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I am climate change, I am the cause, I am the solution - 2015

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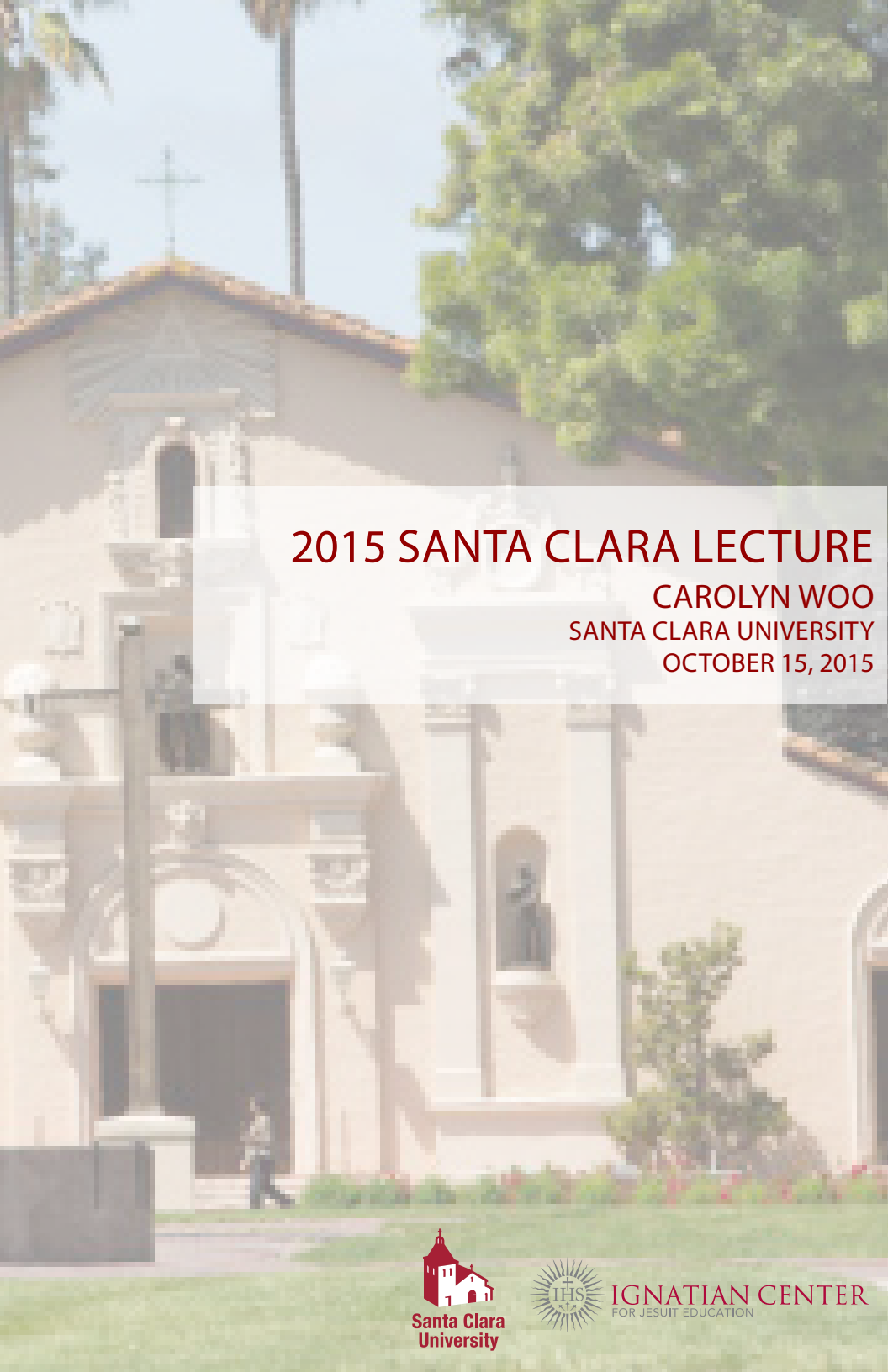

2015 SANTA CLARA LECTURE

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2015 Santa Clara Lecture
I am climate change, I am the cause, I am the solution
Carolyn Woo, Catholic Relief Services
Santa Clara University, October 15, 2015

Thank you so much for having me here. I love coming to Santa Clara University. It's such a beautiful campus. Every time I walk through I just think, oh boy, what a life here. So I just want to say thank you very much, and it is such a well-run university. My former colleague Dennis Jacobs, now the provost, is such a gem. You're very fortunate to have him.

