was formed in 2017 by Asia Investor Group on Climate Change (AIGCC); Coalition for Environmentally Responsible Economies (CERES); Investor Group on Climate Change (IGCC); Institutional Investors Group on Climate Change (IIGCC); and Principles for Responsible Investment (PRI). In order for the University to become a signatory of the Climate Action 100+, it must first join one of the above-referenced founding organizations. The CERES Investor Network appears to be the most appropriate organization for the University to join.<sup>6</sup> Membership has an annual cost of approximately \$2,300. The Climate Action 100+ includes a number of powerful partners. Leading funds in the United States include CalPERS, the New York State Common Retirement Fund, New York City Pension Funds, Illinois State Treasurer’s

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Environmental Programme, 2016), <http://www.unep.org/publications/>. On the movement of climate refugees, and its role in civil war, see U.S. Department of Defense, “DoD Releases Report on Security Implications of Climate Change,” *DoD News* July 29, 2015, <http://www.defense.gov/News-Article-View/Article/612710>; J. Hammer, “Is a Lack of Water to Blame for the Conflict in Syria?” *Smithsonian Magazine* (June 2013), <http://www.smithsonianmag.com/innovation/is-a-lack-of-water-to-blame-for-the-conflict-in-syria-72513729/?no-ist;>

<sup>5</sup> R. Leakey & R. Lewin, *The Sixth Extinction: Patterns of Life and the Future of Humankind* (New York: Doubleday, 1995); Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History*. New York: Henry Holt and Co., 2015); World Wildlife Fund, *Living Planet Report 2018* (Gland, SZ: WWF International, 2018), [https://wwf.panda.org/knowledge\\_hub/all\\_publications/living\\_planet\\_report\\_2018/](https://wwf.panda.org/knowledge_hub/all_publications/living_planet_report_2018/).

<sup>6</sup> See <https://www.ceres.org/>.

Office, as well as pension funds from other cities and states, and several church denominations, including the Central Finance Board of the Methodist Church and the Presbyterian Church (USA). Foreign partners include the Church of England Pensions Board. It includes a number of major financial institutions, including Allianz SE; BNP Paribas Asset Management; HSBC Global Asset Management, Mitsubishi UFJ Trust & Banking Corporation, PIMCO, and UBS Asset Management. So far, the only U.S. educational institution that has joined the coalition is Amherst College.

The coalition has had some significant successes. On March 14, 2019, it announced an agreement with Shell, which adopted a three-year goal of reducing its net carbon footprint (NCF) by 2-3% below its 2016 level. Shell tied executive compensation for its top 150 executives to performance of this goal, and committed to adopting a more ambitious goal in 2020. On February 20, 2019, it announced an agreement with Glencore Mining, which agreed to align its objectives with the Paris Agreement on Climate Change and to refrain from expanding its coal mining capacity worldwide. On February 1, 2019 it announced an agreement with BP, which agreed to recommend that its shareholders support a resolution to align its strategy with the Paris Agreement.

The character, constitution, and early success of the Climate Action 100+ coalition make it an attractive avenue for advancing the University's fundamental values through a strategy of constructive engagement. Only one U.S. institution of higher education belongs to this coalition at present, so the University of Rochester has an opportunity to be a leader in this arena. This would be beneficial not only as a meaningful step toward advancing the University's long-term interest in a stable climate, but as a meaningful step toward overcoming a widespread perception that we lag far behind our institutional peers in this arena.

## **Coal production**

Coal production is a declining industry, owing to the hazards and liabilities of underground mining and more recently the emergence of lower-cost substitutes, chiefly natural gas. The share of coal-fired electricity generation in the United States has declined from about two-thirds in 2010 to approximately one-third today, and a number of states have taken actions to phase out coal-fired power plants.

From an environmental perspective, coal is the worst of the available means of generating electricity. Regarding climate stability in particular, coal is the worst current option because it releases more greenhouse gasses (GHGs) per unit of electricity delivered than natural gas, solar, wind, or nuclear generators. At 109 grams of carbon dioxide (CO<sub>2</sub>) equivalent per kilowatt hour of electricity generated, coal compares badly with natural gas (78 grams), solar (6 grams) and wind and nuclear (4 grams).<sup>7</sup> This unfavorable ratio of emissions to energy yield arises in part from a low EROEI, or energy return on energy invested, arising from the large quantities of energy required to mine, process, and deliver coal to coal-fired generators. Another contributing factor is the unfavorable proportions of different GHGs produced by mining and burning coal. These include nitrous oxide (N<sub>2</sub>O), which is almost 300 times as potent a GHG as CO<sub>2</sub>, and

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<sup>7</sup> Carbon Brief.org, Dec. 8, 2017, <https://www.carbonbrief.org/solar-wind-nuclear-amazingly-low-carbon-footprints>.

methane (CH<sub>4</sub>), which is 87 times more potent than carbon dioxide. From an ethical standpoint, the use of energy technologies that are more carbon-intensive than available alternatives cannot be justified unless they have compensating benefits that offset the harms of climate destabilization caused by the unnecessary GHG emissions. Coal has no such benefits, and its additional hazards to life, health, and property are substantial.

