Christina Rickelo: Hi everybody and welcome to the last keynote presentation for the afternoon. My name is Christina Rickelo and I am a student here at Chico State, and I'm honored to be introducing you to Marissa Mommaerts. Marissa Mommaerts is the communications manager for Transition US, the National Harbor for the International Transition Movement. She also consults and collaborates with several other projects and organizations that support grassroots responses in ecological and economic instability including the thriving resilient communities collaboratory, the Northern California Community Resilience Network and the Sebastopol Village Building Convergence. As a native Wisconsinite Marissa received her BS in International Studies and her Masters of International Public Affairs from the University of Wisconsin-Madison. She studied and volunteered in Nigeria, Peru, and Uganda before moving to Washington, DC to work on a global communications project supporting world leaders and advocating for human rights and sustainable development within UN negotiations. Including the UN Climate Change Convergence, COP 17, Durban, South Africa and the Rio+20 Earth Summit. An activist, community organizer, gardener, homesteader, and student of the growing community resilience and permaculture movements. Marissa is committed to aligning her actions with her values, and to supporting solutions, to planetary crisis that create opportunities for healing and collaboration across generation, class, race, gender, culture, and species. I have had the absolute honor of getting to spend time with her the past couple days and I can tell you she is one of the most amazing women I've been able to meet this weekend. And without further ado I'd like to welcome her up here. Thank you everybody.

Marissa Mommaerts: This calendula plant is from my garden and it's a gift to Christina for taking such good care of me but I also thought it would be nice to have
up on stage because it's a really good example of what we're going to be talking about today. It's an incredibly resilient plant. I've seen it growing in cracks in the road, bee's love, it's medicinal, and it's drought tolerant.

Thank you I am honored to be here and grateful to the conference organizers for giving me the opportunity to speak to you all. I spent the last 10 years gathering the information and learning the lessons I'm going to share with you today but I'm not an expert on any one of the topics I'm going to cover. The more of a systems thinker looking at how all of these issues intersect and what kind of opportunities exist for holistic solutions. I'm going to share with you what is essentially a crash course in building resilient communities. On Wednesday I was at the launch of the Oakland Resilient Cities Initiative where a wise old man who gave the opening remarks said "Resilience is the polite word for survival", and he's right. The challenges we face, our great, but before I get into those I want to share with you briefly what motivates me to do this work.
I'm motivated by a deep sense of love. Love for my family and friends and for all of you and for all of the beautiful humans around the world who I will never meet. Love for nature and all the plants and animals and microorganisms in the air and water and soil. And I want us all to be able to survive and to thrive. I also have a deep love for our children and grandchildren and I want them to be able to live in a world that still has healthy food, and drinkable water, and clean air, and monarch butterflies, and sea lions, and whales, and polar bears, and elephants in the Pacific islands. And I'm also motivated by a deep sense of rage because right now all of these things are threatened by the way that we're living as humanity on this planet. We need to start doing things differently, radically differently. Okay so let's start talking about what we're up against. Our lifetimes and the lives of our children and grandchildren and so on will be marked by the impact of a set of converging crises.
One of these is ecosystem degradation. Ecosystems provide vital life-giving services like pollination, producing oxygen, cleaning water, and carbon sequestration. As we weaken our ecosystems through practices like deforestation, depleting topsoil, pesticide use, and fossil fuel dependency. We undermine the earth's ability to provide these services that we depend on for survival.