One of the first things I need to do is to offer an apology to St. Ignatius. I feel very badly that our screen covered up St. Ignatius, probably the most important symbol here, so my apologies to St. Ignatius and St. Claire: sort of presumptuous to cover them up so we could do a presentation, because they're the reasons we are here, really!

I want to talk a little about being one of the 500 most important people on the planet. I think that's really, really cool, don't you think? Except I don't think it's really about me. I joined CRS in 2012 and received this award in 2013, except not for any work that I did. I just happened to be at CRS at the right time. But I want to highlight that because I think that recognition is really the recognition of the work of the U.S Catholic Church.

For 70-plus years, Catholic Relief Services has been out there since World War II. First, to bring refugees out of Eastern Europe during World War II, and today still bringing refugees out of someplace—and actually Eastern Europe too. In addition to emergency and refugee work, we do other major development work. Catholic Relief Services actually belonged to the U.S. Catholics, as an official agency of the U.S. Catholic Church started by the Bishops Conference. It's like the Red Cross of the U.S. Catholic Church. In a substantive way it's also funded

by the U.S. Catholics. It's out in the world today in over 100 countries in the most difficult of places. We serve the poorest of the poor.

Many people we serve make less than $1.25 a day. About a billion people live on $1.25, and we actually oftentimes work with people who don't have any income, period. We're in places like the Ebola-stricken countries in West Africa. We are in Gaza, for example. We are in South Sudan and Central Africa. We're in Nepal. Really very difficult places. So recognition goes to the work of the U.S. Catholic Church—not just the service provided but the voice that we brought back to the United States, the suffering that we saw, the conflicts that we saw. We tell Congress. We do a lot of congressional testimonies, a lot of advocacy to let people know the degree of suffering going on in the world.

So I share this as a recognition that goes to all of us. Many people, including our colleagues who have now since passed through. It's a reminder of the importance of service and a voice, of an agency that goes out to serve in the name of God, the love of God to everyone. We serve on the basis of need and not on the basis of creed. We are often in countries where Catholics are not even 1 percent of the population. Today we serve about 100 million people in the name of the Church. So I just want to draw that to your attention.

So the first thing I want to do is show a little video. It's about five minutes relating to *Laudato Si'*. I'm going to bring my colleague Ken to come up and we're going to all pray for a quick minute for the Internet gods including St. Claire to make sure that our live streaming from the Internet works. Thank you.

[Video Plays]

Laudato Si' comes from the music of the heart, music of the human heart. It comes from the music of nature singing praise to God. It comes from an effort, an attempt to give a new hope to the world, a new sign that we are all related. We are all responsible one for the other.

Laudato Si' comes from the voice and the heart of God. It's God's song that sings through creation. It's God's song that sings through each of us. *Laudato Si'* is an expression of responsibility. It tells us that I no longer can live my life for myself. My life is a mission as Pope Francis tells us. My life is to give glory to God by respecting and caring and promoting a sense of being in this together, that life is one and that we're all members. Each of us brings a special contribution.

So it's not just a flowery song about how we should live with nature. It's challenging us to revise our entire way of living our lives, how we internalize the values of the gospel, the gospel of our Christian lives, and what challenges this means for us. If someone is starving somewhere in the world, we are responsible. If someone doesn't have enough food to eat, then we need to reduce and review the way that we approach food, the way we approach our use of goods, the way we accumulate things, the way we expand and discard things. We need to be challenged to review, to conduct a conversion of our own lives.