Apart from the contributions of thermal coal to climate destabilization, it causes local, regional, and cross-border harms to health and property. Coal combustion produces sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides that cause acid rain, N<sub>2</sub>O that triggers asthma and heart attacks, fine particulate matter that causes pulmonary diseases, and substantial quantities of lead and mercury (which are present in coal deposits). It is primarily owing to mercury pollution from coal plants that in 2004, the U.S. Centers for Disease Control found that “1 in 12 women of childbearing age had blood levels of mercury able to cause neurological and developmental harms to her unborn children.”<sup>8</sup>

Additional environmental concerns arise from each of the available means of extracting coal from the ground. Strip mining, mountaintop removal, and deep underground coal mining cause different kinds of environmental degradation, but in each case the damage is severe. Natural landscapes, forests, and wildlife habitats are destroyed, and groundwater sources that feed into the nation’s rivers and streams are polluted. Prominent coal-mining operations are filing for bankruptcy, and the increasingly precarious firms that continue to engage in coal production are unlikely to survive to pay for expensive environmental clean-ups, leaving those costs to be borne by the public.

A further ethical concern is the health and safety of coal miners. Coal mining is an extraordinarily dangerous profession, which has been made more dangerous by criminal negligence by some of the major mining companies. Further, in spite of regulations intended to safeguard the health of miners by improving air quality in the mines, the incidence of severe chronic obstructive pulmonary disease (COPD) has dramatically increased among miners in recent decades. The apparent cause of the increase is that the exhaustion of easily-accessible coal veins has required miners to cut through more sandstone, which deposits silica in the lungs, leading to silicosis.

### **Oil from tar sands**

Oil production from tar sands has not been profitable at the low oil prices that have prevailed in recent years, so major new investments and expansions in the industry have been frozen. At today’s oil prices in the low to mid \$60-range per barrel, industry analysts estimate that established projects will barely break even.

Extracting oil from tar sands is so energy-inefficient that it cannot be unequivocally regarded as a source of energy, as opposed to a process through which readily usable fuels are expended in the production of liquid petroleum. In this process, oil is extracted from bitumen, a waxy

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<sup>8</sup> Kristin Shrader-Frechette, *Taking Action, Saving Lives* (Oxford: Oxford University Press, 2007, p. 20; citing CDC, *Blood Mercury Levels in Young Children and Childbearing-Age Women* (Washington, D.C., 2007), p. 7.

hydrocarbon that must be liquefied and separated from large quantities of inorganic material. The energy return on conventional extraction of liquid petroleum from oil wells has sharply declined from an energy return on energy invested (EROEI) of about 100:1 in the 1940s to an average of 15:1 today and 10:1 for deep water drilling.<sup>9</sup> Tar sands mined on the surface have an EROEI of only 5:1, and oil extracted from tar sands below the surface by steam injection has an EROEI as low as 1:1. Some of the deposits that have been developed sit as far as one kilometer below the surface. Surface deposits account for a small fraction of tar sands reserves and production, so the average EROEI for tar sands development is barely above 1:1. There is, in other words, almost no net energy gain from the development of tar sands. In the absence of a substantial energy gain, the excess carbon emissions involved in producing and burning tar sands petroleum cannot possibly be justified as a necessary byproduct of energy essential to human well-being. A starting point for estimating the magnitude of these excess emissions is that “fuel extracted and refined from Canadian oil sands will release approximately 20 percent more carbon into the atmosphere over its lifetime than fuel from conventional domestic crude sources.”<sup>10</sup> Making some allowance for costs and rate of conversion to a more carbon-efficient transportation system, a better estimate of the magnitude of excess emissions would consider lower-intensity alternatives to continued reliance on domestic crude oil, such as electric vehicles that rely on solar, wind, or nuclear derived electricity. From the ethically weighty perspective of the hundreds of years of climate stability that are at stake, the most sensible policy would be to leave the carbon in tar sands deposits in the ground.

### **Actions by Peer Institutions**

The Investment Office has prepared an analysis of related actions by peer institutions, which will be distributed at the meeting. Most of our peer institutions have not yet taken action; several have gone further than our recommendations; and a couple have made the decision not to take action on fossil fuels. Sixteen of the thirty-one institutions identified as peers have established ethical investment advisory committees. Yale University has instructed its managers to refrain from investing in companies that “refuse to acknowledge the social and financial costs of climate change” and that do not make efforts to reduce greenhouse gas emissions. Columbia University has decided not to invest in any company deriving more than 35% of its revenue from thermal coal production. Johns Hopkins has divested from direct investments in thermal coal and pledged not to make new ones. Brandeis University has pledged to make no direct investments in production of thermal coal, to suspend new investments in limited partnerships engaged in fossil fuel exploration or production, to increase investment in renewable energy sources, but not to divest from commingled funds that include fossil fuel investments. Duke University’s Committee plans to make a decision on fossil fuel divestment this year. Several universities, while not undertaking divestment or pledges to refrain from investing in particular sectors, have

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<sup>9</sup> Joseph Tainter and Tadeusz Patzek, *Drilling Down* (New York: Springer, 2012), p. 200. Patzek is a prominent oil industry analyst. Over the course of his career, Tainter has documented and explained the pattern of increasingly expensive complexity and declining marginal return on investment observed in the petroleum industry. There is ample reason to expect the pattern of declining EROEIs and rising carbon-intensity of fossil fuel development to continue.

