HR ’71 50TH REUNION SYMPOSIA SERIES

“Speed Dating for Climate Change”

Jon Gorham
Program Captain

Andrea Tebbets and John Shutkin
Symposia Series Co-Chairs

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1. Symposium Recording:

On October 24, 2021 the following members of the HR class of ’71 (and a couple of their relatives) made 14 brief (less than four minutes) presentations describing what they are doing to address Climate Change. The following people presented, in order of appearance:

- Geza Tatrallyay
- Jay Apt
- Phil Aaberg
- Paul Harris
- Jared Rossman
- Jamie & Marcy Plunkett
- Rebecca Rockefeller Lambert
- Joel Russell
- Jeff Lowenfels
- Barry Griffin
- Jon Gorham
- Nancy Knowlton
- Sue Donaldson
- Nancy Beall & Doug Hendren

To access this 120 minute recording, click on:
https://private.hr71.org/Zooms/video/speed-dating-for-climate-change.mp4

Here is a link to the chat during the symposium:
https://private.hr71.org/Zooms/chat/speed-dating-for-climate-change-chat.pdf

2. Classmates’ Submissions Describing What They are Doing to Address Climate Change:

Twenty-nine classmates provided us with the following 1-page descriptions about his or her efforts to address climate change. Each person gave a brief overview of what he or she is doing, as well as described opportunities for how you might engage and support their work if you wish. We encourage you to get in touch with those classmates whose work most interests you.

PHILIP AABERG

phil@sweetgrassmusic.com,

Storytelling, Cultural Anthropology, Music, Land Restoration

If you don't listen to any of the archived radio programs at www.ofthewest.net, this is an exercise in futility. I recommend my interviews with Janine Benyus, biomimicry researcher, and David James Duncan, novelist and environmental activist.
In 1967 I came to Harvard from Chester, Montana.

I cherish my time at Harvard, but the most meaningful course I took was Kevin Starr's Literature of the West. When Montana Humanities asked me to do a public radio show, I called it Of the West: Creativity and Sense of Place. I have over 40 interviews from that time on www.ofthewest.net. Recently several of our classmates and others have asked me to restart the program. My original intent was to counter the prevailing mythology in the modern west which has nothing to do with an endangered environment and is rapidly making it worse.

Blogs are vital for speaking to the committed, but one has to search out and sign in to get the message. Of the West was carried by Yellowstone Public Radio and covered a geographical area 5 times bigger than New England. The far right has blanketed the airwaves so thoroughly that one cannot travel anywhere without their message of division and lies intruding on one's consciousness. Of the West was a counter to that, and most importantly to me, featured regular people in a format of relevant and often familiar music whose tone did not prompt the friends and neighbors to tune it out. When you hear the voice of somebody you see at church or school board meetings, it doesn't matter who you voted for, you'll listen. It also helps that the host, me, is a familiar voice to most people in the area, since I've played in their towns, I've raised money for their schools and hospitals, and I played with their favorite rock and roll groups, as well as in contemporary movies like Deadpool and Guardians of the Galaxy.

I'm happy to speak with anyone about potentially funding this show.
DON'T LET IRONY STOP YOUR HEARTS. If its within your ability, please support any of these good works that need it. For our children. For our grandchildren.
www.ofthewest.net

NANCY ANDERSON

nca@maine.rr.com

Direct Political Action and Electoral Engagement

The most important action I have taken against climate chaos is to **support stopping oil and gas production**. I have made a stretch gift, almost 10% of my funds, to The Equation Campaign, a campaign started by my daughter Rebecca Rockefeller Lambert. Rebecca writes: "At a time when we have less than 10 years to cut fossil fuel use in half, the oil and gas industry is accelerating expansion (as of 2019, the industry planned $1.3 trillion of new infrastructure in the next 5 years). To have a fighting chance at a safe future, we must stop this expansion before emissions are locked in. The industry itself names local opposition as the top threat to its expansion, so this is the strategy in which the Equation Campaign invests. The Equation Campaign unleashes the power of local opposition by investing in site specific movements (such as the movements to stop Line 3 (https://www.stopline3.org/) and the Mountain Valley Pipeline), as well as in movement infrastructure and connectivity."

My other actions fall into two categories: 1) cutting personal fossil fuel use, and 2) electoral and political engagement, including showing up on the street.

Opportunities for classmate engagement and support

Following the only-spend-less-than-5%-of-your-corpus rule touted by financial advisors will not leave our children and grandchildren a sustainable and livable world. I urge you to dig deep into your pockets and give to The Equation Campaign, https://equationcampaign.org/about, and other efforts to "keep it in the ground."

JAY APT

apt@cmu.edu

Low-pollution Electricity Generation and Grid Integration

As a four-time crewmember on the Space Shuttle, I have given numerous talks showing photographs of the Earth from orbit, including some showing the effects of human-caused changes. On an ongoing basis, as a professor in both the Tepper School of Business and the Department of Engineering & Public Policy at Carnegie Mellon University, I study the engineering-economics of low-pollution power generation and how it integrates with the US electric grid. Some of our research was summarized in a book on which I was the lead author, *Variable Renewable Energy and the Electricity Grid*. (Routledge, RFF Press, 2014). We also publish in scholarly journals and use the results as the basis of popular publications; a recent example is an opinion piece published in September, The Hill, September 9, 2021, https://thehill.com/opinion/energy-environment/571527-an-urgent-plan-to-decarbonize-electricity-by-2035.

From time to time, I am asked to testify before Congress; a recent example is Apt, J. Testimony on How the Domestic Nuclear Industry Boosts Local Economies, Curbs Emissions, and Strengthens National Security. U.S. House of Representatives Committee on Science, Space, and Technology, Subcommittee on Energy, May 3, 2019. There is also continuing interest in our 1996 *Orbit: NASA Astronauts Photograph the Earth*, published by the National Geographic Society in 1996.

Opportunities for classmate engagement and support

In academia, we have the largest impact through our graduated Ph.D. students; mine go into industry, government, NGOs, and a few into universities. Hire them and become familiar with their research! Our work is available at www.cmu.edu/electricity. Individual project websites that may be of interest are our renewables integration project http://www.renewelec.org/, our carbon capture and storage regulatory project http://www.ccsreg.org/, and our climate and energy decision making center https://cedmcenter.org/.