Nature is barking. Nature is chasing after us telling us we've got to wake up. It's disturbing us. It's not disturbing us in order to threaten our lives. It's telling us we are already a threat to ourselves. We're a threat to the world, and nature is trying to tell us, "Step back from the brink before it's too late!" What happens in exploitation without limitation is not only is nature stripped of its dignity, which God gave it and we cannot deny that, but we are progressively stripped of our own dignity, because each time that we fail to show dignity toward other human beings and toward nature, we lose our own dignity. We lose our own recognition of our special character if you will that God has given to us as human beings, that we are called to be this mission, to be this witness in a particular way.

Okay, let's tame the technology so that I could come back to you. By the way, the person singing in the video actually is Father Michael Perry. In a Jesuit institution I'm not gonna recruit for the Franciscans, but for some of you who are thinking of vocation, that's a

cool guy. He has spiked hair, right? I don't know whether you notice, and he rides a motorcycle, grew up in Indianapolis. He was in a folk group. He had a guitar. He loved to sing. He wanted to become a lawyer, but somewhere along the road he became a priest with spiked hair. He worked with CRS at one point, and he is now the head of the Global Franciscans, the OFM branch.

Anyway, that's Father Michael Perry. To come back, I want to make ten points. I dread speakers who go on and on and lose me. So I try to be disciplined: I'm not going to review the science of climate change because others can do that and I'm not a scientist. My talk is called "I Am Climate Change, I Am the Cause, I Am the Solution" because that is the name of a program we are rolling out in universities.

We have a climate program with resources allowing people to learn more, to understand the consequences and see some of them played out. Because in the 100 countries where we work we deal with the aftermath of very severe storms, frequent storms, drought in agricultural communities, and people who have lost their livelihood due to the rise in sea levels. We see its aftermath. So we bring to college campuses a set of resources, with new ones released every two weeks starting in January to keep this topic fresh and foremost.

Before my ten points, I'll begin with a very short anecdote. Cardinal Tagle from the Philippines is a wonderful, wonderful cardinal—just very compassionate, very knowledgeable, smart—but first of all very pastoral. When he encountered this encyclical he said, "Sometimes we have to think about what we have to praise?" The most difficult encounter in his life as a priest, he said, was having to bury two young girls who died after eating chicken retrieved by their father from the garbage bin.

So he asked the question: "Praise be to what and for what?" That's a very graphic illustration, but it captured the spirit of what the Pope is trying to teach us: People who are so poor, living alongside food waste

which is retrieved but has already spoiled.

The second thing of course is a particular term. "*Laudato Si'*" came from the canonical of St. Francis, who reminded us that the Earth is actually our common home and that our bodies are made of her elements. As Father Perry said, it's a song from the heart. It's about praise be to God's creation. That's where the praise is: Praise be to God's creation. So how do we praise God?

Praise is not just to God for what God has given us. For *what* has God has given us creation? How do we praise God? That video urged that our lives are supposed to give glory to God. So praise is not just a passive thank-you, but it's also calling for a very active response.

I want to lighten up, actually just because it's a pretty dense document, *Laudato Si'*. I don't want a show of hands for how many have read it—I don't really want to know—but it's a pretty dense, though readable, document I think. I'd like to actually use the analogy of a song from the country music genre. How many of you are country music fans? Just raise your hands. Not a big country music group, I can see. Neither am I, and I cannot sing, so I'm gonna give you some of the lyrics I wrote, which I think kind of capture *Laudato Si'*, and it goes like this.

"I gave you my love and you rejected it. I gave you my heart and you gave it to somebody else. I gave you my best creation and you didn't cherish it. I saw the best in you, but you forgot who you are." I mean, that's country music! Rejection and dejection and sort of having given so much and being completely left behind.