<sup>10</sup> Phys.org, “Analysis shows increased carbon intensity from Canadian tar sands,” June 26, 2015, <https://phys.org/news/2015-06-analysis-carbon-intensity-canadian-oil.html>). A wider perspective on excess carbon emissions would consider lower-intensity alternatives to continued reliance on domestic crude oil, such as electric vehicles that are charged using solar, wind, or nuclear derived electricity.

adopted guidelines on environmental, social and governance criteria to use in making such decisions. This includes Stanford and the University of Pennsylvania, which have written policies, and Harvard University, which has adopted the UN Principles for Responsible Investment.

Several peer institutions that have not taken action on climate change have faced considerable pressure from divestment movements on campus. These include Boston College, Carnegie Mellon University, Case Western Reserve University, Cornell University, Emory University, NYU, the University of Chicago, and Washington University. Most of these universities have not yet taken any official actions in response. Cornell University's Board of Trustees and NYU's Board of Trustees voted against fossil fuel divestment in 2016, and Washington University's Chancellor announced in 2017 that the University would not divest from fossil fuels. Our committee would similarly not recommend full divestment from fossil fuels, which we believe would be an impractical policy and inconsistent with the sound investment of the endowment. We think our recommended strategy of constructive engagement with a broad coalition of concerned investors, combined with selective signaling about particularly unsustainable practices, is much more justified. It is broadly consistent with an emerging consensus among our peer institutions, and provides an opportunity for the University of Rochester to exercise some leadership within that group. We also believe that this strategy will enjoy the broad support of the student body, alumni, faculty and staff, and will not entail any cost to the institution.

# Recommendation regarding investment in fossil fuels

Prepared by  
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on behalf of the

**University of Rochester**  
**Ethical Investment Advisory Committee (EIAC)**

Adopted by the EIAC  
April 15, 2021

## Executive Summary

The EIAC is recommending that the University make no new investments of its endowment in the fossil fuel sector, effectively winding down its endowment investments in that sector over the next decade. This recommendation is based on an ethical assessment grounded in relevant science and a survey of recent steps taken by peer institutions. The University's investments should be consistent with respect for human rights and its own express commitment to "human rights, democratic governance and environmental sustainability." The crux of the ethical analysis detailed in what follows is that the burning of fossil fuels is causing widespread and growing harms that constitute violations of human rights.

## Recommendation

The EIAC recommends that the Investment Committee adopt the following resolution:

*The University commits itself to making no new direct investments or investments in investment vehicles through its Long-Term Investment Pool that are primarily devoted to the development, exploration, extraction, processing, storage, transportation or distribution of fossil fuels, including petroleum, coal and natural gas, or associated services.*

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<sup>1</sup> Professor and Chair of Philosophy; EIAC member.

<sup>2</sup> Professor of Political Science; Chair of the EIAC.

<sup>3</sup> Associate Professor, Earth and Environmental Sciences; Coordinator, College Sustainability Studies; EIAC member.



## Background

The impetus to form this Committee came from a groundswell of support among students and faculty for some form of divestment related to climate change. In September 2018 the EIAC recommended and the Investment Committee adopted a Policy on Corporate Social Responsibility, which states,

*The University's mission includes education, research, creative expression, and provision of healthcare. These activities are conducted according to a set of core values, which include freedom of expression, equality of persons, respect for cultural diversity, dissemination of knowledge in the public interest, fair labor standards, human rights, democratic governance and environmental sustainability. Our investment policy seeks to assure the consistency of our institutional support strategies with our core values.*

Pursuant to this policy, the Committee has investigated means of bringing the University's investment policy more closely in line with stakeholder concerns about environmental sustainability, while maintaining the flexibility of the Investment Office to pursue strategies to balance the growth and stability of the investment pool. In 2019, the EIAC recommended and the Investment Committee adopted more specific commitments to abstain from making direct investments in thermal coal production or the extraction of oil from tar sands. In addition, the Investment Committee adopted the EIAC's recommendation that the University join Climate Action 100+, a coalition of investors and financial institutions that seeks to engage the one hundred firms with the largest carbon footprints, as well as a variety of other important firms, on climate change issues.<sup>4</sup> Specifically, they seek to convince these firms to publicly align their business strategies with the objectives of the Paris Agreement on Climate Change, to adopt a governance framework that "articulates the board's accountability and oversight of climate change risk and opportunities," and to take concrete actions to reduce their firms' greenhouse gas emissions.<sup>5</sup>