DAVID ARNOLD

northwester@comcast.net

Art Advocacy

In the early 2000s, determined to pull at heart strings more than intellect, I created an exhibit (www.doublexposure.net) that for five years toured museums nonstop across the country. The photographs compare glacier and coral reef scenes, then and now. I shot the "now" pictures precisely where the earlier pictures were taken, either from the air (glaciers) or underwater (corals).

Recently I have synchronized the picture transitions to classical music, presenting with the Akron Symphony and the Boston Landmarks Orchestra on large L.E.D. screens. The pairings end hopeful with seemingly impossible reversals of environmental degradation (Boston Harbor for starters).

My personal lifestyle is PC green. But I do not kid myself. I don't have an inkling if I live a carbon neutral lifestyle. Add the airplane flights to visit the kids and I strongly doubt it. Am I making a difference? On the best days I give myself a C. And Red Book tradition compels me to be honest with no idea where the candor will land me: I feel burn out. Considering how long some folks have been in the AGW game, I have no right to whine.

Of this I am sure: To get to clean fuel we need nuclear power. Small plants spread out. Jim Hansen spent decades warning us about climate change and he has the arrows in his backside to prove it. He accepts the need for nuclear. Small reactors, decentralized. If Hansen can shill for nuclear, so can I. And carbon pricing is the fairest, most effective way to get us out of these huge, gas guzzling cars.

Opportunities for classmate engagement and support

Play this "game," forwarded to me by classmates Paul Harris and Art Levine:
https://en-roads.climateinteractive.org/scenario.html?v=21.11.0
Some effective AGW Art Advocacy sites:
https://mccnetwork.org/art-initiatives
A heart-wrenching look at plastic pollution. Buckle up:
https://vimeo.com/233888719
Everything this guy does is remarkable. Double-click on the images:
http://www.chrisjordan.com/gallery/rtn/#car-keys

Deborah Hyde Baldwin (Deb)

dhbaldwin@comcast.net

Influencing the Economy/ Businesses/ Investors

Group, Non-profit, Technology Business Area, Community, etc.:
Ceres, whose CEO, Mindy Lubber, was picked for the United Nations' top environmental award, the "Champions of the Earth."
See: https://www.unep.org/championsofearth/laureates/2020/mindy-lubber
Ceres is a Boston-based organization that is highly effective in its work to mobilize sustainability leadership among companies, investors, and capital market influencers. It makes the business case for climate action and sustainability.

How Classmates May Participate in Your Climate Change Mitigation Effort:
Support the Boston-based non-profit: Ceres: https://ceres.org/homepage

GIVE MONEY!! Your Qualified Charitable Distribution can go directly from your SEP IRA account. To learn about your Required Minimum Distributions go to: https://www.irs.gov/retirement-plans/retirement-plans-faqs-regarding-required-minimum-distributions - 1. Support one or more of the non-profits that HR '71 classmates have founded or are working passionately with to help address climate change.

To those of us who have grandchildren: we might save our money for our grandchildren, or **we can try to save the planet for them!**

JOHN W. BALLANTINE, JR.

johnbal@brandeis.edu

Senior Lecturer, Brandeis University; and Research Visitor,
King Abdullah Petroleum Studies and Research Center

The End of the World as We Know it? Maybe, Maybe Not. My specific activities include:

- A course on "Investing in Energy: Fossil Fuels to Cleaner Energy." What will our world look like in 2050? Who will have political and economic power? How will we provide energy/electricity to the world? And how will our climate have changed the way we live? These are the questions that we will explore by tracing the history of energy/climate over the past 100 years. And then, we will figure out what projects to invest in across the world.

- For the International Association of Energy Economists (IAEE), conference presentations over the past three years on the wide divergence of long-term energy scenarios and the complexity of our political economies, using the title: "The Energy Supply Curve is Not Smooth: Modelling Oil Investment and Production Decisions with Agent Heterogeneity."

More broadly, I work with energy economists, engineers, and students from all over the world on the structure of our energy economies, the variety of climate challenges in different regions, and the divergent objectives of various players. This includes research into the activities/investments of large players within OPEC, Russia, and the rest of the world (IOC – international oil companies). Most of the energy players recognize the need to transition to a cleaner more sustainable world – however, the path forward is quite different for EU countries, the US, Gulf Oil producers, China, India, Africa and Latin America.

There is no one solution or perfect policy that will meet the heterogeneous needs of various energy players or consumers. My work and research on agent modeling shows the non-linear and disruptive changes ahead. Some will do better than others. Economics, technology, long term investments, changing behavior, and politics will take our grandchildren to a changed world in 2050.

BENNETT BEACH (BEN)

benhbeach@gmail.com

Advocating Congressional Passage of a Carbon Fee

I am a part-time writer and editor, working as a consultant rather than on staff, for the Partnership for Responsible Growth (PRG), a 501(c)(3) organization in Chevy Chase, MD. PRG realizes that a carbon tax cannot solve the climate problem all by itself, but we believe that taxing carbon dioxide emissions is the quickest and most efficient way to reduce them. And speed is increasingly of the essence.

More than 3,500 economists, including at least 45 Nobel laureates, have signed a statement supporting a fee on emissions with all the proceeds to be returned to Americans as quarterly "dividends." This revenue-neutral proposal was devised by one of our allies, the Climate Leadership Council, founded by GOP lions such as George Shultz and James Baker.

We are well aware that lawmakers run for cover when any tax is proposed. So we emphasize the fact that the revenue can be returned to citizens (which makes it a "fee") or used to develop renewable energy, help coal communities make the transition to a clean-energy economy, reduce the national debt, or for other purposes. Our nonprofit is very flexible on that question; our focus is on putting an honest price on the burning of fossil fuels so that we will drive down use of coal, oil, and so-called "natural" gas. I think cigarettes provide a useful precedent: when taxes rose sharply, consumption dropped markedly.

Opportunities for classmate engagement and support

- I am grateful to those classmates who have contributed to our efforts at PRG. You, too, can make a tax-deductible donation at https://www.partnershipforresponsiblegrowth.org/donate-1.
- I also would encourage you to contact your senators and representative to urge them to support a carbon tax (H.R. 4534, S. 2085).

NANCY BEALL AND DOUG HENDREN

nanswim@gmail.com and dhhendren@gmail.com

Climate Music and Clean Energy Advocacy

In 2015, Doug '72 started writing/recording **"climate music"** as a way to get around psychological barriers to climate information, and he is now working on a sixth CD. It's painless education, and therapeutic too. The music is free on Spotify, iTunes, etc., and we do concerts for climate events. The website, MusicalScalpel.com, contains music videos, lyrics, and a brief "what's the song about?" after each piece. We donate CDs to teachers, climate groups, and anyone who wants to spread the word.