We are also facing a water insecurity crisis. Given that we humans are over 70% water and we need water to survive it should be treated as sacred. Instead we’re polluting it with oil, and chemical spills, agricultural runoff, and human waste. Harmful industrial agriculture practices that strip topsoil and use water unsustainably have contribute to desertification in many parts of the world. How many of you heard about the NASA report that said California has one year of water left? About 80% of the water used in California is for agriculture and in the Central Valley aquifers are being drained to the point that land is sinking. This is serious.
Okay we are also looking at a food insecurity problem. Already around the world more than 800 million people which is over 10% of our global population suffer from chronic undernourishment meaning they don't have enough food. Has anyone in this room looked into the eyes of someone who's starving? I have. For the most part this isn't because we aren't capable of growing enough food but rather because our food systems are inefficient and what we do grow is an equitably distributed or wasted. In addition I centralized monoculture food system is very vulnerable to the extreme weather that will accompany global climate change which means crops will fail, food prices will increase, people will go hungry, and as history shows this leads to migration political instability and conflict.
We also have a big problem with overconsumption. In most of all countries and particularly in the US we buy too many things we don't need. We are buying too many things we don't need. We are creating huge amounts of waste that ends up in landfills or in massive garbage islands in the ocean. And we're depleting natural resources faster than the earth can regenerate.
I know yesterday we had an excellent presentation on inequality and I'm grateful to the conference organizers for starting with this topic because it's really important. Take a look at how wealth is distributed in the US. I'm here in the negative financial wealth zone because of my student debt, I'm sure some of you are too. In many cases this wealth has been consolidated at the expense of human and environmental well-being. Which is not only fair but as we heard yesterday it's extremely problematic for building community resilience. This level of inequality makes some segments of the population very vulnerable to environmental or economic shocks which we've seen with Hurricane Katrina and Hurricane Sandy and last year in Detroit where thousands of low-income households who were late on their water bills had their water shut off. Even this man Nick Hanauer who is a multimillionaire, one of the early investors in Amazon, is concerned about inequality because as he wrote in a letter to his fellow billionaires in Forbes magazine "If we don't do something to fix the glaring inequities in this economy the pitchforks are going to come for us. No society can sustain this kind of rising inequality, in fact there is no example in human history were wealth accumulated like this and the pitchforks didn't eventually come out. You show me a highly unequal society and I will show you a police state. Or an uprising. There are no counterexamples, none. It's not if it's when."
And finally we're facing climate change. This changes everything. We're already on track for roughly 2°C or 3.5°F temperature increase and likely quite a bit more than that. We know the impacts of climate change, increasing natural disasters and shifting temperatures. That means we're going to see plants, animals, and people displaced from their homes like these incredibly resilient people from the Pacific Island of Tokelau. Climate change will interact with and accelerate some of the other crises we touched on but we don't know exactly how or when. The scale of transformation necessary to avoid the worst impacts of climate change, things that you don't want your children and grandchildren to have to experience is huge. It's not enough to change a lightbulb, to ride your bike, to eat organic, to divest from fossil fuels, or to install solar panels. We need to do all of that and more.

