

EARLY BIRD WEEKLY



NewbergRotaryEarlybirds.org

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Last week was Stove Team International with Forest Resener.

Forest comes to us from Eugene, OR. He is a musician, an environmentalist and outdoor enthusiast, and enjoys finding creative ways to connect donors with families they support.

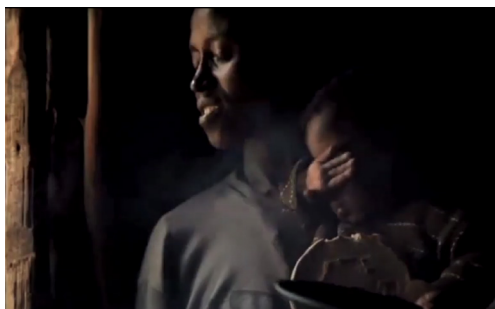
He had reached out to a few Oregon clubs to share about Stove Team's work. He spoke to Linda when he reached out to us. She sent him a picture of her own experience a few years ago with a family before/after stove made in a factory started by Stove Team. It's exciting to see these connections by chance.



Cooking by open fire is among the world's greatest health issues yet hardly anyone knows about it. It's also an environmental issue with family kitchens in half the world's homes emitting more black carbon than all the world's cars and trucks or factories.

As seen on NOVA, three billion people cook and heat with biomass (wood, dung, charcoal, agricultural waste) in their homes with open fires. That smoke is directly responsible for two million deaths every year ... mostly women and children.

Most mothers, with the smallest child in her arms or on her back, are exposing themselves and their infants to the equivalent of three packs of cigarettes a day.



Each ton of charcoal requires ten trees. "The forests are just vanishing."

But there is a solution that reduces smoke by 95% and black carbon emissions. And it reduces fuel consumption by 50%.

So, what's the best way to design a stove to reduce smoke and improve performance? Teamwork and collaboration of researchers, designers, engineers, and business leaders to get the right stove into the hands of women in developing countries.

As daunting as eradicating polio has been we need to get a hundred million stoves into the kitchens of a hundred million families.

Nancy Hughes lost her husband, a family doctor, to cancer in 2001. "I had to figure out what to do with my life. So I joined Rotary." She volunteered for a medical team in Guatemala. They asked, what can you do?

"Well, I don't know. I'm a mom." So what do they do but put me in the kitchen. I was horrified.

We were there as a team of 120 physicians, nurses and support personnel. The babies were too small to be intubated with tiny tubes down their throats so choked with creosote. Babies died.

She volunteered again, and again. On the third year she was in the kitchen still. A young woman asked Nancy to delay dinner to thank the team. As a two year old she had fallen in the open fire. Sixteen years later her hands were still burned shut. "Your team has opened my hands."

"This is the stupidest thing I ever heard." Nancy said to herself. "People are cooking inside their homes with a campfire?! These homes are about the size of my bathroom!"

She came home to the Rotary club she'd just joined. "Do you do stuff about things like this?"

So she hustled 10 of her friends and said, "Come on. We are going to Guatemala to install stoves. We're going to be called the Stove Team to go along with the Medical Team."

"So, these people came with me and I thought we were hot stuff."

No, Frank, the pun was unintentional.

"We put in 120 stoves and I thought, "Yeah, we done it!""

"Then I went home and found out that Guatemala alone had a need for 6 million cook stoves."

"So, I kinda stopped doing that." Then she learned the leading designer of Rocket Elbow Cookstoves lived 20 minutes away from her. He knocked on her door, "You can't stop doing what you're doing!"

With a little tongue in cheek, "I'm over 60. I can do what I want!"



Naturally she was disheartened to know what a big issue this really was. That she and her small group of friends couldn't do more than a hundred stoves a year.

Larry Winiarski is one of the designers of the [rocket elbow cookstove](#) over 30 years ago and still in use today by most woodburning stove project around the world.

Larry convinced Nancy to visit El Salvador with him. Together they designed Stove Team's first cookstove, the Ecocina, in 2007. It was designed to be manufactured with local materials by local people reducing sourcing costs and keeping money within the local economy.