Our additional activities and affiliations include:

- Financial support to various state and national climate and clean energy advocacy groups (favorites: 350.org, CCAN, Bold Nebraska, Food& Water Watch), and also support Mountain Valley Pipeline resistance groups with food, clothing, and bail money;
- Local advocacy groups in Harrisonburg, such as Climate Action Alliance of the Valley, 50by25, Voluntary Gas Tax group, for good fellowship and support for local projects
- Letters to the editor, and occasionally longer editorials in our local newspaper;
- Solar Barn raisings (seven so far!), using crowd-sourced labor to solarize local social non-profits -- a modern version of an old Mennonite tradition that is very tangible, and FUN;
- Citizens' Climate Lobby, with which we've gone to the Capitol a few times to advocate for a price on carbon; and
- As an M.D., Doug has participated in programs of Physicians for Social Responsibility(PSR) and is currently helping edit the 8th edition of PSR's Compendium on the dangers of fracking;
- Founding membership in EPSAC, a city commission formed to develop a local environmental action plan and advise the City Council on climate and energy;
- Advising Give Solar, which makes solar power available to low-income residents, and working with Habitat for Humanity to develop a model for solar homes.

Opportunities for classmate engagement and support

- Check out the Give Solar program for solarizing Habitat homes. It's a great vehicle to demonstrate that clean energy is for everybody, not just rich people!
- Steal my music! Encourage other musicians to apply their talents to the climate cause. We will send out CDs to anyone who is interested. Sing loud!

SUE DONALDSON

susalson@gmail.com

Trying to Change Governmental/corporate Policy via Activism

I am involved with several nonprofits and volunteer networks, including 350 Massachusetts, one of hundreds of local "350" organizations inspired by the international 350.org started by Bill McKibben, HR '82, and devoted to grassroots activism around climate; Extinction Rebellion (https://rebellion.global/), a global environmental movement with the stated aim of using nonviolent civil disobedience to compel government action; and Climate Action Now (https://climateactionnow.com/), a local climate group in my new town. I work to mitigate climate change in lots of ways, from making friends/neighbors educated/aware, to promoting public education via protests and letters to editor, helping pass legislation by lobbying or rallies, hassling/, rolling the fossil fuel industry and its friends, disrupting events, slowing down the building of fossil fuel infrastructure by protests, engaging in civil disobedience, helping organize groups that get other people to do those things, finding new ways to engage people, and teaching others organizing skills. It's a whole second career!

Opportunities for classmate engagement and support

Join an organization! We need policy change, and that means combining our voices in strategic ways. Individual actions are good but are not the answer. We need government action to deny fossil fuel permits, incentives for solar and wind and electric vehicles, upgrades to the grid, and commitments from our communities to purchase 100% renewable electricity. Take your pick.

There is a local 350 group in your state or city. Join it; or consider these:

- Mothers Out Front, https://www.mothersoutfront.org, for Mothers and Others;
- Elders Climate Action, https://www.eldersclimateaction.org, for us older folks;
- Sunrise, https://www.sunrisemovement.org, to get our young people involved.

Any local group will let you know when they need you to call your representative to pass a bill, often one of the most important things we can do. They will let you know about actions to join, local fossil fuel projects to resist, letters to write.

And help ELECT people who understand the climate crisis.

DEB FALLOWS

DebFallows@gmail.com

Direct Political Action – Banning Gas-Powered Leaf Blowers

In the summer of 2015, a dozen of our neighbors gathered on our back porch to talk about how to address the relentless noise from gas-powered leaf blowers in our neighborhood. What began with despair ended with a law **to ban the use and sale of gas-powered leaf blowers in the District of Columbia** starting January 1, 2022. Here is what we did, and what we learned.

First: We took ourselves seriously. We researched and documented everything about gas-powered leaf blowers, including health impacts, effects on nature and the environment, and emissions of hydrocarbons, carbon monoxide, and nitrogen oxides. We also learned that the case for legislation could not be based on air pollution, because the Clean Air Act of the 1970s put that authority in the federal, not state, government. It had to be based on noise.

We researched battery-powered equipment, now a rapidly growing industry (if Ford can make an electric F150…), and met with manufacturers and lawn care industry reps. We created a robust website. We commissioned a study on the science behind the difference in sound travel between 2-stroke gas engines and battery blowers. We produced a video. We made allies and promoted good actors. We maintained a slow-and-steady public education campaign, in both English and Spanish, as well as a press campaign that included a great article by my husband, Jim ‘70, in *The Atlantic*.

We gained support from our local city councilmember, who championed us at every step. We met with advisory commissions in over 40 neighborhoods of all eight wards in DC. We worked with the DC government to develop an enforcement plan, and we presented testimony before the City Council. After unanimous passage by the City Council, the bill was enacted into law by the mayor in December 2018. Now, we are preparing for the transition.

What began as a complaint about noise became an effort focused on environment, public health, and social justice, yet ultimately legislated on noise. We learned that effective results required a complicated approach dependent on the governmental organization of our city, attention to all voices in a very diverse population, patience to connect and collaborate with people personally, respectfully, and professionally, and a committed group in which action rather than money was key. With no model to go on, we improvised, but we are convinced that our process is replicable.

JONATHAN GORHAM (JON)

jon@jongorham.com

Regenerative Agriculture, Food production and Food Waste Reduction

I set up my first community garden in 1978 while directing the Environmental Energy Education Project at the Maine Audubon Society, in Falmouth, ME. I've remained active in organic gardening, restorative agriculture and the examination of land use, food production and Climate Change since then. Over a dozen years I chaired our town's sustainability task force, implementing solar on two schools, several town buildings, over 100 residences, installation of a fuel cell, microgrid, etc. – all earning the "most sustainable" small town designation in Connecticut. In 2008 I co-founded a 57-acre organic farm and CSA (Community Supported Agriculture) program which has become a model for CT. We have over 300 subscribers, donate at least 10% of produce to the food insecure. and run a wide variety of educational programs. See https://massarofarm.org/.