In the words of the author Naomi Klein, "Climate change is a civilizational wake-up call. A powerful message—spoken in the language of fires, floods, droughts, and extinctions—telling us that we need an entirely new economic model and a new way of sharing this planet". Let's take a moment to sit with us all. It's pretty scary stuff. Fear can be paralyzing but we don't have time for inaction so it's important to be present with whatever emotional response you're feeling right now. Notice how it feels in your body. Raw emotion is creative energy that you can try to ignore and allow to fester in your mind and body as you go back to your normal routine or you can channel it into something productive. Which is what this rare planetary moment requires of us.
My friends who study nonviolence tell me that wherever there is fear there is power. I’ve had to tap into that power to be here with you today. And I’m tapping into it right now because speaking to so many people who really care and have the ability to make a difference and trying to figure out exactly what to say to you to convey the gravity of the planetary crisis we’re inheriting, while still inspiring and motivating you enough to take action and embrace the challenge and possibility of the extraordinary moment we live in is fucking scary. I’ve also heard that when Gandhi was young he was a scaredy-cat, he was essentially afraid of everything, he lived in fear. In the moment he learned how to overcome his fear was the moment he changed not only his own destiny but that of the Indian people. So let us use all the knowledge we have about the state of the world and all the power we hold as young people who are inheriting an uncertain future to make decisions that align our actions with our hearts.
Okay so because we can't predict how or when these different converging crises will interact or what exactly the impacts will be we should be looking for solutions that will enhance our personal community and planetary resilience. Our ability to bounce back from challenges.
Unfortunately many of the solutions that help us build resilience also help us get off of fossil fuels while healing our planet and our culture and they’re already being implemented all over the world.
This is a map of the international transition or transition town’s movement which is a grassroots response to ecological and economic instability. Transition is a positive vision for a world without fossil fuels. A world where people live simply and abundantly, where they know their neighbors, and where their food comes from, where the economy exists to serve local communities rather than to generate profit. And where people and the vital systems they depend on are prepared to respond to and bounce back from whatever challenges or shocks might impact their communities. The word transition refers to the changes our communities must make in order to survive and thrive in these uncertain times. It’s a model that started in the UK in 2005 and went viral spreading to more than 1200 communities and 44 countries and 17 languages around the world.
These are some of the transition's core values. We believe that local action can change the world. We believe in the power of positive vision and the future, I'm sorry, we believe in the power of having a positive vision of the future and unleashing collective creativity to realize that vision. We believe that rebuilding a sense of community is vital to local resilience. And we organize in a way that is grassroots decentralized and bottom-up. This allows work to happen quickly without the sort of bureaucracy that has stalled national and UN processes from taking action on climate change which I learned a lot about living in DC. We like to say that if we act alone it will be too little, if we wait for governments acts it will be too little too late, but if we come together to act as a community it could be just enough just in time.
We also believe that if properly planned for and designed it is possible for our communities to be more fulfilling and abundant while using fewer resources than we currently consume.
And the main design tool use for this ambitious goal is permaculture. How many of you have heard of permaculture before? Awesome. And how many of you have studied or are practicing permaculture? I like to think of us as Emergency Planetary Technicians. Permaculture is an ecological design approach based on the way natural systems work which enables us to work with and learn from nature rather than working against it. For example in permaculture instead of planting monocultures or using pesticides and herbicides we strive to create diverse ecosystems that are haven for pollinators. We compose organic waste into nutritious soil. How many of you compost the majority of your food waste? Alright. If you only take one thing away from this talk please start composting. Food waste that goes into landfills produces methane gas, a greenhouse gas that's 21 times stronger than carbon and is a significant contributor to climate change. In permaculture we also use fossil fuel technologies like this chicken tractor to fertilize and till the soil for us.
So permaculture started as the final project for a two-year, I mean, I'm sorry, so transition started as the final project for a two-year permaculture program at a community college in Ireland in 2005. A group of students and their professor Rob Hopkins who is known as the founder of the transition movement used permaculture design principles at the community scale to come up with a plan to get their entire community off of fossil fuels. Permaculture is based on three main ethics, care for people, care for the planet, and fair share or return of the surplus. So let that sink in for a moment. What if every decision we made was based on those three ideas. How well does it care for the earth, how well does it care for people, and does it share resources equitably. In addition we have 12 design principles listed here. A few my favorites are use small and slow solutions, use and value renewable resources and services, produce no waste, use and value diversity, creatively use and respond to change, and design from patterns to details.
Nature creates using patterns. In permaculture we look for patterns and then use those patterns to inform the projects we want to design. And today since we are trying to build community resilience we look for what resilient communities have in common. Before I change slides does everyone see the pattern? Yeah, pretty cool.
Okay so here's a list of patterns of resilient communities that I've come up with based on my own experience during this work. Resilient communities have healthy ecosystems. They have food energy and economic systems that are as locally oriented as possible. Community stewardship of common resources like land and water. Neighborhoods that are designed for people not for cars. People share a sense of community and connection to their place. There is an openness to new thinking and ideas, diversity is valued. And the community is governed by participatory democracy by that I mean citizens are actively engaged in their local government, the decisions and processes that they make. And that government officials are responsive to community needs.