We believe that the current state of climate science requires the University to take further action. Climate change attributable to human activities, primarily the use of fossil fuels, is already causing extensive harm across the globe. These harms to life, health, property, food production, and access to freshwater are already triggering humanitarian crises and mass migration owing to the collapse of farming regions in Iraq, India, South-East Asia, and elsewhere. The effects of a dangerously destabilized climate are being observed and experienced much sooner than the best climate models of just a few years ago predicted. Climatologists have had to recalibrate their (cautious) estimates of how sensitive Earth's climate is to greenhouse gas (GHG) emissions, to reflect accumulating evidence that it is more sensitive than previously thought. As climate

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<sup>4</sup> For example, Climate Action 100+ is currently engaging the largest European steel producer, ArcelorMittal, in an effort to develop carbon abatement strategies and low-carbon steel production technologies. Stanley Reed, "How to Clean Up Steel? Ingenuity and Lots of Cash," *The New York Times*, Business, March 29, 2021, B1.

<sup>5</sup> Climate Action 100+ was formed in 2017 by Asia Investor Group on Climate Change (AIGCC); Coalition for Environmentally Responsible Economies (CERES); Investor Group on Climate Change (IGCC); Institutional Investors Group on Climate Change (IIGCC); and Principles for Responsible Investment (PRI). In order for the University to become a signatory of the Climate Action 100+, it joined the CERES Investor Network (See <https://www.ceres.org/>). The Climate Action 100+ Sign-on Statement is here: [climateaction100.org](https://climateaction100.org).

models have been refined and strengthened, what were once understood to be distant worst-case scenarios are increasingly understood to be more proximate mid-point projections. GHG emissions have continued to rise, resulting in atmospheric concentrations of GHGs that are far outside the range in which human civilization has existed.<sup>6</sup> The full effects of these atmospheric concentrations will take many years to be felt, but their impact is accelerating.

Against this backdrop, some of our peer institutions, including Stanford, Cornell, Oxford University and the University of Cambridge have adopted far-reaching commitments that include the step with regard to their investments that we are recommending that the University of Rochester take, as well as sweeping commitments to achieve carbon neutrality.

Climate destabilization is a fundamental threat to human well-being, and universities and other institutions have ethical responsibilities to limit the harms caused by their own activities and associated with their investments. As institutions committed to education and advancing knowledge in the public interest, universities also have obligations to educate, inquire, and lead by example in seeking solutions to the challenges that society and the world must overcome. In the sphere of investment policy, the underlying ethical principle is that investments should be consistent with these fundamental institutional commitments and with the fundamental moral obligation of all institutions and individuals to take care to avoid causing harm. In applying this principle, it should be understood that investing in a business makes the investor a party to any harms imposed by the business as well as any benefits that might in some cases justify the risk of harm.

The University of Rochester has taken some meaningful steps toward reducing its harmful environmental impact, but it continues to lag behind peer institutions. In the meantime, the harms of climate destabilization arising from greenhouse gas emissions (GHGs) are growing rapidly.<sup>7</sup> The scientific and inter-governmental consensus on climate destabilization are very strong, and human rights-based climate litigation has emerged as a globally significant factor in driving institutional reforms to limit and mitigate the harms inflicted by human-caused climate disruption.<sup>8</sup>

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<sup>6</sup> Atmospheric GHG concentrations are presently the highest they have been in 650,000 years. See NASA's climate site at <https://climate.nasa.gov/>.

<sup>7</sup> For cost estimates and projections of growing losses in the U.S. attributable to climate destabilization, see NOAA, Adam A. Smith, "2020 U.S. billion-dollar weather and climate disasters in historical context," January 8, 2021, <https://www.climate.gov/news-features/blogs/beyond-data/2020-us-billion-dollar-weather-and-climate-disasters-historical>; Dana Nuccitelli, "New report finds costs of climate change impacts often underestimated," Nov.18, 2019, *Yale Climate Connections*, <https://yaleclimateconnections.org/2019/11/new-report-finds-costs-of-climate-change-impacts-often-underestimated/>; Renee Cho, "How Climate Change Impacts the Economy," June 20, 2019, Earth Institute, Columbia University, <https://blogs.ei.columbia.edu/2019/06/20/climate-change-economy-impacts/>. On the methodologies underlying such estimates and projections, see S. Hsiang, R. Kopp, A. Jina, J. Rising, M. Delgado, and S. Mohan, "Estimating economic damage from climate change in the United States," *Science* 30 June 2017, <https://science.sciencemag.org/content/356/6345/1362>.

