

His battle weapon? Sunscreen



KENT SIEVERS/THE WORLD-HERALD

For Gary Madsen, his new company that aims to make sunscreen more effective against aging and cancer is the culmination of decades of biotech work — successes, failures and more than a dozen ideas moved to market.

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A startup backed by UNMC takes aim at cancer and aging with advances in skin-care technology

There is a man in Omaha who is plotting a Banana Boat revolution.

Do not be afraid: The revolutionaries will be peaceful and in fact invisible to the naked eye.

But if Gary has his way, news of the revolution will soon be plastered across the city, or at least on bottles in one aisle at Kohll's Pharmacy. It will soon ring out from the cosmetics ads in your bourgeois glossy magazines.

This revolution might keep our faces wrinkle-free. It could keep an untold number of us from getting the most common type of cancer.

This revolution, my friends, in a word: sunscreen.

Yes, sunscreen.

"This antioxidant stuff is hot," Gary Madsen says. "What we're doing is a definite advancement in science. It's a definite advancement in human health."

So OK, Gary's new company, which plans to make sunscreen more effective against both aging and harmful UV rays, isn't the sexiest startup ever. But for Gary, it's the culmination of decades of biotech work all over the country — successes, failures and more than a dozen ideas moved to market.

And his new startup, backed by the University of Nebraska Medical Center, might be the spark that lights a local nanotechnology explosion.

Here's how: For years now, we have known that antioxidants are a way to guard against aging skin and possibly certain types of cancer. But much of the existing antioxidant science is in fact junk by the time it reaches our bodies through drugs and dietary supplements.

Most of those antioxidants aren't potent enough to do much of anything. Or they are manufactured in such a way that the body can't convert and use them correctly. The antioxidants might be

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SOME HIGHLIGHTS OF UNEMED'S ACHIEVEMENTS LAST YEAR



A brush set with interchangeable tips for lab technicians.

» Elegant Instruments, which was formed when a student met an inventor at the 2012 Innovation Week awards ceremony, a year later launched a line of research tools. The Versatool has an ergonomically designed handle with an integrated knife and interchangeable tips using a magnetic coupling system.



This is Trak Surgical's freehand, sensor-guided surgical saw.

» Trak Surgical, which is developing a freehand, computer-guided electrical bone saw, attracted state investment and continues to fine-tune its prototype. The startup company based in Omaha is expected to eliminate the need for expensive jigs and improve the success rates for joint replacement surgeries.



Keshore Bidasee has broken new ground in diabetes research.

» Researcher Keshore Bidasee found the suspected cause of various organ failures and dysfunctions associated with diabetes and devised a way, in one treatment, to stop the damage and repair some of it while lowering blood-sugar levels.

» Researchers Geoff Thiele and Michael Duryee for years studied a biomarker related to inflammation. Last year, they brought in practicing cardiologist Dan Anderson, who saw how the biomarker connects to coronary artery disease. The trio now are working to use the biomarker to build a simple blood test that could help manage heart disease long before harmful symptoms surface.



Cardiologist Dan Anderson, left, with researcher Michael Duryee, part of a team tackling heart disease.

Hansen: Funding needed for product

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legit. But the delivery process to the body renders them worthless.

Enter Vinod Labhasetwar, a one-time UNMC researcher who now does research at the prestigious Cleveland Clinic. While in Omaha, Vinod developed a new technology in which nanoparticles can carry a wide array of enzymes into the body.

Gary started as entrepreneur-in-residence last year at UnMed, a UNMC tech company, after a long career in biotech production.

He almost immediately started thinking: Can we put Vinod's breakthrough to use?

Which is how we get to sunscreen.

Sunscreen makers for a while now have made white sun-blocking substances like zinc oxide clear by shrinking it into nanoparticles.

But ProTransit Nanotherapy, a company co-founded by Gary and Vinod, plans to manufacture potent antioxidants that can be delivered through the skin when you apply your Banana Boat.

They could also be put in cosmetics and anti-aging creams that millions of people use.

The financial possibilities are tantalizing. Skin care is a gargantuan, \$16 billion industry, and the fastest-growing part of that industry is skin care that purports to slow the aging process.

Imagine if they give the product a cool name — for hypothetical purposes, let's say it is SkinShield — and then license it to a couple of major skin care companies?

"Estee Lauder has already called," Gary says. "They were very interested."

And he's already looking toward the post-skin care possibilities. Gary wants to make enough money off the first product to develop more products using Vinod's technology that could help victims of strokes and heart attacks.

There are, of course, a couple of hurdles.

The first: They still have to figure out if the technology actually works. A clinical trial using skin tissue is underway.

The second: money. UNMC will let the new company use its nanotechnology manufacturing space, and the Med Center and the state have ponied up some \$175,000 in grants, but Gary says he needs (gulp) \$1.5 million.

Which is why Gary stood up at a podium at UNMC's demo day, pitching the product to an auditorium full of doctors and researchers, private investors and me.

It is fun to watch him up

there, in a starched shirt and a conservative tie, and think about the stereotypes we place on our 21st century entrepreneurs.

Gary doesn't look like Mark Zuckerberg, though he could pass for his Danish uncle. He shows a simple PowerPoint presentation. No fancy video clips or dancing graphics or explosions.

He's selling us a vision of the future, but that future does not involve the next iPhone app.

Gary's future is based on his past: decades in labs since he graduated from Creighton's medical school in 1981. A dozen-plus new products, including breakthroughs in allergy testing and how we identify genes.

"To me, product development is a march, a march toward the product launch," he says. "You can throw some hype in there, that's good, too, but hype doesn't get you very far.

"Too much fluff and not enough substance, and investors see right through that."

Which is why I think Gary will probably find that \$1.5 million under a rock, or maybe in the couch cushions of some of this city's richest residents, to fund his sunscreen revolution.

It should work because Gary is selling the simplest story of all. An undeniable truth.

We're not getting any younger.

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**Vinod
Labhasetwar**