Right now there are very important conversations and decisions being made about sustainability within our local governments. How many of you go to city council or planning meetings to weigh in on what's being discussed? Alright we need to see a lot more hands up there, especially young people it's really important that we participate in local government even though sometimes it can be very boring because it's important. Sometimes I go to meetings just to remind my elected officials that of how much is at stake and that they have power and a role to play in making decisions that affect my life and just to let them know that I'm paying attention to what they're doing and that I'll be back if I don't like that they're decision making.

Okay so now that we have a sense of the patterns that are found in resilient communities we can apply those patterns to our most vital systems to see what types of projects and practices help build resilience. I'm just going to give you a small taste of all the amazing work that is happening in the country. There's also a lot of great work happening around the world and I'm not going to have time to get into today.
Some of these projects are organized by transition groups and some aren't but they all share the same values and patterns.
Alright let's start with our food system. We want to be creating local and regional food systems with ecologically regenerative practices that reconnect humans to nature, improve public health, and alleviate the disastrous impacts of industrial agriculture. Here are a few examples of what that looks like in practice. On top on the left we have a nine month intensive training program for aspiring permaculture landscapers and farmers at a place called the communities, the permaculture skill center which is right down the street from my house in Sevastopol, California. Below that we have a community seed garden which is also in Sevastopol where we grow, save, and share local organic heirloom seeds that are adapted to our microclimate. Taking back control of our seeds is one of the most important things we need to do to have resilient food systems. In the middle there is a picture of Eggleston community orchard were neighbors decided to plant a community garden and fruit trees on a vacant lot in the neighborhood in Boston where there had recently been a shooting because they wanted to transform that space into a place of healing. Below that's my friend Don Hall who started Transition Sarasota Florida, he organizes an amazing gleaning project where volunteers harvest leftover produce from organic farms and in a few years have been able to donate more than 100,000 pounds of produce to local food banks. Below that's my sister and a good friend of mine the one who first introduced me to permaculture who are using fossil fuel free technology to prepare beds for planting on a small permaculture farm in Ukiah. And then on top on the right we have growing power which is an amazing urban aquaponics farm in Milwaukee, Wisconsin in a low-income neighborhood. Aquaponics grow fish and produce together in the same system in a way that's very efficient and also very beneficial for all the different elements involved. And then below that's a work party in Sonoma County were community members came out to help plant a community garden. That's something we do often and something that I really love is having work parties.
to install community gardens.
When we're looking at how to improve our water management we should be thinking about community stewardship of water as a precious life-giving force, using creative, low-tech solutions to conserve, capture, clean, and store it. For example rebuilding topsoil and working with the natural contours of a place to improve infiltration of water into the soil. This system on the left is also at the permaculture skill center it has an intricate system of waterways that catch runoff from the highway, clean it, use it to water their food force, and then replenish their 5 acre site as well as the surrounding wetlands.

Rainwater and graywater collection systems are also important technologies. This is a picture of a rainwater catchment tank and graywater systems recycle and redirect household water from laundry sinks and showers into gardens and into the soil instead of going down the sewer.

And finally we should be using composting toilets which are currently illegal in many places. 27% of household water uses from toilet and essentially we are pooping and peeing in clean drinkable water for no good reason. The great thing about composting toilets is that not only do they conserve water, they also turn poop into soil. At my house we harvest year end because it has a lot of nitrogen and its great fertilizer for fruit trees. And as some of these things seem to offensive for you to start doing right now at the very least, "If it's yellow let it mellow", does everybody know what I mean by that? Alright, do we need someone to explain yellow let it mellow? Okay it just means that you don't need to flush it if it's just pee.
For our energy system we should be thinking about ways to cut our energy use as much as possible and then switch to small-scale decentralize renewables for the energy we really do need. This picture on the top left is from a workshop on how to build passive solar cookers that was hosted by Transition Charlottesville, Virginia. And the image in the middle is from powerdown week which is the weeklong festival organized by Transition Milwaukee, Wisconsin to encourage people to practice living and having fun without using electricity for example by hosting candlelight dinners.

The image of windmills is from a new project called transition streets that we're currently testing in 14 communities around the country and it's basically a tool to bring neighbors together and do-it-yourself home energy retrofits that reduce energy and water use and save money. And the solar panel on the bottom left is again from the permaculture skill center it's near my house, its great spot that's why I have so many pictures of it. What is important about this picture is that it's not a huge solar farm owned by a multinational corporation and built on a clear-cut forest. It’s part of a distributed renewable local system and it also provides shade to ducks, chickens, and children on the farm so it's well integrated into their system. And then the bottom right is a picture of my favorite sign at the anti-fracking rally in Sacramento a year ago. Was anyone there at that? Yeah I think a clean, decentralize, renewable, energy system would be an incredible gift to humanity.
In my community 57% of carbon emissions come from personal transportation vehicles and overall long-distance flights are more carbon intensive than almost anything we do. On top of the environmental impact car travel is also a form of social isolation. Isolation is an epidemic in our society that contributes to loneliness, depression, and other mental and physical health issues. We drive around in our own little boxes and we fly across the world to go on vacation somewhere far away without being connected to the people and the place where we live. So we need to be getting out of our cars and planes and into our communities. I know that's hard, I'm experiencing it myself trying to make that transition. It means I'm going to have to take a train three days to Wisconsin to go my friend's wedding and I'm not going to go to her destination bachelorette party but it's a great way to bring this issue up with people to explain your decision-making on things like that and it just feels like the right thing to do. In many cases communities need to be redesigned into beautiful, walkable, bikeable neighborhoods that are places where we want to explore, relax, and meet each other.