<sup>8</sup> See UNEP (United Nations Environment Programme) & Columbia Law School, Sabin Center for Climate Change Law, *Global Climate Litigation Report 2020 Status Review*, on the growth of climate litigation and its role in "compelling governments and corporate actors to pursue more ambitious climate change mitigation and adaptation goals," <https://www.unep.org/resources/report/global-climate-litigation-report-2020-status-review>. This litigation is

## The science and ethics of harms inflicted by climate forcing

The long geologic view of the climate problem we face is that the advent of oxygenating photosynthetic life-forms 3.5 billion years ago made oxygen-metabolizing life-forms, such as our own, possible. Photosynthetic life-forms did this by altering the chemistry of Earth's atmosphere. They created an oxygen-rich atmosphere, and they shaped the temperate climate on which we depend by removing massive quantities of carbon from the atmosphere and storing them as fossil hydrocarbons. Over just a couple hundred years of unearthing and burning these fossil hydrocarbons as fuel, human beings have returned to the atmosphere a quantity of carbon that it took photosynthetic life-forms a billion or so years to remove from the atmosphere. The basic physics of GHGs was experimentally established in the 19th century, but only in recent decades has the accumulating science been recognized as having immediate relevance for institutional and personal decision-making.

Human activities have been injecting more GHGs into the atmosphere than Earth systems can absorb, with the result that atmospheric concentrations of GHGs have grown from a preindustrial level of about 275 ppm to 416 ppm today.<sup>9</sup> There is a strong consensus within climatology, codified in periodic IPCC reports that synthesize thousands of research studies, that human activities, most importantly the use of fossil fuels, are thereby forcing Earth's climate system out of equilibrium. There is a similarly strong consensus that this climate forcing and destabilization are causing harm to human well-being and will do so to a much greater extent in the future unless emissions are sharply reduced and atmospheric concentrations are also reduced.<sup>10</sup>

The pace of observed manifestations and costs of climate destabilization has been accelerating. Nineteen of the warmest years ever measured have occurred since the year 2000, with implications for availability of freshwater, food production, and human health.<sup>11</sup> Melting of the Antarctic and Greenland ice sheets is contributing to an accelerating rise in sea level that is expected to inundate land where 340 million people live by the year 2050.<sup>12</sup> The populations of

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based in human rights claims and *recognition of a right to a healthy environment in the constitutions of over 100 countries*.

<sup>9</sup> See NASA's comprehensive data and evidence on atmospheric GHG concentrations, temperatures, and other aspects of climate change at <https://climate.nasa.gov/>.

<sup>10</sup> See IPCC, Global Warming of 1.5 ° C, 2018, <http://www.ipcc.ch/report/sr15/>, and for a summary of it, C. Davenport, "Major Climate Report Describes a Strong Risk of Crisis as Early as 2040," New York Times October 7, 2018, <https://www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html>. Based on an analysis of 6,000 studies, this was the first systematic effort to project the impact of 2.7 degrees Fahrenheit (1.5° C) of global surface mean warming. It estimated the costs of such warming at \$54 trillion and predicted severe heat waves, drought, food shortages, fires, coastal inundation, and die-offs of coral reefs (and the aquatic ecosystems they support) by 2040. To put this in perspective, global surface mean temperatures have risen from about the +0.2° C to +0.4° C range in the 1970s, to +0.4° C to +0.6° C in the 1980s, to +0.4° C to +0.8° C in the 1990s, to +0.8° C to +1.2° C since 2000.

<sup>11</sup> See <https://climate.nasa.gov/>

<sup>12</sup> The accelerating pace of sea level rise is discussed at <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level>. For updated analysis of vulnerable coastal populations, see S.A. Kulp and B.H. Strauss, "New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding," *Nature Communications* 29 October 2019, <https://www.nature.com/articles/s41467-019-12808-z>.

mammals, reptiles, amphibians, fish, and birds have declined by an average of 68 percent in the last fifty years, and climate destabilization is likely to accelerate the pace of species extinction.<sup>13</sup>

The harms to human beings concern life, health, subsistence, property, and security, and these harms occur through a variety of causal pathways. Declining availability of freshwater is occurring as rain patterns change, glaciers that feed rivers retreat, and rising temperatures necessitate increasing water use. Food production is threatened as rising temperatures and declining water availability are making vast farming regions no longer productive, and as ocean warming and acidification (caused by the absorption of GHG emissions) contribute to collapsing ocean ecosystems. Threats to health include declining access to nutrition and to freshwater for drinking, cleaning, and personal hygiene, as well as the direct effects of rising temperatures. Threats to security include increasingly violent storms, coastal inundation, and a rising tide of mass migrations as land becomes uninhabitable. Threats to life include all of the above, as well as climate-related amplification of disease vectors.

From an ethical standpoint, what is of greatest concern is asymmetric causation of harm, and the harms caused by climate destabilization are often asymmetric: they fit the pattern of one person or group inflicting undeserved harm on another person or group. The harms are suffered disproportionately by people (typically poorer, younger, or both) who contribute less to the climate forcing that causes the harms. Those with fewer choices concerning where and how they live are generally at much greater risk of suffering harms of climate destabilization than those with more choices, and those born today are at much greater risk than those born in the past. Those with more choices typically live in ways that produce far greater GHG emissions. Those born today have contributed nothing to climate destabilization, but they will endure risks and harms of climate destabilization caused by the collective activities of others who came before them. Those born today will endure these risks and harms for their entire lives, and the same will be true of any children and grandchildren they have. Unless we take swift and effective action to sharply reduce GHG emissions, the future they face will be one of declining opportunities.<sup>14</sup>

Over time, the harms inflicted by climate disruption will be even more asymmetrical and ethically troubling than they are today, because one of its effects will be to exacerbate inequality both within the U.S. and globally. Econometric studies indicate that climate change has already contributed substantially to increased inequality between regions in the United States and between developed and developing countries and the most credible projections suggest that increasing global average temperatures will further exacerbate inequality.<sup>15</sup> The larger emerging

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<sup>13</sup> World Wildlife Fund, Living Planet Report 2020: Bending the Curve of Biodiversity Loss (Gland, SZ: WWF, 2020), <https://www.worldwildlife.org/publications/living-planet-report-2020>.

