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## Bend Biomedical Working to Improve Medication Distribution for Poor & Diseased in India



JONATHAN PRATHER AT THE HURCO MILLING CENTER | PHOTO COURTESY OF BEND BIOMEDICAL

by **RONNI WILDE** — CBN Reporter

Jonathan Prather, Ph.D., a biomedical engineer, started his nonprofit company in November of 2019 because he says he wanted to make an impact in the world and to be able to see the fruits of his labor.

Formerly an assistant professor of medicine in immunogenetics and transplantation at Oregon Health & Science University, Prather moved to Bend in 2009 to be closer to his family, and started his own outcomes research and biostatistics company, Bend Biomedical, LLC in 2010.

"In November 2019, I realized I had been pushing paper for 30 years!" he says. "I envied engineers who could see a finished product. One civil engineering friend could appreciate their work by seeing a bridge they had built, and one of my best friends makes biomedical instrumentation." Desiring a change, Prather, who earned his doctorate in biomedical engineering from Duke University, decided he wanted to manufacture drugs for sick people in poor countries. "I converted Bend Biomedical LLC to just Bend Biomedical. On a single day, our outcomes research company was dissolved, and a not-for-profit pharmaceutical company was founded."

Prather recruited Amanda Swick, Bend Biomedical's outreach coordinator, and Linda Goodwin, Ph.D., now a Board of Directors member, and says the three of them hammered out a mission statement, carefully crafting it until it said exactly what they wanted it to say: "Our mission is to manufacture, package and distribute high-quality, low-cost medicines to treat and prevent serious diseases in neglected populations around the world."

Prather, who serves as executive director of Bend Biomedical, says the trio was naturally drawn to Neglected Tropical Diseases because they are primarily serious

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## New Hospice House Nears Completion Centerpiece of \$12 Million Bend Campus Expansion "Oasis of Tranquility"

by **SIMON MATHER** — CBN Feature Writer



PHOTO | BY CASCADE BUSINESS NEWS

The finishing touches are being applied to the new 14,600 square foot Hospice House — an "oasis of tranquility" for end-of-life care — on the Bend campus of Central Oregon's leading home health and hospice provider, Partners In Care.

The centerpiece of a \$12 million expansion plan which

also includes remodeling of the organization's existing adjacent building on Wyatt Court, the facility features 12 suites all with abundant natural light and homelike furnishings and amenities, with space for family members to stay overnight.

Each private room, with a lantern tucked into an alcove

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## Nonprofits in Central Oregon Serve as Lifeline for those in Need

by **RONNI WILDE** — CBN Reporter

It can be said that Central Oregon is a region full of people who care about each other. There are countless numbers of nonprofits here that tackle everything from essentials such as housing, food and clothing to addiction recovery and mental and physical health screenings for adults and children. For those in need, there are a multitude of resources available to lend a hand.

For this edition of *Cascade Business News*, we checked in with a number of local nonprofits to see how things are going in light of the struggles the past year has brought. The services that these stellar organizations provide are needed and appreciated more than ever before, and for that we say thank you! Here are what a few of them had to say.

### United Way of Central Oregon

"This is a very challenging time for our organization right now," says Ken Wilhelm, executive director of United Way of Central Oregon. "Our community fundraising season has started, and we're now in our second year of having to do most of it virtually. We haven't been able to hold an event for more than 18 months. All our board and committee meetings are conducted via Zoom. Many community members are

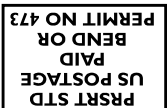


VOLUNTEERS ARE THE LIFEBLOOD OF NONPROFITS IN CENTRAL OREGON | PHOTO COURTESY OF BETHLEHEM INN

still really hurting. The urgent, growing houseless situation is distressing evidence of that."

Compared to last year at this time, Wilhelm says the immediate influx of federal and state emergency relief funding has shifted to longer-term recovery efforts and investment in economic development, job creation, affordable housing and

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# Bend Biomedical

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diseases in poor countries. “They are a group of tropical infections that are common in low-income populations in developing countries. They historically have not been prioritized by drug companies, hence the term ‘neglected.’” There are 20 of these diseases identified by the World Health Organization, he says. “The more I read about them, the more I think these diseases aren’t really neglected, because now we have very safe and effective medications for many of them. We should say people are neglected, not diseases.”

Prather and his team found a resource, The Task Force for Global Health in Atlanta, Georgia, which is a group of experts on diseases of poverty around the world. “We wrote them about pharmaceuticals and Neglected Tropical Diseases, trying to figure out what was needed. We bothered them daily via email,” says Prather, adding that they attempted a few different

projects involving blister packaging of medications at the start that weren’t quite what The Task Force needed. “We liked the idea of blister packaging so much, and as a biomedical engineer, I was thrilled, so we asked them what we could blister package for Neglected Tropical Diseases that would actually be needed.” He continues, “They told us about India and Tanzania, two places where the people don’t trust drugs shared out of an open bottle and given to them by the government.” The problem, he says, is that the tablets are distributed from shared bottles and sometimes given out in folded paper without labels or instructions. As a result, the patients don’t trust the health officials or the drugs they are giving out. Because the drugs are being given out for free, the makers are unwilling to change the packaging or otherwise improve products, and they are reluctant to allow the product to leave their direct control to be blister packaged elsewhere. “The solution is to manufacture low-cost, single-drug blister packs... and fund them by government and foundation grants and donations. We plan to improve the products at the same time; for example, updating dosage form, maximizing shelf life and adding labels and instructions on the blister packs about drug purposes and side effects.”