So on the top is a workshop we hosted in Sevastopol last fall as part of a ten-day festival called the Sebastopol Village building convergence. The workshop is on intersection repair or how to design intersections to reduce car traffic, improve pedestrian and bike access, and serve as a community gathering space. And the bottom is a bike parade that was organized by Transition Culver City in Southern California. So lots of awareness around bike use and bike safety.
Our economy is at the root of the mess were in but there are also many hopeful signs of economic transformation. There's an important role for locally owned businesses that use resources responsibly and help build community wealth through good paying jobs. The example on the top left is Evergreen Cooperatives in Cleveland, Ohio which operates three large worker cooperatives that provide sustainable good paying jobs including solar installation, energy efficiency, local food production, and a huge hydroponic greenhouse, and a green industrial laundry service that has contracts with the university and hospital.

There is also a role for projects like the community currency and Brixton the UK. This is the one non-US picture included just because I thought it was really great that they have a picture of David Bowie on their local currency. Community alternative currencies are used alongside or in place of the national currency and help keep wealth in the local economy. And my guess is that someday soon you'll have Butte bucks here. Equally if not more important we need a cultural shift in what we value away from material wealth toward connection to each other and to nature. We can realize this through projects like this local tool library started by transition group in Seattle. On the bottom left this repair café hosted by Transition Pasadena in Southern California where people bring in things that are broken to have them fixed so that they don't have to go buy new things. I think one of the old men in that picture worked on the Mars Rover and someone was so amazed that he then helped them fix their toaster, so exciting.

And we also need to be having different types of conversations about our economy and what is the role of the economy. If you're interested in learning more about this piece in particular you can check out a report by the Post Carbon Institute called
weaving the community resilience and new economy movement. I helped write it after doing interviews with a bunch of new economy leaders around the country and it’s got a lot of good examples of this work.
We also do a lot of worker and reskilling, homesteading, do-it-yourself projects essentially to relearn the skills that we need to become resilient. Things like building, and canning, and growing our own food. In my house we make almost all of our cleaning supplies and toiletries ourselves because it's fun, it's cheaper, and that we know we are not putting toxic chemicals into our bodies or into our environment. A great place to get started is reading this book, The Good Life Lab Radical Experiments and Hands-on Living, it's about a couple who left their jobs on Wall Street to become homesteaders in the desert in New Mexico and they're essentially self-sufficient now, it's a really good book.
There a lot of other things that are part of this great transition that I don’t have time to go into today but include things like housing, and land access, healthcare, reintegrating the wisdom of elders into our society, and collaborating with local government. On top is a picture of my friend Obie who is helping out in a natural building workshop that we did. And below that is an example of participatory democracy, it’s a community conversation that we organized about how to make our community more resilient and then we use that, took that the notes from that, turned it into a policy memo and gave it to our city general planning commission for our ten year general plan update. And then this last picture is our mayor helping put in a food forest at our City Hall.
All of the changes that we talked about rely on having relationships with each other and a sense of community. We need to find ways to build community, to share with, learn from, and support each other, to heal and to build political and economic power at the grassroots level. In Sevastopol with my community we do this often through potlucks, through working together and getting our hands dirty together, and we also have a lot of dance parties. I think I'm on the dance floor but you can't see me in this picture. We all work really hard but it's important to remember to celebrate, that's a key ingredient of transition, you have to remember to celebrate.
Building resilient communities is necessary, it's possible, and it's fun. And as a fellow young leader in this work I invite you to step into your power and take action. So are you ready? Yeah, like yeah! Alright, okay great.
To help you get started I want to share a few tips that I've picked up along the way that have been helpful to me. The first thing maybe the most important is to pay attention, we have got to start paying attention to what we eat, what we buy, what we support, and the impact our decisions and actions have on the planet. There are a lot of distractions that make it hard to do this so try to get rid of the distractions and to me that means I don't watch television, I don't pay attention to the mainstream media, I don't pay attention to celebrity gossip because I don't think it's a good use of my time, energy, or intelligence given the state of our planet.

Become eco-literate. Learn how ecosystems work and how human activities impacts ecosystems. There a lot of good ways to do this but one one thing to do is to start studying from culture. I also encourage you to learn about privilege or what is known as the invisible backpack which is a set of privileges each of us carry with us that aren't based on merit but are based on our race, class, gender, sexual orientation, etc. It's important to understand privilege simply in order to be a good human especially if you want to try doing community organizing or movement building because it's going to show up in your work. It's a lot to go into right now but you can start by just researching the invisible backpack and see where it takes you.