That is Pope Francis' message about God's love for us and how we take it for granted. God gave us our heart and we somehow worship something else. He gave us His best creation and we didn't take care of it. He saw the best in us and somehow we settled for some lower version of ourselves. That's the country music, and it's based on the fact of course that we haven't treated the Earth very well. You see some

of the pictures. In California I actually don't have to paint a picture for you. This is a state which is very, very clear-minded about some of these issues.

The Pope actually used a lot of science in writing *Laudato Si'*. The Vatican and the Pontifical Academy of Sciences convened the best of scientists for several decades. In fact, the first statement on the climate in the U.S. comes from the U.S. Conference of Catholic Bishops in 1981 over 35 years ago. So this is a document which is not without science. In fact, the Pope said "Science is the best tool for us to hear the cry of the Earth." He didn't want a scientific working paper, but a lot of his observation is based on science.

When *Laudato Si'* first came out, I remember. I was there. It was an amazing experience there with over 400 journalists from around the world immediately as it went out; criticism, comments, and so on were coming back in, in real time. One criticism that came from some of the American politicians was, "What does the Pope know about science?" Well they retracted that statement, finding out that he was actually a chemistry major, and his first job was actually a chemist in a lab. But that third point really is about the genre of dejection and rejection in a country music style. It's based on observation of how we have not treated the world and creation well, but it is less a scientific document than a document about relationships.

In fact, this is my fourth point: I think we have to approach *Laudato Si'* as a love song with three elements. One is about relationships, right? That's what love is, a relational thing. The second one is about responsibility. And the third one is about response. I'm going to characterize the encyclical using just these three dimensions: relationships, responsibilities, and response. The fifth point is about relationship. Very early on in the document it says, the Pope reminded us, all life on this planet is connected. We are bounded together.

We are all in the same universe, in the same ecosystem. We are all

joined. We with each other and we with creation. He said human life is based on three foundational relationships: our relationship with God, our relationship with each other, and our relationship to creation, and all of these relationships and all life on the planet are bounded together. And that's why he said there are not two different crises. The cry of the poor and the cry of the Earth come from the same causes. It's not like they're two different things. They're two manifestations of the same problems, and the problem he identified is the way we live.

It's the way we relate to each other. It's the way we relate to God. It's the way we relate to creation. So the most important thing he said is that we are a society so focused on ourselves to the point where in some cases we raise selfishness and self-centeredness almost to a virtue. Wow. Right?

One manifestation of that self-centeredness and how it becomes a virtue is the way we put profits and our own incomes and so on above everything else, right? To the extent that self-centeredness and selfishness lead us to become very rich, whether as an individual or an organization. We raise profits in society to a certain worshiping of wealth, right? Until it becomes a virtue. We raise profits above people.

That's the Pope's biggest point. It's not that he doesn't believe in business, though a lot of people claimed that. He's not so much anti-business as he is opposed to some values and conduct of business which create problems. He particularly warns us when we put profit above people, everything goes awry. Economic development and economic growth can sometimes be unsustainable when we use up resources which cannot keep up with that type of growth. That growth doesn't always benefit everyone. In fact we have seen in the countries that have increased in wealth the poor people actually get left behind. In the United States now we have the highest gap in terms of the richest and the people at the bottom—the largest income gap we have ever seen.

So economic growth doesn't always benefit everyone. He reminded

us for example that economic growth sometimes comes from inducing people to consume, to keep on buying things and over-purchase. Over-consumption leads to the ways we are creating. Think about all of our iPhones, our computers, everything plastic and so on. Where do all of these things go? He reminds us about that, and putting profits above everything else also leads us to misvalue or undervalue things that don't make profits for us. So to the extent that air doesn't make profit for us, we don't care.

I was with the ministers of some island state, islands where the rise in the sea level really completely wipes them out, and one was talking about this 2 degree centigrade solution, a sort of U.S. and global commitment to allow for a growth of 2 degrees centigrade within the next 50 to 100 years. Some find that better than the temperature of the world going up by 4 degrees centigrade, so a global solution is, "Let's settle for 2 degrees centigrade because we think we can manage a crisis at that level."