Scientists at Paul Hawken's Project Drawdown have analyzed the top 80 technologies to combat climate change, and concluded that eight of the top 20 actions centered on food, food production, and land use. They estimate that approximately 25% of greenhouse gas emissions worldwide are due to these food-related activities.

Opportunities for classmate engagement and support

- Learn about Sustainable Agriculture by engaging with Paul Hawken's Project Regeneration, https://regeneration.org/
- Support Massaro Community Farm by donating to our endowment fund. To learn more about this fund, please visit: https://www.cfgnh.org/articles/jonathan-gorham-sustainability-fund. To donate: https://www.cfgnh.org/funds/jonathan-gorham-sustainability-fund
- Join the Natural Resource Defense Council's Food Waste Initiative, https://www.nrdc.org/food-waste.
- Become a member of an organic farming organization in your region.
- Subscribe to a local Community Supported Agriculture (CSA) program that suits your lifestyle.

Barry Griffin

Design engineer: barry@slowtools.org

I co-founded Slow Tools in 2011 with legendary organic farmer Eliot Coleman following our mentorship of small farming tool projects designed and built by Harvard undergraduates during my Visiting Lectureship in Design Engineering at Harvard SEAS from 2009-2011 https://www.slowtools.org/projects/harvard-student-projects

Since then, Slow Tools farmers, engineers, and educators have met annually to discuss, invent, and demonstrate small scale farming tools that preserve and expand local food production. https://www.slowtools.org/projects/slow-tools-conference-2019 https://www.stonebarnscenter.org/the-farm/slow-tools/

Some Slow Tools projects with immediate climate change impact:

- ***Gas to Electric Conversion:*** https://www.slowtools.org/projects/snow-mulcher Two 16-year-old Bristol Aggie Seniors worked with me in their school shop to design, build and test an 8hp electric "drop-in" motor that exactly replaces a 6.5hp horizontal shaft gasoline engine.
- ***The FLOWER Circle Farm Garden***: The next generation of the Beam Tractor (circle farm) will be a 4300 sq.ft. (1/10 acre) bio-mechanical precision, low power regenerative vegetable farming system using mycorrhizal, carbon, and nutrient recycling. The prototype will be designed by Slow Tools, built by Bristol Aggie High School https://bristolaggie.org/ , and installed Spring 2022 at the YMCA Sharing the Harvest Farm; a non-profit 5 acre farm that grows and donates over 500,000 lbs. of food to local food pantries. https://ymcasouthcoast.org/locations/dartmouth/sharing-the-harvest-community-farm/

My Design Intent and Approach: We ***MUST*** do all we can, as ***FAST*** as we can, to help small farms survive the unpredictable and non-linear effects of climate change. I work to reduce our dependence on concentrated production and distribution of energy, food, materials, mining, and nuclear products; each with equally long and concentrated supply lines. Instead, I work to develop and use diffuse energy sources, local materials, innate human creativity, local schools, and simple innovation processes to save farms that provide locally grown healthy food. Food, water, shelter, warmth, health, intimacy, happiness, and faith are our fundamental needs. Everything else is secondary.

How You Can Help: ***Our most important and urgent project is the regenerative FLOWER.*** Please donate at https://www.slowtools.org/donate. **NOTE:** the donation page will redirect you to the Slow Tools donation page on the Marion Institute's website. The Marion Institute is the fiscal sponsor of Slow Tools.

"First flower in the wilderness, star in the night,
calm rising thru change and thru storm"

PAUL HARRIS

paulharrisbrookline@gmail.com

Organizing HR71 Classmates to Support Each Other in Climate Actions, and Contributing to a Global Eco-spiritual Awakening

I am the co-founder of the Brookline Green Caucus, a board member of Climate Action Brookline, the founder of three groups on the Clubhouse app -- the Tao Te Ching Book Club, Great Transition, and HR71 -- and a member of five other Clubhouse groups, Climate Crisis Club, Climate Tech, Climate Club, Preservation of the Human Race, and The Meditation Lounge. Through these affiliations, I encourage others to reduce greenhouse gas emissions by simplifying their lives, traveling less, living in smaller homes, drinking mostly water, eating no or less meat, practicing meditation, mindfulness, and yoga, communicating with video calls, and harmonizing with nature. In my personal habits, I strive to do the same.

Opportunities for classmate engagement and support

- Join the HR71 Climate Action Tao Te Ching Zoom calls on Tuesdays at 4:00 p.m.
- Check out my website, http://paulharris.org/
- Reduce your own personal greenhouse gas emissions.
- Read *Imagine It: A Handbook for a Happier Planet* by Laurie David. See: https://www.amazon.com/Imagine-Handbook-Happier-Laurie-David/dp/0593235150
- Visit https://www.nrdc.org/food-waste and https://ecochallenge.org/hello/.

IRA HELFAND

ihelfand@igc.org

Nuclear Non-Proliferation

My main focus is on **changing US nuclear policy to one based on understanding the urgent need to eliminate these weapons before they are used**. Many of us believe that the gravest danger posed by the climate crisis is the increased risk of conflict, and the likelihood that such conflict will lead to nuclear war. As a board member of Physicians for Social Responsibility, I engage in advocacy for a variety of specific proposals to transition as soon as possible from a fossil-fuel-based energy system. I bring similar concerns to my activities with the Back from the Brink Campaign, which is the primary vehicle I am working with at this time, as well as my affiliations with International Physicians for the Prevention of Nuclear War, the International Campaign to Abolish Nuclear Weapons, and Rotary.

Opportunities for classmate engagement and support

The Back from the Brink Campaign needs both volunteers and financial support, Please visit us at http://www.preventnuclearwar.org/.

DAN HRDY

dbh@citrona.com

Commercial Agriculture

I am the owner of Citrona Farms LLC (http://www.citrona.com), a commercial walnut farm. In 2018, we installed a 220kw solar array to offset 14 agricultural electric meters. According to system calculations, we have averted 759 tons of CO2 to date. We have also planted over 70,000 trees, mostly walnuts.

MARTY KAPLAN

martyk@usc.edu

Narratives in popular culture can affect the knowledge, attitudes and behavior of individuals and audiences, can help shape public opinion, and can influence public discourse and policy. As a professor at the USC Annenberg School for Communication & Journalism and founding director of its Norman Lear Center, I **encourage the creative community to include climate change storylines in TV, movies and other entertainment**. Through Hollywood, Health & Society (See: https://www.hollywoodhealthandsociety.org/) a Lear Center program launched in 2001, we provide free technical assistance by climate change experts to writers and producers, and we amplify climate change content in entertainment via social media and other platforms.