It's okay to cry, I cry a lot, you can ask my boyfriend. When he starts to really understand and feel into what has happened on our planet and what is happening now it's probably going to lead you to a lot of sadness and grief and it's important not to bottle that up. Align you values and actions, learn how to live simply. Like I mentioned to many of the changes we need to make require us to consume less and to shift our values away from material wealth which means we need to learn how to live simply. It's a practice that takes time and it's not only good for our planet but it's also very fun and liberating.
It's important to skill up in collaboration, listening, and communication because we're shifting away from the age of hierarchy into the age of cooperation which means we need to improve our ability to communicate with each other and to work together so we can be effective organizers. Don't act from a place of fear or anger instead act from love. Acting from a place of anger or fear is really reacting and it impairs our ability to make good decisions and it's very unpleasant for the people who are trying to collaborate with. You can be motivated by fear and anger but be sure your actions come from a place of love.

Reach out to your elders. One of the most important things I learned in my early 20s which was very exciting to my parents is that I don't know everything. Our elders have so much to teach us and so much wisdom to share and currently a lot of that is lost because we tend to institutionalize our elders instead of honoring them and integrating them into society and an important role. And finally don't give up. You're going to encounter lots of resistance and closemindedness and apathy and you probably already have but don't let it deter you. Use it to gain perspective and to motivate you because as a species we can't afford to give up and we need your energy and your brilliance and your spark to succeed.
Okay so if you want to learn more I would suggest starting by checking out the Transition US or Transition Network which is the international hub for transition. Their websites and as well as their newsletter and Facebook pages, I manage those and I find really interesting things to share so I highly recommend it. You can also read my blog and I’m going to post all of the notes and the slides and the resources from this presentation there so that it's easy to find if you want. And I have some stickers with that website if that helps you. Also resilience.org is a really good website for finding resources to get started doing this. One particular that I recommend is the Guide to Building Thriving, Resilient Communities as well as that Weaving the Movement report that I mentioned.
Okay and if you ready to take action there are a few ways I recommend getting involved. One is joining the Community Resilience Challenge which is happening May 16-17, it's a weekend of coordinated action where people all over the country do things like start a compost pile, plant a community garden, organize their neighbors to have a conversation about clean energy, and what is really cool is that it was started by CSU, Chico alum who wanted me to sign his regards and make sure you all participate in the community resilience challenge. Last year we had more than 17,000 actions across the country and it shows what is possible when we all act and we're all doing this together.

Another thing you can do is start a transition initiative in your town, or your community, or your campus. I suggest starting by reading up on transition online and books, getting a better sense of it and then if you have questions you can email me or contact our office and we can help you get started. That essentially means you would be kind of organizing and promoting these types of projects in your community.

So yeah if you have any questions or want to get involved you can you can email me, marissa@transitionus.org or info@transitionus.org. I get a lot of emails but I will get back to you as soon as I can.
And in closing I want to offer my deep gratitude to offer everything you’re already doing to make the world better and for coming out today and for listening to this talk and especially to the conference organizers for making it possible. Thank you.

And I was talking really fast because I was nervous and now we have a lot of time for questions. Do we have any questions out there?

**Audience Member:** What got you started on permaculture?

**Marissa Mommaerts:** Well I really, I noticed when I was in college I started growing plants in my dorm room that it made people really happy to be around plants and so I share them as much as possible. And then I got my master’s degree and I went and worked in DC in climate policy and realized that it was really ineffective and I didn't think that what was happening at the national and international level was enough to get us out of the state of kind of a planetary emergency that were in. And the more I learned about permaculture the more I thought wow this is a great way to address issues like food insecurity, water insecurity, while healing our environment and just kept learning about it.

Does anybody have a question?

**Audience Member:** Compared to traditional agriculture how much space does permaculture use?

**Marissa Mommaerts:** It uses less space for the amount of overall output that you get because you're integrating a lot of different levels. You have tree crops, and you have
shrubs, and you have a groundcover, and you have veins, and you have all these different things integrated. So you're not like producing as much of one crop on the same space but you're producing a lot of different crops in the same amount of space.

**Audience Member:** First thanks a lot for coming here. So a lot of the suggestions you've made, some really good for taking those of us who are inclined or fervor in moving us into action. But so if we take part in this May resilience day a lot of our neighbors may not be already inclined and ready for action. How do we move them from not inclined at all to at least inclined and maybe act if we are taking leadership.