There was also the issue that Nancy, in her mid-60s, had no desire to become owner of a factory in El Salvador.

Stove Team provides the guidance and support for local businesses to run on their own. They currently support enterprises in El Salvador, Guatemala, Nicaragua, and Honduras.

Stove Team helps clubs write grants. The factories are started and maintained by volunteers who are coming down from the States on trips curated by Stove Team.

To date, that's 33 trips with over 500 volunteers and distribution of over 76,000 cookstoves.





And, because most families average seven people, that math works out to almost 600,000 people impacted directly by Stove Team's efforts.

The NOVA piece mentioned three billion people cooking on open fire stoves. The World Bank study contradicts this number pushing it to about four billion. In other words, about half the world's population. That also pushes up the number of deaths per year to four million, mostly from cumulative smoke inhalation. Like chain smoking. That's double the number of deaths caused by AIDS and malaria combined.

Naturally, the lungs are the only things to suffer. Right behind are the heart and the eyes. Then there are the obvious dangers of burns from open flame and ground level hot surfaces.

The World Bank also estimates the [economic cost of open fire cooking is over \\$2 trillion per year](#).

How is such a dramatic number even possible, you might ask.

No, no one is writing checks worth trillions of dollars. But, as we all know, time is money. Time spent foraging is not spent employed or becoming educated.

The greatest numbers bear out in damage to physical health followed by climate, and local economies.

Flavia is an example of health impact. Flavia (blue shirt) is 72 years old and was suffering from an eye infection from cumulative smoke damage. And this is how much wood she has to collect every day just for her and her daughter.

It goes without saying that she also suffers neck problems.



More on the topic of wood collection. Because open fires are, by definition, un-contained, the heat and smoke go everywhere wasting huge amounts of energy. So feeding that wasteful fire can easily take 20 hours out of a family's week.



And who gets to do the foraging? Kids, because they can't earn wages. That also means education takes a back seat to eating.

All these factors contribute to the concept of energy poverty. In other words, a family can be held in poverty by all these factors. Conversely, something as simple as an efficient stove could mean a family escapes poverty.

For those families well off enough they can afford to pay for wood, an efficient stove can reduce their total monthly expenditures by a whopping 25%.

Climate Change: Stove Team was conceived over ten years ago as a humanitarian effort. Since then we have learned how much more it means than merely saving children from being burned.

It's reducing the impact of smoke inhalation and making huge strides in the fight against climate change.

All these unfiltered, open fires are emitting CO2 and black carbon.

Black carbon is considered a climate change accelerant. Its small particles float up into the atmosphere, then fall with the rain onto the snow and ice. This causes the snow and ice to absorb the sun's energy rather than reflecting it making it more likely to melt faster.

An affordable and simple solution is providing cookstoves.

We've seen the Ecocina, Stove Team's first stove. The stove in Linda's pic is actually called the Ecoplancha (eco griddle), a larger, square/rectangle with a larger cooking surface.

This stove also installs with a chimney so all the smoke leaves the home and it reduces total smoke output by 90%. The stove becomes a permanent fixture of the

home and is installed by a local skilled worker paid by Stove Team or the local project for a cost of about \$75.

One study suggests that each of these stoves saves 15 tons of CO2 emission over its life span, the same as the annual carbon footprint of the average American.

After construction comes education so the family knows how to use and maintain the stove to maximize its life.



The challenge remains in scaling the model to reach the most people. By engaging local partners we learn more about local resources and building on their own excitement. And putting ourselves out of a control position.

Remember Flavia? She was among the first to receive one of the Justa stoves.



This is Avida, the new owner of the partner factory in Nicaragua. She purchased it about a year ago as a first time business owner and is so excited to make improvements to it and watch it grow. Stove Team supports her.

Before I run out of paper ... Deforestation. More people born into poverty, gathering wood is all they've known for all of time. That takes a massive toll on forests that can be halted by education and ambition.

Only a mom? What can you do?