The island state minister said, "Carolyn, I can't accept that, because all the corals in the water would have died, and my people live on fishing and fishes depend on corals. We just have wiped out our livelihood, so it may be workable for most of the world—and workable is debatable—but it definitely doesn't work for us."

But as for the rest of us? We don't know about corals. What is the value of coral? To the extent that it doesn't have a profit value, we don't know what its value. We become dismissive. We don't want to destroy it, but somewhere along the line if it is destroyed it hurts nobody except those somebodies who don't have a voice. And so the Pope reminded us that in a very arrogant way biodiversity loss doesn't seem to affect us and therefore doesn't have much value. The Pope reminded us that these things are made by God. Nothing is created without a purpose. Everything has a value, and it is a bit arrogant for human beings to attach their value.

One analogy has helped me understand world temperatures rising by 2 degrees centigrade. It's hard to sort of feel what that means? Except the very top scientist on climate who runs the Potsdam Institute in Germany said, "Carolyn, the Earth is a very fine-tuned ecological system. It's like your body. What if instead of operating at 98.6 as the average temperature it operates at 100.6? Or if we don't watch it and reached 101.6 or 102.6? That's what it means in terms of stress." No, we don't function well and actually can die if we have to operate at over 100 degrees consistently over a long period of time.

The bottom line really is about relationships of how we live relative to our statement about who God is in our life, where our neighbors are, and also where creation is. Pope Francis talks about the throwaway culture: Not only is it bad for the environment, a throwaway culture will lead us to throw away people.

When we are dismissive, we are dismissive in many ways across the board. That's why you see Pope Francis reach out to prisoners. He reaches out to the throwaway people of our society. He always calls for the love for the elderly because he also recognizes they often get left behind. He is particularly compassionate to the disabled, the disabled children. He speaks for the migrants who have absolutely no voice because they have no citizenship. They don't belong to any country, having left the country they used to belong to and having to live in countries that don't claim them. He also stands for the mentally ill, who also are told they don't have worth. And of course the poorest of people, who are invisible.

It's the whole idea: If you are a throwaway culture, you will throw away people. So that's the fifth point I want to make about relationships. The next one is actually pretty simple, pretty short. He reminds us of our responsibility, and that is why he opened the encyclical with a question.

What type of world do you want to create, not just for yourselves but for the children who are already here? What do you want to make of your

life's purpose, of your work's purpose? He reminded us of Genesis, in which God gave us the earth to till and to keep. To till, we work it, we plant it, we harvest from it—we do all sorts of things because the earth is supposed to sustain us and to nourish us. But what about the keeping part? We just keep tilling and we are not keeping. We are not taking care.

So his question is about this gift which is given to us. We are the stewards of these gifts. We are not the owners and we are definitely not the creators of these gifts. What is our responsibility in terms of proper stewardship for these gifts? So that's a whole issue of responsibility, right? The third part of it is about response. Relationship, responsibility, and response. What will we do?

Finally, the other part of "praise be" is not just praise be to God for your creation, but how will we use our lives to give praise? So what will we do? What is our agency in this? Here he also introduces a concept called ecological conversion: learning, seeing, and knowing consciousness. Then if you are conscious, are you committed? Will you then act on your commitment?

It's sort of the whole area of "There's no problem." But there is. "It's not my problem." Well it is. "Well, there's not anything I can do about it." Fortunately there *is* something we can do about it.

So he calls for this whole ecological conversion: You have to learn and you have to know and you have to open your eyes. I think that's what the encyclical is actually doing—forcing a lot of people who don't want to know to know. He puts it on the table. We cannot walk away from it, and if we do, that's a very explicit decision to walk away from it. So it is a problem. It is our problem, and it is a problem that we can do something about. That's the point.