Opportunities for classmate engagement and support

If you're a climate change expert, you can volunteer to offer technical assistance to screenwriters via our database of consultants, and to participate in our panels and other outreach efforts. If you know funders whose mission includes social impact entertainment, you can connect us to them. In either case, and for anything else on this front, email me and we'll take it from there.

NANCY KNOWLTON

knowltonn@gmail.com

Marine Science

I am a marine scientist by training and the author of *Citizens of the Sea*. I have done a lot of work on coral reefs, including understanding what leads to coral bleaching (too warm water, basically) and what can be done to reduce it. These days I am "retired" but very active on social media, with a focus on conservation success stories, marine and otherwise.

Group, Non-profit, Technology Business Area, Community, etc. that you are affiliated with:

I am on the Global Board of the Nature Conservancy, whose chief scientist is Katharine Hayhoe, one of the most prominent climate change scientists in the country.
See: https://www.nature.org/en-us/newsroom/katharine-hayhoe-new-chief-scientist/ which also includes a link to her book *Saving Us: A Climate Scientist's Case for Hope and Healing in a Divided World.*

How Your Efforts Contribute to the Mitigation of Climate Change:

I work to counter "doom and gloom" mindsets to make people realize they can make a difference. I helped launch the twitter campaigns #OceanOptimism an #EarthOptimism, and I'm working on a book on success stories in conservation and what we can learn from them. For another example of this approach see:
https://www.theclimateoptimist.com/

How Classmates May Participate in Your Climate Change Mitigation Effort:

Send me examples of what you consider to be successes in climate change efforts. Send to my email (above) or visit me at: https://twitter.com/SeaCitizens
To learn more about the ocean generally, read my book: Citizens of the Sea: Wondrous Creatures From the Census of Marine Life. National Geographic underwater photographers and the Census of Marine Life capture the astonishing diversity and the most intriguing organisms in the ocean in this riveting book, by marine scientist Nancy Knowlton. See: https://www.amazon.com/Citizens-Sea-Wondrous-Creatures-Census/dp/1426206437

REBECCA ROCKEFELLER LAMBERT

Rebecca.R.Lambert@gmail.com

Impelled by the urgency of the moment, I **co-founded the Equation Campaign to invest in the power of frontline communities who are standing up against fossil fuel expansion**. I also serve as a board member of the Rockefeller Family Fund and the David Rockefeller Fund. (I am the daughter of classmates Nancy Anderson and Richard Rockefeller.)

At a time when we have less than ten years to cut fossil fuels in half, the oil and gas industry is accelerating expansion (as of 2019, the industry planned $1.3 trillion of new infrastructure in the next five years). To have a chance for a safe future, we must stop this buildout before emissions are locked in. The industry itself names local opposition as the top threat to its expansion, so this is the strategy in which the Equation Campaign invests. The Equation Campaign unleashes the power of local opposition through investing in site-specific movements (such as the movements to stop Line 3 and the Mountain Valley Pipeline), as well as in movement infrastructure (through legal assistance, communications, and finance campaigns), and movement connectivity (such as the Pipeline Fighters Hub). To see all the campaign's grantees, please visit our website at www.equationcampaign.org.

At the Equation Campaign, we understand that fossil fuels are a threat to justice as well as to the climate. Accordingly, over 50% of our grantees are BIPOC-led. This is not only the right thing to do, it is also strategic; powerful movement leaders emerge from those hit first and worst by the fossil fuel industry. As an example, here's a video of Justin Pearson who recently led the charge to defeat a crude oil pipeline in Memphis: https://www.youtube.com/watch?v=pdzpC2ri1LI.

Opportunities for classmate engagement and support

Please join us in supporting the Equation Campaign by sending a check to us at Rockefeller Philanthropy Advisors, 6 West 48th Street 10th Floor, New York, NY, 10036 or sending a check to https://equationcampaign.org/donate/. If you know of others who might be interested in our work, whether individuals or foundations, please reach out to me, and I can connect you with our staff.

JEFF LOWENFELS

Jeff@gardener.com

Carbon, Nitrogen, Ozone and Soil Mitigation through Gardening

Gardening is the number one hobby in the United States with 77% of Americans participating. (Over 57 million of these Yardeners maintain lawns.) They present easy and impactful opportunities for action to stop climate change. I promote gardening and "yardening" practices that reduce climate-impacting pollution and loss of soil and that increase carbon storage in soil. I am North America's longest running garden columnist (appearing Fridays, https://www.adn.com/author/jeff-lowenfels/, a member of Garden Communicators International, and the author of *Teaming with Microbes* (2006), *Teaming with Nutrients* (2013), *Teaming with Fungi* (2017) and soon, *Teaming With Bacteria* (early summer, 2022.)

Opportunities for classmate engagement and support

Adopt the new gardening rules to deal with climate change:

1. FOR LAWNS

-Mow with battery or corded machines, push reel or solar.
-Reduce to eliminate lawns!
-If you can't use a reel mower, your lawn is too big.
-Switch to Mowing Savings Time, June 1 and skip one mowing a month until the end of the season.

2. FOR LEAF BLOWERS

-Leave leaves. They are not trash and support a healthy soil food web.
-Go back to a rack.
-Use battery or cord blowers if you must clear.

3. FOR WEED EATERS

-Use battery or cord
-STOP BEING SO ANAL.

4. FOR EVERYTHING ELSE

-Go organic
-Use mycorrhizal fungi and the soil food web to sequester carbon.

MARCY AND JAMIE PLUNKETT

marcy.plunkett@gmail.com and jplunket@gmail.com

Jamie has been involved with land conservation in northeastern Maine for the past decade as a board director for the Woodie Wheaton Land Trust, and Marcy volunteered with Citizens' Climate Lobby in Michigan. On a personal level, we contribute to a number of environmental organizations and try to shop for food locally and organically. Inspired by this symposium, as concerned grandparents and clinical psychologists, we have a new interest in **the impact of climate change on the mental and emotional wellbeing of children and young people**. The magnitude of eco-anxiety is staggering, for young people directly impacted by climate catastrophes and beyond . There has been a growing awareness of this in psychological, psychiatric, and general media spheres, but much remains to be done to disseminate this information.