<sup>14</sup> For an ethical analysis of climate destabilization focused on preservation of opportunity, see R. Curren & E. Metzger, *Living Well Now and in the Future: Why Sustainability Matters* (Cambridge, MA: MIT Press, 2017). For a survey of the views of economists who study climate impacts, see P. Howard and D. Sylvan, *Gauging Economic Consensus on Climate Change* (New York: Institute for Policy Integrity, NYU School of Law, 2021). For an accessible overview of the issues involved, see R. Nunn et al., *Ten Facts about the Economics of Climate Change and Climate Policy* (Washington, DC: The Hamilton Project at the Brookings Institution and the Stanford Institute for Economic Policy Research, 2019).

<sup>15</sup> Hsiang, S., Kopp, R., Jina, A., Rising, J., Delgado, M., Mohan, S., Rasmussen, D.J., Muir-Wood, R., Wilson, P., Oppenheimer, M., Larsen, K., & Houser, T., "Estimating economic damage from climate change in the United

consensus of an increasingly sophisticated econometric literature is that the costs of climate destabilization will increase in a non-linear fashion as the pace of average global temperature rise increases.<sup>16</sup>

There are several ways to conceptualize what is ethically wrong with institutional failures to cooperate in reducing GHG emissions. The simplest is to recognize that the general ethical (and common law) duty to *take care* not to harm others applies to GHG emissions that collectively expose others to risk of harm. This duty of care would fall on everyone who engages in activities that involve GHG emissions, but it applies with special force to institutions that play larger roles in shaping patterns of human activity than individual persons typically do. The GHG intensity of individuals' activities are typically shaped by the characteristics of the built systems and institutional policies and practices that shape their daily and life choices. Often they have very limited alternative means to meeting their basic needs, while the choices of institutions and organizations are often freer and more consequential, especially if they act in unison, as a growing number of our leading peer institutions are now doing.

Institutional contributions to a future of declining opportunity violate the general ethical duty to *do no harm* or to *take care to avoid doing harm*. They also constitute violations of the ideal of *equal opportunity*.

Universities have further obligations associated with their distinctive missions and public commitments, which are typically strongly in tension with any conduct that would undermine equal opportunity. The University of Rochester has committed itself to *equality of persons*, *human rights*, *democratic governance*, and *environmental sustainability*, among other values. Institutional conduct that contributes to climate destabilization that progressively undermines opportunity across the globe is hard to reconcile with equality of persons, human rights, and environmental sustainability. The addition of democratic values to these values adds further weight to an obligation to support collective global efforts to address climate change.

It is reasonable to ask how far an institution is ethically required to go in reducing its contributions to the risk of harm and actual harm arising from the GHG emissions it sponsors directly through its operations and indirectly through its investments. When is the imposition of risk excessive or unreasonable?

The *first and most important answer* to this question is that it is unethical to engage in these activities *at all* without doing one's part to work toward and honor a fair, transparent, and democratic collective determination of how much risk is too much.<sup>17</sup>

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States." *Science*, 356(6345) (2017): 1362-1369; Kahn, Matthew E., Kamiar Mohaddes, Ryan N.C. Ng, M. Hashem Pesaran, Mehdi Raissi, and Jui-Chung Yang, "Long- Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis." Working Paper 26167, National Bureau of Economic Research (Cambridge, MA: 2019).

<sup>16</sup> Burke, M., Hsiang, S. M., & Miguel, E., "Global non-linear effect of temperature on economic production," *Nature* 527(7577) (2015): 235-239; Khan, et al., "Long- Term Macroeconomic Effects of Climate Change."

<sup>17</sup> The underlying ethical principle here is that respect for others requires that actors whose actions affect each other have an obligation to cooperate in negotiating fair terms of cooperation to define mutually acceptable limits of risk and harm. For applications in the sphere of environmental sustainability, see Curren & Metzger, *Living Well Now and in the Future*, pp. 61-63.