Of course, he actually gave some examples of what we can do, but I just want to say—this is my seventh point I think—one action to take

is as a consumer. We all buy things, and there's virtuous consumption and irresponsible consumption. You know we are a shopping culture. There's no other way to state it. I mean just see the malls and what we have, and I think I'm one of those. I love to go shopping to some degree but often compare with the people we serve who don't have electricity, whose house is really a mud hut. I've seen many of those—where the roof is actually made of grass. Where there's very little food, all of it cooked outside using wood collected from the hills. You come to realize how much we have things that we don't really, really need. But it's not just overconsumption. I want to give a personal example that is powerful for me.

I love flower arranging. I just love it. It's a way that I relax. I don't know whether you remember, some of you may be old enough, but in the 1970s or 1980s flowers were not cheap. You had to pay $3.50 for a long stem rose. Does anybody remember those days when it was about $3.50 for long stem rose? But nowadays you can go to a big box retailer and buy a bundle of 20 long stem roses for $15.00. You can buy in white, you can buy in red, you can buy in yellow. So that's less than $1.00 a rose, and $1.00 now is much less in value than 30 years ago. In other words, long stem roses now are very inexpensive. Which I love, because you could buy bundles of them and do whatever you want with them, scatter the house with bouquets of red roses or white roses or whatever. Until I went to Ethiopia and I visited a greenhouse.

The greenhouse is about this wide, maybe a little bit wider, and it's just long. It just keeps on going and going and going. It belongs to a conglomerate out of Europe. Flowers are harvested and sent to European markets rather than the U.S. market. The greenhouse is enclosed by plastic and it's really hot. I mean, the Ethiopian temperature can get over 100 degrees, and inside these enclosures it's just much hotter. The sun is beating on it.

It's worse than just heat, though. The use of chemicals as fertilizers and pesticides creates fumes in these enclosures, expose

people to carcinogens. And so the people who work there have a higher rate of cancer because of very poor ventilation. They're in there for a long period of time inhaling the fumes. Another problem is the drawing down of the water table of the farming community nearby. It just sucks up the water. So if you're a small farmer, you have no choice other than for your wife and your daughters to go to work in these greenhouses because you can't farm well.

So I took a look at them. And I thought, "Oh. Now I know." I mean, I just feel queasy about these cheap roses: All of a sudden it's clear why they are cheap. They're cheap because a lot of the costs associated with growing them are not imputed into the price of those flowers. And these Ethiopian workers, they don't have enough power to really argue. Neighboring Kenya has stiffer regulations with respect to the number of breaks that people need to have and also the concentration of these chemicals in the air.

You can have rules. You can have labor rules. You can also require companies to return water, recycle water, to put it back and to reuse so that operations don't draw so much water. So I just want to give that example because we consume so much and we like cheap products.

Another thing I remember is that when I was a child, shrimp was very expensive. You have shrimp as a treat, at best once a week; now shrimp is inexpensive, relatively speaking. But the seafood industry is one where there's a lot of slave labor. People are just not conscious or aware of the products we use, or whether people who are invisible at the earlier point of the value chain have been cared for properly. These are just some examples of being a consumer.

The eighth point I want to make is we are also citizens. That means we need to advocate for policies that support the poor and protect the environment. For example, the U.S. is headed to Paris for this whole climate accord. The Obama administration has real goals for what the U.S. would do. He has exercised some of those in different ways,

such as the Clean Power Plan. We have the 26 to 28 percent carbon reduction. The key really is we have to be sincere going into the Paris Accord.

We also have to put money behind it. The U.S. committed $3 billion over four years for green investments. As citizens we have to say this is serious. This needs to happen. There are also policies that relate to adaptation and mitigation. Mitigation is to as best as possible transition toward a low carbon scenario, but adaptation is where in parts of the world people are already dealing with the consequences and need funds or assistance to help them adapt. Overall there's more emphasis on mitigation and not a lot of emphasis on adaptation. But those are some of the things about which citizen of this country can use their voices.