There exists a growing body of literature about how best to talk to children, depending on their developmental level and situation, realistically but without engendering alarm and hopelessness. It's vital that family members and professionals of all sorts working with children and young people have the mindset and tools to help build resilience, hope, and agency. In addition, media that reach a wide audience, such as film and TV, could be enlisted in creating new narratives that counter dystopian or defeatist narratives so prevalent today.

Opportunities for classmate engagement and support

We are in the first stage of developing this project, and we welcome all interested to join us with your ideas and personal and professional networks – you needn't be in mental health fields. We've identified a wealth of existing resources that family and professionals could access. One effort could be to build on this. Another is to identify and support mental health interventions that go beyond the individual professional-client model to support groups and networking, such as the Good Grief Network referred in a Washington Post article titled "Climate disasters will strain our mental health system. It's time to adapt." https://www.washingtonpost.com/climate-solutions/2021/09/04/climate-change-mental-health-hurricane/
We believe the arts such as film, TV, and literature also have a vital role to play in reaching young people, and we'd like to talk about how we might work with others to influence this. Some interesting resources include:

- Climate Anxiety and kids: Shrinking it down. Pinsky MD, E. Podcast, 2020
- The Climate Optimist: at the Harvard T. H. Chan School of Public Health
- Global Optimism: This group works to inspire and catalyze transformations across our economies, and a renewed spirit of human achievement in the face of the climate crisis.

JARED ROSSMAN

jkr49@asis.com

Off-grid Lifestyle, Reforestation and Low-head Hydro

It's all small scale, but I have **three areas of action to mitigate climate change**. In my community, I'm on the board of Garberville Town Square, Inc., a 501(c)(3) non-profit that started and for 20 years has hosted our local Farmers' Market. Every bit of produce/meat/honey/oysters etc. bought here means a little less carbon transport and fewer chemicals. I was on the founding board of Trees Foundation, a non-profit that coordinates 40 partner organizations working in forest, fish, and waterways protection, carbon-sink land conservancy, and fire resilience here in the Redwood Region.

Within my neighborhood, I share resources! Next-door Peter and I use the same old pickup truck for firewood and gravel hauling, major town trips, and dump runs. We and six other neighbors co-own a hydraulic log-splitter, which each of us only uses a week or two a year. We have three households on our single hydro-electric system, spanning 120 acres of homesteads. One household offers the big chain-saw, the other loans out the 12-foot orchard ladder. You get the idea.

Personally, I have lived off-grid for 45 years, most of which time the "authorities" have insisted that "we're not quite ready" for alternative energy. I have no PG&E poles or lines, no back-up gas generator, and I live like a king!! I have a small solar power system for three seasons, and I share a Pelton wheel hydro-turbine (looks like a toy, but it's freakin' magic) that runs off a culvert outlet on a road half a mile away.

Most importantly, instead of buying lots a Stuff, I have used my modest income to buy land, protect standing old-growth forests, and plant trees. Over 200 acres of what are arguably the world's best carbon-sequestering Douglas fir, oak, and Madrone forests will never be logged or resource-extracted. I have "grandchildren trees" from those I've personally planted on five rural parcels over the years, and last year (very proudly!) I harvested the first acorns from white oaks I planted from acorns 35 years ago. That feels like an investment in eternity.

Opportunities for classmate engagement and support

Take a look at: https://treesfoundation.org/, a very worthy recipient for year-end donation; https://homehydro.com/, my neighbor, a one-man micro-hydro-electric wizard; https://greenwired.com/, a great source for everything you need to go solar and get off-grid for real. Also, I invite you to visit and support: http://www.sanctuaryforest.org/; https://tompkinsconservation.org/, and https://biologicaldiversity.org/.

JOEL RUSSELL

joelrusl@gmail.com

Urban Planning and Land Preservation

As a consultant and attorney for non-profit land trusts and municipalities, I work on two main fronts: (1) sustainable development in urbanized areas and (2) preservation of land with environmental resource value. Climate change is a systemic problem that requires systemic solutions, but I am doing what I can at a mostly local level to encourage development patterns that minimize reliance on cars, reduce carbon footprints, encourage walking and biking, result in energy-efficiency improvements to buildings, and encourage solar and wind power. I am also active in actions that conserve farm and forest land and protect it from inappropriate development, using tax and other incentives to encourage carbon sequestration in forests and soils. I am president of the Kestrel Land Trust, www.kestreltrust.org; an attorney for Dutchess Land Conservancy, www.dutchessland.org; and a member of the Land Trust Alliance, www.lta.org, and Congress for the New Urbanism, www.cnu.org.

Economic incentives still mostly point in the wrong direction and policy changes are frustrated by dysfunctional politics, making this a steeply uphill battle. One of my major activities is revising zoning codes that encourage sprawl development and discriminate against minorities and poor people, especially the predominantly single-family zoning found almost everywhere. The Biden Administration's "30x30" initiative aims to protect 30% of the land by 2030, and my work is part of that effort. Good urban development and the preservation of rural areas are inextricably linked. I am involved in both, with social equity an important part of my more recent work.

Opportunities for classmate engagement and support

- Volunteer for and donate to land conservation, land justice organizations;
- Work with land trusts (see LTA above) to buy large tracts of land and protect them from development with conservation easements;
- Move to a city with high-density, mixed use zoning and good public transit;
- Contribute to social justice organizations opposing environmental racism;
- Advocate for national, state, and local policies that discourage reliance on cars and encourage energy conservation, such as a carbon tax and dividend;
- Support affordable housing in your community and organizations working for more equitable access to land, especially for people of color and immigrants.

MONA SARFATY

monasarfaty@yahoo.com

National and International Organizing of Health Professionals

I am Executive Director of the Medical Society Consortium on Climate & Health http://www.docsforclimate.org/ a nonprofit coalition of medical societies, public health organizations, state affiliates, and individual health advocates, Based at George Mason University in northern Virginia, we pursue education and policy change around the country, with many successes at both the state and national levels. Most recently, we have worked to get the best priorities for climate, health, and equity into the budget reconciliation process by bringing health professionals before Congress. We also helped secure a new office of Climate Change and Health Equity in the Department of Health and Human Services, the appointment of a Director for Climate Change Policy at the Department of Transportation, a number of new EPA regulations, and the end of the Keystone XL pipeline projects. State-level gains include new transportation policies and 100% clean energy goals in Virginia, Wisconsin, and elsewhere.