Prather says he predicts that the making of blister packaging of solid dosage forms of medications for global health is what will define Bend Biomedical as a nonprofit. “Blister packs are compact and easy to handle, tamper-evident, climate tolerant

and trustworthy.” Although they cost a little more than bottled medications, he says they are already used for two huge problems in global public health in India: leprosy and tuberculosis. “I looked on Medline for articles about tropical diseases in India and found a great one written by doctors on the ground in Nagpur, India. They explained why the drugs should be blister-packed for better adherence. I contacted two of the authors, and they are now on our Board of Directors.”

Prior to founding Bend Biomedical, Prather garnered an impressive resume: He has completed projects for Duke University (Affiliated Physicians, Biomedical Engineering, Community and Family Medicine, Hospital Administration, Infectious Diseases, Perinatal Medicine, School of Medicine and Student Health); Oregon Health & Science University (Cardiology, Gastroenterology and Hepatology, Immunogenetics and Transplant Medicine, Nephrology and Hypertension and Urology); the Agency for Health Care Policy and Research; the National Cancer Institute; the National Library of Medicine; Pacific Northwest National Laboratory (Epidemiology and Biometry, Hanford Dosimetry); the U.S. Agency for International Development; the U.S. Air Force; the U.S. Department of Energy and others. His past research involvements include radiobiology research sponsored by the Department of Energy, the Missouri Women’s Health Study (a project for the National Cancer Institute investigating the risk of lung cancer from exposure to residential radon) and he has been involved with the U.S. Agency for International Development Malaria Network Database, among others. His work in over a dozen medical specialties has contributed to more than 80 research publications or other manuscripts, 14 invited talks and many reports provided to physicians and surgeons.

Prather says his Bend Biomedical team chose lymphatic filariasis as the first disease to create blister packs for because of the magnitude of the problem, and because the U.S. Agency for International Development (USAID) has funded this need in the past. Lymphatic filariasis is a poverty-related disease that impairs or permanently disables millions of people every year, he says, often resulting in life-long physical pain and social stigmatization. Helminths (parasitic worms), he explains, carried by mosquitoes, cause the disease by primarily attacking the lymphatic system. The infection



DR. SITIKANTHA BANERJEE (FAR LEFT), BEND BIOMEDICAL BOARD OF DIRECTORS, SUPERVISING ACTIVITIES OF FIELD WORKERS DURING MASS DRUG ADMINISTRATION FOR LYMPHATIC FILARIASIS | PHOTO BY DR. KAJARI BANDYOPADHYAY, BEND BIOMEDICAL BOARD OF DIRECTORS, NAGPUR, INDIA



THIS IS HOW LOOSE DRUGS ARE DISTRIBUTED DURING MASS DRUG ADMINISTRATION FOR LYMPHATIC FILARIASIS IN INDIA | PHOTO BY DR. KAJARI BANDYOPADHYAY, BEND BIOMEDICAL BOARD OF DIRECTORS, NAGPUR, INDIA

usually begins in childhood, with approximately one-third of children in endemic areas infected before age five. “We have a long list of projects we’d like to do,” says Prather. “There is no shortage of neglected populations in the world. But we were tipped off by the Task Force about India. These people are very poor. Most live in rural areas or urban slums.”

To date, Prather says the team has identified four potential funding sources to pay for the projects: A grant from USAID, which they are currently working on; private foundations; government donations, such as from India; and public donations. “We are not reinventing the wheel. The World Health Organization handles most of the drugs for Neglected Tropical Diseases, like lymphatic filariasis. There is a supply chain already established.” But the number of drugs requested from the local healthcare workers and sent by suppliers of the free drugs — most of the time big pharma, he says — is not enough. “I know this is a good idea and much needed because of all the people volunteering to help on it. Also, the doctors in country are excited. We are now 17 people, all volunteers, because we are not funded yet.”

Prather says Bend is a good location for his nonprofit because it has a substantial presence in pharmaceutical and biotech. “Being able to meet a colleague over coffee is a huge benefit to us, especially when our colleagues are the best in the world at what they do,” he says. “Seran Bioscience is allowing one of its scientists to sit on our Board of Directors, and Lonza is the primary service provider in our current USAID grant application.”

Currently, the team is working toward getting the first blister packs printed in English, because in India, there are 40 million English-speaking residents currently infected, and 28 million infected in Nigeria who speak English. Moving forward, Prather says they hope to print packets in Swahili for the 6 million infected in Tanzania.

The Bend Biomedical Board of Directors will have its first official meeting in November, Prather says. “We will be half in-person, and half via Zoom, assuming it meets the requirements for COVID. Otherwise, we’ll all be online via Zoom for the two-hour meeting.” He says that for those considering starting a nonprofit, his advice is this: “Don’t be proud. Ask people for help. They will help you!” In his case, he reached out to SCORE, a large network of free volunteer small-business mentors, which he says was a wise move. “Thanks to David Gast (of Central Oregon SCORE) for teaching us the fundamentals of running a small nonprofit and giving us insights on everything from how to keep emails concise to easing board politics.”

[bendbiomedical.org](http://bendbiomedical.org)

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