**Marissa Mommaerts:** That's a great question. It helps to get to know your neighbors. We're having this issue in my household because we live in a rental house so we gotten to know some of our neighbors but not all of them. Our neighbor across the street is spraying roundup like right near our garden but we know that just going and saying hey we don't like it that you're doing this because we have this permaculture thing going on over here and we think it's bad, is not going to be very constructive. So one great thing to do is to share with you neighbors if you are producing something at your home like plants or cookies or whatever just share, start a friendship. And then you can lead by example and you can have important conversations about why you're doing it is what you do in a way that isn't alienating because there is a sense of trust their, would be my suggestion. And it's hard but we all need to be having these conversations with everyone we know. I still haven't like you know clearly gotten it across to my parents exactly what it is I do and there are still things that we butt heads on but it's you know. If we are all having these conversations with everyone things are going to shift little by little.
There's one in the back.

**Audience Member:** We're from Sac State and we're wondering how you recommend implementing these ideas into bigger cities.

**Marissa Mommaerts:** There is a lot of great examples of it happening in cities including, I mean probably every urban center has some awesome work that you can learn from. Gardening in every piece of available land, gardening in vacant lots and medians and things like that. You can still be doing home energy and water retrofits. LA is doing a lot of this work in a big way because they are concerned about not having water so they’re like really proactively promoting graywater, rainwater, planting trees, and improving water attention in the soil. They’re learning that they don’t want all the water to go into the storm drain and then out to the ocean because they need that water. So is there so many things and I feel like often like with our local government they’re really progressive but they don't have all the answers on how to deal with drought and the emergency water regulations that are coming down to them from the state. They want help in figuring out how to implement it. Same thing with carbon reduction I think, if we bring solutions to our local governments and say we also have a lot of people mobilize who will come to the meeting and show support and go out and implement it. That’s really helpful and that’s what we been doing in Sevastopol. But yeah there's tons of examples of urban permaculture. My teacher, Toby Hemingway just wrote a book on urban permaculture.

**Audience Member:** Hi. I was curious have you, well you probably heard of probably the food not lawns movement. And Tori over here, I’m also from Sacramento, brought
up the you know how do we implement permaculture, how do we make this change where we are. I know that Sacramento just had a new city law passed where it allows homeowners to sell produce that they grow on their own property. So that's a huge opportunity right there but what are other ways that you have found to implement on a personal level, agriculture, and your own I guess sustenance.

Melissa Mommaerts: I integrated into almost every aspect of my life and again it's like a slow gradual learning process. Everything from biking, and you know recycling water, and being conscious about our energy used, to going out in my community and doing a lot of different types of community organizing. Like I mentioned we make a lot of our own stuff at my house for a number of reasons. Mostly it's fun, it's really fun, once you get started homesteading it's like an addiction but a good one. But specifically related to food other than you know growing what you can in your own garden and it's probably not realistic to think that you're going to be self-sufficient in city lot or even, unless you really have a lot of skills and experience. Right now I'm focusing more on creating an ecosystem that is resilient in itself so that when I leave because I'm a renter the ecosystem will continue to thrive. So some of its food, a lot of its just plants that are really good for the environment and create habitat but can take care of themselves without a lot of human pampering. But definitely supporting the local food system, making sure that what you buy is coming from local farmers and you know how it's being grown. What I don't eat from my house I get like from my neighbor next door, and the produce stand that's down the street, and the CSA which is a little bit further and so on. But most of my produce and fruit and things like that I can get very locally. So just supporting local farmers who are using good practices is one of the most effective things we can do I think.
**Audience Member:** Well my question had to do with front yard with graphs and watering. I mean if you're living in a neighborhood where you got a front yard you've got a lot of neighbors who have you know beautiful front yards. How do you deal with that issue without offending the neighbors and what do you, you know what I mean? How do you feel about being that person in the neighborhood who's not going to water the yard or wants to plant something else other than grass?