This would be analogous to setting a speed limit for motor vehicles that defines how much risk of collisions people can ethically impose on one another, but it must be global because the reach of GHG emissions is global. Because the climate forcing effects of GHG emissions are global and cumulative, what must be defined is a “safe” global GHG emissions “budget” and how to distribute it globally and over the coming decades. Would the fairest distribution allocate equal per capita emissions allowances to every person in the world and predetermine the schedule on which they would decline to zero (i.e., to net GHG or carbon neutrality)? Would it be more fair to assign smaller per capita allocations to countries that have already used up their fair share of Earth’s capacity to safely absorb GHG emissions? Or to assign smaller per capita allocations to countries that have the resources to achieve carbon neutrality without pushing their citizens into poverty? Would it be more fair to assign larger emissions allocations to those who are living in poverty, in order to facilitate economic development to lift them out of poverty?<sup>18</sup> There are unresolved complexities below the surface of these questions, but we do not need to resolve them. What is needed in practice is a global agreement that is fair enough to be widely acceptable and that gets the job done.

*In the absence of such a negotiated agreement* regarding how rapidly specific governments and institutions must move toward carbon neutrality and how the costs would be distributed, a good faith effort to avoid harming others through GHG emissions would be based on our best understanding of the nature, extent, and trajectory of the harm and what would constitute a fair or sufficient contribution to limiting risk to what is “safe.” A baseline for any ethically plausible view of what is “safe” is that it is not ethically acceptable for an institution to pursue its goals in ways that substantially contribute to the death, ill health, or inadequate access to nutrition or water for basic personal uses, or security of anyone. *Institutions should not contribute or be parties to climate destabilization that violates basic human rights to life, health, or subsistence*, in other words.<sup>19</sup> This aligns not only with a basic ethical duty to do no harm, but with a widely acknowledged baseline for global justice, the human rights basis of climate litigation, and the University’s commitment to human rights as a guiding value.<sup>20</sup> In order to not violate this baseline of respect for human rights, institutions would need to commit themselves to achieving GHG neutrality on a schedule consistent with current IPCC consensus projections of a safe timeline. This would entail achieving GHG neutrality in all university operations within 25 years. Investments in the fossil fuel sector (as defined above) could presumably be wound down much more rapidly.

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<sup>18</sup> For analyses of the important lines of debate in climate ethics, see J. Garvey, *The Ethics of Climate Change* (London: Continuum, 2008); S. Gardiner, S. Caney, D. Jamieson & H. Shue (eds.), *Climate Ethics: Essential Readings* (Oxford: Oxford University Press, 2010); S. Gardiner, *A Perfect Moral Storm* (Oxford: Oxford University Press, 2011).

<sup>19</sup> Caney, “Climate Change, Human Rights, and Moral Thresholds,” in Gardiner, et. al. (eds.), *Climate Ethics*, pp. 163-177.

<sup>20</sup> For background on the theory and practice of human rights, see R. Cruft, S. M. Liao & M. Renza (eds.), *Philosophical Foundations of Human Rights* (Oxford: Oxford University Press, 2015).

## Actions by Peer Institutions

There has been substantial activity by peer institutions since the Investment Committee last visited this issue in 2019, and while we have not attempted a comprehensive analysis, we note a few of the highlights here.

The largest endowment to divest from fossil fuels is the **University of California** system, with \$126 billion in endowment, pension and working capital pools. It announced that its divestment had been completed in May 2020. The policy involved selling \$1 billion in fossil fuel assets and investing an equivalent amount in alternative energy.<sup>21</sup>

Citing a “pressing environmental and moral need for action,” the **University of Cambridge** announced plans in October 2020 to divest from all direct and indirect investments in fossil fuels by 2030 as part of a plan to reach carbon neutrality for the institution by 2038. The plan further stipulated that the University would:

- “Withdraw investments with conventional energy-focused public equity managers by December 2020
- “Build up significant investments in renewable energy by 2025
- “Divest from all meaningful exposure in fossil fuels by 2030.
- “Aim to achieve net zero greenhouse gas emissions across its entire investment portfolio by 2038, in line with the broader targets of the University.”<sup>22</sup>

On April 20, 2020, **Oxford University** decided to divest from all direct holdings in fossil fuel companies and to abstain from future investment in funds that “primarily” invest in fossil fuel firms.<sup>23</sup>

**Stanford University** has steadily increased its ambitions since 2014, when it first adopted a pledge to refrain from investments in thermal coal. In June 2020 the Board of Trustees concluded a review of environmentally sustainable investment, reported that it had divested 90% of its holdings in fossil fuels under its Ethical Investment Framework, and announced a commitment to achieving carbon neutrality for the University by 2050.<sup>24</sup>

The Board of Directors of **Georgetown University** voted in February 2020 to comprehensively divest from fossil fuels. The plan involved divesting from all direct holdings within five years and to divest from all private investments in fossil fuel companies within ten years. It further specified “freezing new endowment investments in companies or funds whose primary business is the exploration or extraction of fossil fuels.”<sup>25</sup>

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<sup>21</sup> Leah Asmelash, “The University of California has fully divested from fossil fuels. It’s the largest school in the US to do it,” CNN, May 20, 2020.

<sup>22</sup> “Cambridge to divest from fossil fuels with ‘net zero’ plan,” *University of Cambridge News*, October 1, 2020.

<sup>23</sup> The vote was taken by the Oxford University Congregation, the governing body of the University. “Oxford University Passes Resolution Banning Investment in Fossil Fuels,” *The Oxford Student*, April 20, 2020.