On a personal level, I installed panels at home, purchase electricity from an alternative energy supplier using wind generation, drive an electric car, largely avoid consuming beef and lamb, and avoid single-use plastics. Our university, which is a state school within Virginia, recently banned single-use plastics from campus.

Opportunities for classmate engagement and support

- Join our mailing list a thttp://www.docsforclimate.org/, stay informed, and participate in recommended actions that are shared monthly in the newsletter and by email;
- Participate in education and advocacy by making presentations, writing op-eds and letters to the editor, sharing your concerns with friends and family in conversation and on blogs and social media, and expressing your views to lawmakers in emails and other messages. BTW, our group twitter handle is @docsforclimate ;
- Consider joining one of the 17 affiliated state clinician groups if you are a health professional. The groups collaborate at the state level with the environmental community; we also do this at the federal level. Please feel free to email me for a contact at: msarfaty@gmu.edu

ROBERT PEASE SMITH (ROB)

smithrp1949@gmail.com or smithr@mmc.org

Human Health and Climate Change

As a specialist in infectious diseases, I seek to delineate and publicize health risks amplified by climate change in peer-reviewed scientific publications, presentations, and, where appropriate, media. On the research front, I lead the Vector-borne Disease Laboratory at Maine Medical Center Research Institute. We investigate causes for the rapid emergence of tick- and mosquito-borne diseases, and one focus is the impact of current and projected climate change on disease risk. Our work on tick-borne disease emergence in particular receives regular local, and occasionally national, coverage. Two members of our team, which includes a Ph.D. in climate science, contributed to Maine's Climate Action Plan, a statewide map for climate response initiated by our current governor. We regularly participate in regional and national forums on infectious diseases and public health.

In outreach education, I focus on the consequences of climate change for human health in the more global context. One platform is formal lectures at medical school and post-grad venues like the public health elective at Tufts.

My personal activities in this area have included helping to initiate an ad hoc alumni climate working group for my 50th secondary school reunion. I support advocacy and conservation groups like Maine Audubon, the Natural Resources Defense Council, the Nature Conservancy, the Cornell Lab of Ornithology, and local land trusts, Like several classmates, I also support Physicians for Social Responsibility, the Maine chapter of which has been active on health and climate change issues.

Opportunities for classmate engagement and support

My hope is that we each assess our particular talents and networks, decide how we are best positioned to help with climate change mitigation, and become involved. I strongly believe that whatever efforts we make at this moment will be amplified in benefit for subsequent generations over actions taken a decade from now.

JOSEPH STANISLAW (JOE)

jas@thejastanislawgroup.com; puckah@hotmail.com

Sustainability and International Cooperation on Energy, Economics, and Finance

As an advisor to WAVE Equity Partners, (See: https://waveep.com/) a private equity investor on emerging technologies in the Sustainable Development (SD) space. I conduct advisory work to affect strategies, business models, and technology development to drive sustainable development. Firms in which we invest have plug-in, drop-in technologies that directly and substantially reduce or capture CO2 emissions in the production and delivery of end products or uses. I also work with companies to implement strategies to reduce the carbon footprint, imbed an SD culture, and seek alternative businesses that replace more carbon-producing methods with lower carbon techniques while meeting consumer and business needs. We invest in green energy data centers, forestry projects and systems to measure and validate carbon capture. It has been easy to promote the SD agenda to the boards on which I've sat, given that SD solutions also improve the bottom line.

Several portfolio companies include:

- Living Greens Farm (see: https://www.livinggreensfarm.com/ which has pioneered an indoor vertical farming approach that allows them to grow fresh greens and herbs 365 days a year in MN.
- Gradiant (see: https://gradiant.com/) which has commercialized a versatile and cost-effective set of technologies to purify wastewater.
- WindESCo (see: https://www.windesco.com/) helps wind operators drive annual energy production gains for wind turbine owners, operators and investors by monitoring and analyzing high-resolution wind turbine data through patented algorithms.

I also work in boards to advance the SD agenda (easy as the SD solutions also improve the bottom line.)

Opportunities for classmate engagement and support

- Offer educational outreach, by working with schools, community colleges, and colleges to discuss SD issues across all disciplines.
- Work within your own network to drive SD by broadening the understanding of what each individual can do -- it all adds up -- and what the organization can do.
- Promote greater understanding domestically and internationally among the haves and have-nots, and explore ways to address environmental inequities.

JAMES STODDER (JIM)

jim.stodder@gmail.com

Econometric Estimation and Forecasting of the Effects of Carbon Taxes

We can convince people to make the needed energy transition only by lessening uncertainty around that transition, and by mitigating its negative economic impact in the short to medium run. My forecasts show that the short-run impact is indeed negative, but that it can be mitigated with income subsidy without undermining the effect of the carbon tax itself and indeed, strengthening it.

These were among the issues addressed in a recent conference on carbon pricing that I organized at Boston University's Pardee Center for the Study of the Longer-Range Future, where I serve a Faculty Research Fellow: https://www.bu.edu/pardee/2021/07/31/conference-on-carbon-pricing/ My own conference paper included a simulation of the differing effects of an $80 per metric tonne CO2 tax alone, an income subsidy alone, and both tax and subsidy. The bad news is that a carbon tax high enough to be effective also substantially reduces GDP, but the good news is that a fiscal stimulus package large enough to restore the disposable income lost from that tax encourages consumers to reduce CO2 even further.

Opportunities for classmate engagement and support

Research benefits from monetary and other forms of support. Find a regional organization that is researching and advocating how to best manage green transition issues in your area. It's a pretty sure thing that people are more motivated and apt to enlist others if they're doing something with an immediate local impact than something to (maybe) save the world, eventually. Here's an example for my state of Connecticut: https://pacecleanenergy.org/. Some very good people are involved.

But if you are so inclined, don't ignore bigger or more abstract approaches. The work of the research institution at Boston University with which I'm affiliated, the Pardee Center (https://www.bu.edu/pardee), is a good example, although it is not exclusively environmental. The Environmental Defense Fund, https://www.edf.org/, also does top-flight research. My former teacher and environmental economist, Geoffrey M. Heal of Columbia University, was once its chair.

STEVE TANIMOTO (STEVE)

tanimoto@uw.edu

Teaching about Methodologies for Solving Wicked Problems.