Accompanying mitigation and adaptation are the investors. Endowments and retirement funds are invested in various type of companies, and so from the Bishops Conference we actually have prohibitions against investing in nuclear weapons, gambling companies, pornography companies, and tobacco companies. So it's not a new thing to have prohibitions against certain type of businesses. A new movement is looking at the carbon footprint of businesses. Their investment portfolios set targets for what carbon emissions can be. So investing in those things and in clean energy makes sense.

There's a lot of conversation about divestment on campus, and I think sometimes the divestment conversation is necessary but not sufficient. They key is not to get rid of all utilities and so on, because we need utilities, which cannot go from coal burning to renewables tomorrow. So there is a journey. The question is, where are the sincere steps in that journey of a utility company from where it is today in terms of its carbon emissions towards something cleaner. Is there a journey? Is there a plan? Is there a commitment? Is there accountability toward that?

Next, let's not stop at divestment. Whatever money is freed up from the divestment, what do you invest it in? Here I want to show my

second video about climate investment funds and what they're doing. I think it's interesting particularly for students as you move into your careers to know of some of these areas around the world and the type of commitments to investments that are put toward a low carbon economy.

[Video Plays]

Video: As we go above 2 degrees C, the changes are going to be pretty severe and irreversible. The impacts of global warming are felt in a very different way in different parts of the world, and unfortunately those who are least responsible for carbon emissions will be hit hard. There's not enough technical capacity to invest in it all. The world needs significant effective instruments that are helping emergency economies in developing countries contribute to this global effort of tackling climate change, and that's what the climate investment funds are really doing. If we didn't have the chance to find this, I would be doing this maybe not this year, maybe ten years later when I have enough funds.

Today I found this fund and then I did this job properly, otherwise I couldn't have done it. The Forest Investment Program supports actions that are needed to prepare for the REDD+ initiative, especially for developing innovative institutions and financial models. In particular the Forest Investment Program will allow us to test these innovative approaches at the local scale, allowing these to be readily accessible to communities. If you need help with finance and technology, if you get these two things right with a good gardening policy, we'll definitely make our business a thriving business.

Innovation is really putting in place policies and guidelines in relation to how indigenous people should be engaged in these processes, and of course one concrete result of this is also putting in or allocating dedicated grants specific for indigenous peoples and local communities under the Forest Investment Program. Solar power plant ecology can produce enough electricity to power more than 2,100 households. The emissions savings are the equivalent of taking 2,000 cars off the road

for good.

We need mechanisms like these because they are producing results. They are showing the way. They are showing it's possible that these investments are possible and they are sound, and so we are showing that leadership from developing countries, undeveloped countries who have made these contributions is possible and that much more can be done.

Carolyn Woo: So I just want to say this is just one example of many, many green funds nowadays. Another website for students to look at is the Eco-innovation Program, which is a European Union initiative to keep track and score the 28 country members in terms of how green they are and how much they've invested in eco-innovation. Among 40-plus industries they showcase all the eco-innovations in housing, retail, craft, financial services, and so on. Its grant program supports startups of eco-based businesses, and it's very exciting. I know this is Silicon Valley, you like entrepreneurship, but when you click on these different ideas it relates to everything—packaging, printing, everything. Forty-some industries is pretty broad.

So I just want to give you some sense of all this. As the next generation you have to think about opportunities. This whole climate conversation is not just a big scold. It's not just a big scold by the Pope. It's turning us around to say it's a love story first of all. Reclaim that love and use that love in a way to honor creation and take it to a different level, reversing some of these problems.

Climate justice is a very simple idea: The people who are very poor, the people of island states, the Central American farmer who cannot get a crop because of the changes in climate, ask a question. "We never enjoy the lifestyle that brought this on. We are dealing with the consequences, but sorry, we don't know that lifestyle of overconsumption. Why do we bear the cost?" That's the whole issue of the climate justice.

I'll use two stories to illustrate my tenth point. I was visiting with two

senators. We do a lot of these advocacy visits, going into Congress to say, "What is happening? What are you supporting?" and so on. I visited with a Republican senator who is very passionate about climate. We don't want to just draw a line and say Republicans don't care—this Republican senator really cares a lot about climate change and has actually been part of several bills. One of those is cap and trade, putting a price on carbon and restricting its level.