**Melissa Mommaerts:** I feel great about it. We're those people in our neighborhood and I think you could do it in a way that's actually like tidier than ours is but we have sheet mulched at all. So sheet mulching is great.
Oops.
This picture on the bottom is a sheet mulching project at a local health center because they were aware of the water use and also the pesticide use that they were using on their lawn. And the fact that they're using a lawnmower to mow it and people have asthma are going to the Health Center. So we covered it all with cardboard and then wood chips, that's a really easy way to do it, it makes the grass compost in place and then it's conserving water and it's creating really nice soil so you can then grow things in it. And in my yard we have a ton of cool things growing in it. We're also planting fruit trees in the front yard with the idea of being that even when we don't live there we can still come back and harvest fruit from those fruit trees and our neighbors can do it too. We're creating basically a common space in our front yard whether our landlord likes it or not but our landlord is pretty cool so they're mostly okay with it. And I think it's okay to be the one who stands out and if your neighbors are upset you can say this is why we're doing it because California has one year left of water and watering our lawns just doesn't seem like a good idea right now. But it's definitely going to cause some tension and that's why we have to learn how to communicate better and collaborate better so we can deal with those tensions instead of just like staying inside of our house and being afraid to go out and do anything and make change. And also we get a lot of people stopping by just as they drive passed and see us out there working who are so interested in it and then we get to meet our neighbors.

**Audience Member:** Can you elaborate a little more on why you felt like your efforts in D.C concerning policy were ineffective.

**Melissa Mommaerts:** Yeah I think that there are a lot of really well-intentioned people who are doing that work in D.C on, what I was working on at the time was
population and climate change and how human population growth is related to a lot of these different issues which is a really controversial and difficult thing to work on. But I think in general there is a lot of people who really care but there is so much bureaucracy like red tape slowing things down and then also a lot of, I mean we live in a politically polarized climate right now so it’s really hard to get certain types of work done. And I think people are afraid, my experience was that a lot of people I worked with were afraid to challenge the status quo because they were benefiting from the positions that they were in. I left DC because I got to work with world leaders, presidents of countries, I got to fly to some of the most beautiful places in the world and stay in five star hotels, and I could see how that would be kind of intoxicating or like something that would be hard to give up and I didn't want to become one of the people who was afraid to speak up for what needed to happen because I was afraid of losing the benefits of my job. That was just my experience but and when I was at the Earth Summit in Rio I saw like a really dark side which was the Vatican actually sabotaging the work that we were doing to promote human rights and women's rights and reproductive rights. And I was like wow so this is what actually happens, this is unacceptable and I want to go work in local communities where I can see change happening. So I'm a little disillusioned from that experience.

**Audience Member:** Hi, earlier you mentioned about your experience with public policy. I think you plan out a lot of good things with public policy itself but you know with your experience and your seminar here today. But have you considered working with the governors around the country and promoting public policy and ecosystems within the states themselves because it seems to be that you got PG&E corporations and you got the water resource boards are very kind of like become more incorporated like big corporations to benefit for their use and for their corporations.
So I figured that you, incorporate with that into these corporations themselves, these ideas about ecosystem and permaculture. I think that is a very important aspect.

Melissa Mommaerts: Yeah I think you're definitely right. I think there's a lot opportunity to work at the state level. I don't have the skills or experience in that particular level of government but it seems like in California certainly with what we are dealing with there needs to change happening at the state level. I would say with transition, we're not organized enough to mobilize at that scale yet. But I think for example the Oakland Resilient Cities Initiative that I mentioned earlier there are three cities in the bay area Berkeley, Oakland, and San Francisco who all have support to do resilience planning and I think they have enough hopefully organization and political power to bring some of these things to the state level.

We have time for one last small question if anybody has one.

Audience Member: Thank you for your wonderful speech. I felt the love and I was crying too. Without getting too graphic, how would you advise incorporating a composting toilet into my house hold?

Melissa Mommaerts: Well I think it depends on where you live and yeah. Because it is illegal in a lot of places, you should probably look into what the local guidelines are around it. I would love to see better policy around composting toilets. We have a permanent one at Occidental Arts and Ecology Center in Sonoma County which could serve as a model for permitting for other places. But yeah I'm not just going to actively endorse something that's illegal, it's up to you. But they're really simple you can have just a bucket, a seat, you put in sawdust, and you have to do it very carefully.
though to process it to make sure that it's not you know contaminating and spreading harmful bacteria. But a lot of people in Sonoma County do it, a lot of permaculturalist especially but they know how to do it well. You just have to let it compost for I think 2 years, and you wouldn't use it on food crops. But it's coming. Composting toilets are the future, I'm sure of it. So. Great, awesome, well thank you very much.