I work at the Paul G. Allen School of Computer Science and Engineering, University of Washington, Seattle. See: https://www.cs.washington.edu/

My life's work is about helping students think coherently about solving "wicked" problems such as global warming. My 5-credit course is aimed at incoming college freshmen interested in learning and using Python programming in creating games that teach about challenging, typically global or national, problems. Students work in teams of 4 and do constructive analysis of seemingly intractable problems. The whole class (about 24 students) becomes project owner of each team's problem formulation and game, performing multiple steps of peer evaluation, fostering collaboration skills in addition to acquiring technical knowledge.

How Classmates May Participate in Your Climate Change Mitigation Effort

If you are aware of faculty at colleges or high schools who might be interested in the course I have developed, please point them at the websites below, and have them contact me if they need additional information.

Course description:

https://www.earlyfallstart.uw.edu/courses/discovery-seminars/game-design-for-problem-solving-with-python

Course home page:

https://courses.cs.washington.edu/courses/cse190c/21au/index.html

GEZA TATRALLYAY

g.tatrallyay@gmail.com

In taking action to mitigate climate change and enhance sustainability, I operate on two fronts, seeking both to reduce the sources of adverse effects and to improve society. On the source side, I helped start three companies, two in the renewable energy field, and one in the carbon trading field. Both JCM Power http://www.jcmpower.ca/ and GreenSource GmbH https://www.greensource.at/ have become major developers/operators of renewable energy projects globally, and I continue to be involved with them as an investor and strategic advisor. JCM Power is the largest wind power producer in Pakistan and has significant projects in Africa, Asia and Latin America. GreenSource has developed and operates many solar and other renewable energy projects throughout Central and Eastern Europe and Russia. Vertis Environmental Finance Limited www.vertis.com was one of the first companies in the world to offer carbon trading as a means of reducing a company's carbon footprint, along with other sustainable solutions. It has morphed into a serious advisor on climate change strategies for major corporations, especially in Europe.

Turning to society: two of my published volumes of poetry, Extinction and Extinction Rebellion, are likewise a call to action to help fight climate change; as is a completed manuscript seeking publication, Poems for our World. At least three of my published novels -- Twisted Reasons, Rainbow Vintner, and Arctic Meltdown -- also concern themselves in some way with critical environmental issues. A second updated edition of Arctic Meltdown was released in August of this year, and- I am currently working on a sequel, Arctic Inferno.

Opportunities for classmate engagement and support

- Reducing unsustainable energy sources: classmates can consider becoming investors in the companies I have mentioned.
- Improving society: classmates can consider buying, reading, and promoting my poetry and novels. All my published works are available through Amazon and other online sources, and local bookstores can order them. The Amazon link is https://www.amazon.com/s?k=geza+tatrallyay&crid=O2W9YMZHVN37&sprefix=geza+tat%2Caps%2C155&ref=nb_sb_ss_ts-doa-p_1_8

MARJORIE (ANGELL) VAN HOY

javh@aol.comu

Lowering the Carbon Footprint of our Residence and Transportation in Colorado

We purchased our house in Colorado Springs in 2009, before climate change/warming became totally "in-your-face" in Colorado. Although the vast majority of electricity in Colorado Springs is generated by coal and natural gas, we are producing a lot of our own electricity and cutting way back on the amount we take from the utility.

We have always tried to maintain a low carbon footprint for ourselves, and we chose a house on a north-facing slope on a wooded lot. When we first moved in, my husband, Jim, put 15 inches of insulation in the attic, and we replaced all of the windows with an Andersen Renewal product that is quite airtight with double-paned glass.

Four years ago, we installed solar panels on our garage, and they now supply two-thirds of our annual electrical needs. At that time, we also replaced the 220V 4kW heater in our high-ceilinged addition with a wood pellet stove. (Wood pellets are a renewable fuel.) We only run two dryer loads a week, and the other drying needs for our laundry are fulfilled by our wooden drying rack in the basement. In 2020 we bought a new Prius Hybrid, which we use for our transportation as much as possible, as it averages about 55 mpg. We plan to add more solar panels in early 2022.

Large trees on our quarter-acre lot and insulation in our attic insulation allowed us to forego air-conditioning. We open windows and doors at night to cool off the house in the summer, then close them during the day before it heats up. Most of our lot is "wild." We cut our smallish areas of grass about once a month, and we don't over-water. We have a deck with a sail for shade that we enjoy.

Opportunities for classmate engagement and support

We belong and donate to Citizens for a Healthy Community (CHC), an anti-fracking organization fighting to protect an area of Colorado west of the Continental Divide.

- Check out CHC's website, https://www.chc4you.org/#.
- Consider reading: Imagine It: A Handbook for a Happier Planet by Laurie David. See: https://www.amazon.com/Imagine-Handbook-Happier-Laurie-David/dp/0593235150

3. IMPORTANT BACKGROUND RESOURCES ON CLIMATE CHANGE

- **"The Science of Climate Change Explained: Facts, Evidence and Proof - Definitive answers to the big questions," by Julia Rosen, Ph.D.**
  https://www.nytimes.com/article/climate-change-global-warming-faq.html?referringSource=articleShare

  The author is a journalist with a Ph.D. in Geology, whose research involved studying ice cores from Greenland and Antarctica to understand past climate changes.

- **"The Promise of Planetary Health," Sam Myers, M.D., narrator**
  https://www.youtube.com/watch?v=9cZ0zBSJz_g

  Dr. Myers is the Director of the Planetary Health Alliance at the Harvard T.H. Chan School of Public Health. He received his B.S. from Harvard-Radcliffe (1988), his M.D. from Yale, and his MPH from the Chan School.

- **Project Drawdown**, https://drawdown.org/solutions/table-of-solutions
- **Project Regeneration**, https://regeneration.org/home

  Project Regeneration (2021), "the world's largest, most complete listing and network of solutions to the climate crisis," and Project Drawdown (2017), "the world's leading resource for climate solutions," are nonprofit organizations founded by noted environmentalist and *New York Times*- bestselling author Paul Hawken. His latest book, *Regeneration: Ending the Climate Crisis in One Generation* (2021) reflects a radically new understanding of and practical approach to tackling climate change, weaving justice, climate, biodiversity, equity, and human dignity into a seamless tapestry of action, policy, and transformation.

- **Third Act**, https://thirdact.org

  Another nonprofit recently launched by an equally acclaimed author, environmentalist, and activist, Bill McKibben, HR '82. As its name suggests, Third Act's mission is to rally older Americans around climate change, starting with this critical question: what do we want our legacy for our children and grandchildren to be?