In cap and trade, if you emit below the amount of carbon you may produce, you sell carbon credits to others who overproduce. Very good idea—except where is this bill? And the person said that it's dead. It's so complicated. It has over 2,000 pages of text. There's so much sort of giving this to this industry, giving that to that industry, and the person said, "I can't even follow it. I can't support it because it doesn't look like anything we started with and it's not implementable."

Then I asked, the U.S. committed $3 billion over four years for climate investments, and we just made our first payment, which is $500 million, which is less than one-fourth of $3 billion. So our first year we are putting in less than what we committed. I said, "What do you think of year two, three, and four?" She said, "I don't think we can get the money." She said "This is a very big fight." She is the person who actually is the deciding vote, and she said, "This is a tough fight. I don't think we can get it." And I looked at her and said, "This is not very encouraging. This is not very good."

I said, "Are you giving up?" And she said, "Oh no, I'm not giving up." And then she said, "These are several things that we're doing." So she said in a bipartisan bill with a Democrat, they are now looking at "super pollutants"—soot, aerosols, and methane gas, 100 times more damaging than carbon. She said, "You know a broad climate bill is hard to pass now." So we're now changing our focus to very specific things with specific outcomes. She said, "People probably won't fight super pollutants."

And then she said, “Oh, this is something, Carolyn, that relates to your work. It’s about clean stoves in Africa and other developing countries, because stoves now produce a lot of soot.” It’s a very high percentage contribution from these. Stoves are very bad for people’s lungs. She said, “We could deal with clean cook stoves. The technology is already there, it’s not expensive, and we could actually deal with this issue and also have some impact.”

And she said, “You know what? Nobody gave us permission to give up.” And I just thought that was so inspiring.

There is another senator, a Democrat. For like 117 weeks in a row, every week he goes on the floor and he has a little speech on climate. Now I don’t know whether it has any audience, but every week he makes a statement on climate, and he was so eager to get the Pope’s statement—he’s not Catholic—because now he has more resources to research. He knows the evolution of butterflies and this particular underwater creature that is an indicator of the state of climate change. But every week he makes a statement. It’s a reminder: Nobody gave us permission to give up, and particularly this generation.

I think climate is a hard slog. I have absolutely no delusions about that, but it doesn’t mean we therefore cannot work the problems. We just have to not give up and keep on finding the next sort of path to take. I want to end this with another video. It’s only about three and a half minutes, and it’s a voice from the past. Most of the students probably don’t know him well, and that’s Carl Sagan, who for people of my age was a hero. I want to end with a three and a half minute statement from Carl Sagan.

[Video Plays]

Video: From this distant vantage point, the Earth might not seem of any particular interest, but for us it’s different. Consider again that dot. That’s here. That’s home. That’s us. On it everyone you love, everyone

you know, everyone you ever heard of, every human being who ever was lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king, peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every superstar, every supreme leader, every saint and sinner in the history of our species lived there on a mote of dust suspended on a sunbeam. The earth is a very small stage in a vast cosmic arena.

Think of the rivers of blood spilled by all those generals and emperors so that in glory and triumph they could become the momentary masters of a fraction of a dot. Think of the endless cruelties visited by the inhabitants of one corner of this pixel on the scarcely distinguishable inhabitants of some other corner. How frequent their misunderstandings, how eager they are to kill one another, how fervent their hatreds. Our posturings, our imagined self-importance, the delusion that we have some privileged position in the universe are challenged by this point of pale light.

Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all this vastness, there is no hint that help will come from elsewhere to save us from ourselves. It has been said that astronomy is a humbling and character building experience. There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another and to preserve and cherish the pale blue dot, the only home we've ever known.

Carolyn Woo: So thank you very much. By the way, all three videos are available on the Internet. Theresa tells me now I am to take questions. Yes?