<sup>24</sup> “Board of Trustees commits to accelerating transition to net-zero greenhouse gas emissions, reports major reduction in fossil fuel investments,” Stanford News, June 12, 2020. [news.stanford.edu](https://news.stanford.edu).

<sup>25</sup> “Fossil Fuels Divestment Continues Georgetown’s Commitment to Sustainability,” Georgetown University News, February 6, 2020. [georgetown.edu/news](https://georgetown.edu/news)

In addition to pledging to make no direct investments in production of thermal coal, **Brandeis University** has pledged to suspend new investments in limited partnerships engaged in fossil fuel exploration or production and to increase investment in renewable energy sources.<sup>26</sup>

Some peer institutions that had previously rejected the call for divestment have recently reversed themselves. **Cornell University**'s Board of Trustees voted against fossil fuel divestment in 2016, but revised its decision after its faculty governance bodies voted for divestment. Cornell announced in May 2020 that it would adopt a moratorium on investments in partnerships that invest in fossil fuels. The expectation is that Cornell's investments in the fossil fuels industry, other than those in index funds, would decline to zero within five to seven years as the remaining pooled investments matured.<sup>27</sup>

**Yale University** has so far resisted calls by student, faculty and alumni groups for comprehensive divestment from fossil fuels, but has divested most of its holdings of thermal coal and tar sands investments.<sup>28</sup> Under a policy adopted in 2014, it has instructed its managers to refrain from investing in companies that "refuse to acknowledge the social and financial costs of climate change" and that do not make efforts to reduce greenhouse gas emissions. Following a resolution by the Faculty of Arts and Sciences Senate last year, the president formed a new commission to develop recommendations.<sup>29</sup> In April 2021, the Board of Trustees approved the panel's proposed set of guiding principles to identify which fossil fuel companies warrant divestment.<sup>30</sup>

Several peer institutions made commitments to avoid investments in thermal coal before the University of Rochester did so. **Columbia University** decided not to invest in any company deriving more than 35% of its revenue from thermal coal production. **Johns Hopkins** has divested from direct investments in thermal coal and pledged not to make new ones.

Several universities, while not undertaking divestment or pledges to refrain from investing in particular sectors, have adopted guidelines on environmental, social and governance criteria to use in making such decisions. This includes the **University of Pennsylvania** and **Yale University**, which have written policies, and **Harvard University**, which has adopted the UN Principles for Responsible Investment. In November 2019 the Harvard-Yale football game was disrupted by protestors demanding fossil fuel divestment, and in February 2020, the Harvard

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<sup>26</sup> "Fossil Fuel Investment Policies", Office of the President, Brandeis University.

<https://www.brandeis.edu/president/letters/2018-11-28-fossil-fuel-investment-policies.html>

<sup>27</sup> Matt Steecker, "Cornell University divesting from fossil fuels, to focus on alternative energy, renewables," *Ithaca Journal*, May 27, 2020. *ithacajournal.com*. The vote came after extensive student protests and votes by all five faculty governance bodies. Kathryn Stamm, "Cornell to Effectively Divest from Fossil Fuels, Trustees Vote," *The Cornell Daily Sun*, May 22, 2020. *cornellsun.com*

<sup>28</sup> "Yale Activists Want Divestment. David Swensen Isn't Budging," *Institutional Investor*, February 21, 2020.

<sup>29</sup> "Yale committee to propose new fossil fuel investment principles," *YaleNews*, October 22, 2020.

<sup>30</sup> "New principles regarding fossil fuels to guide Yale's endowment," *Yale News*, April 16, 2021. <https://news.yale.edu/2021/04/16/new-principles-regarding-fossil-fuels-guide-yales-endowment>.



faculty voted for divestment.<sup>31</sup> Harvard University rejected divestment in May 2020, but adopted a goal of achieving net carbon neutrality for its endowment by 2050.

## **Conclusions**

In the past year, leading academic institutions have moved rapidly to limit and reduce their investments in fossil fuels. The question is whether we will act quickly enough to be seen as one of the leaders or slowly enough to be one of the laggards on the issue. Fossil fuels investments represent a small and declining portion of the University of Rochester endowment. They currently comprise approximately 4% of the LTIP, almost all of which is in partnerships, and the most recent of these partnerships were launched in 2015 with 10 to 15 year horizons. Adoption of the proposal to make no new direct or indirect investments that are primarily in fossil fuels would have the effect of winding down the University's investments in this sector over the coming decade. While it is possible that new investments in this sector may become more financially attractive at some time in the future than they are now, the ethical case for eliminating investments in an industry that is endangering life on the planet is clear. We believe that the adoption of the proposal would enjoy the broad support of the student body, alumni, faculty and staff of the University.

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<sup>31</sup> James S. Bikales and Kevin R. Chen, "Harvard Faculty Vote in Favor of Divestment 179-20," *Harvard Crimson*, February 5, 2020. [thecrimson.com](http://thecrimson.com)