

SCOTTSDALE Airpark News

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Virginia G. Piper Cancer Center
at Scottsdale Healthcare

Daniel Van Hoff, MD, FACP

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Scottsdale's Cancer Team Stops at Nothing

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Scottsdale Is Ground Zero in Fight Against Cancer

UNIQUE PARTNERSHIP RELAYS RESEARCH,
CLINICAL TRIALS AND OUTSTANDING PATIENT CARE
INTO A UNIFIED STOP-AT-NOTHING TEAM

By Emily Soccorsy

There's a race going on in Scottsdale. It's not a triathlon or marathon or bicycle race. For those involved, this contest has all the urgency of the race to the moon. It involves acts of courage, endurance and cutting-edge science.

It's the race to find effective treatments for cancer—and to end the disease affecting 11.7 million Americans, the disease responsible for 1 out of every 4 American deaths.

The team in the lead identifies themselves with a collection of acronyms: TGen, TD2, SHC, VGPC. But what they do, who they are, is a partnership of world-class scientists, clinicians, physicians, nurses and healthcare advocates working nearly round-the-clock, leveraging the entire human genome to fight the big C.

Their most novel weapon is the ability to blow through the bureaucracy that has plagued longstanding research centers. Equipped with the tools to individualize treatments for patients based on their own cancer cells, this partnership has the ability to relay those treatments to patients within days of discovering them.

"It's really putting together the whole package and that's what's going to make us the leader in the whole world," says Dr. Stephen Gately, president and chief scientific officer of TGen Drug Development or TD2, located in north Scottsdale.

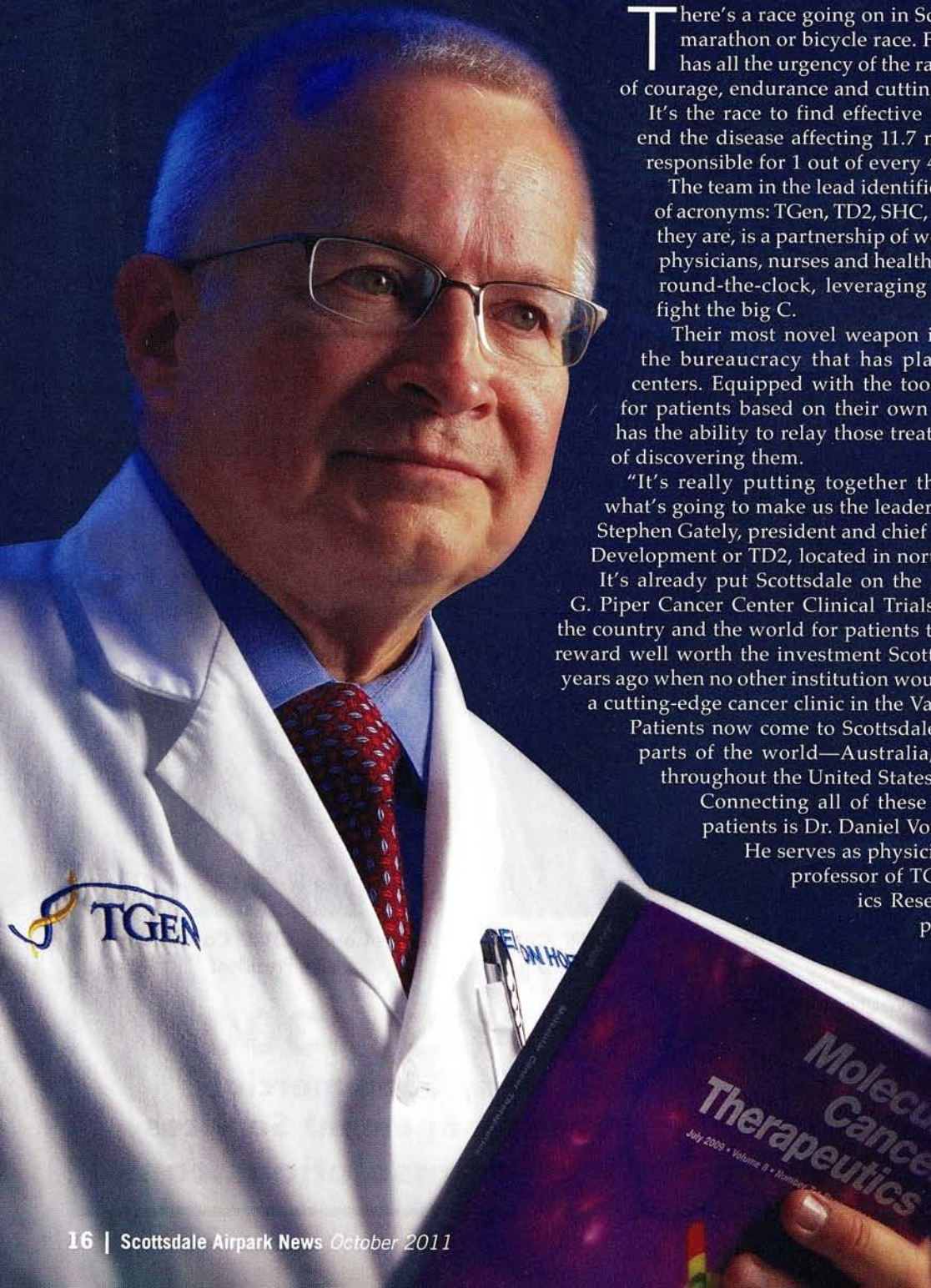
It's already put Scottsdale on the map, specifically the Virginia G. Piper Cancer Center Clinical Trials, as one of the best places in the country and the world for patients to receive cancer care. That's a reward well worth the investment Scottsdale Healthcare made seven years ago when no other institution would agree to partner on creating a cutting-edge cancer clinic in the Valley.

Patients now come to Scottsdale for treatment from far-flung parts of the world—Australia, Europe and Asia, and from throughout the United States.

Connecting all of these acronyms and treating these patients is Dr. Daniel Von Hoff.

He serves as physician-in-chief and distinguished professor of TGen, the Translational Genomics Research Institute; executive vice president and director of TD2;

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Dr. Daniel Von Hoff,
Scottsdale Healthcare

CLINICAL TRIALS

The Virginia G. Piper Cancer Center Clinical Trials typically works with patients who have already received a first-round treatment elsewhere and are seeking further treatment for advanced cancers. Treatment in the clinic is covered by most insurance, a fact not recognized by many potential participants. The clinic is accessible to all. To find out more call 480-323-1339 or email clinicaltrials@shc.org.



and chief scientific officer of the Virginia G. Piper Cancer Center Clinical Trials Program at Scottsdale Healthcare.

And while he understands the big picture: “There’s no question, the cure to cancer will be a genetic one,” Dr. Von Hoff says, his daily motivation is simple.

Getting patients the care they need—immediately.

“You’ve got to have it now, when there is somebody sitting in front of you,” he says, his gray-green eyes locking to emphasize the point. “With our very active patient involvement, you see it everyday. You want to try to do something, right then, not [say] ‘OK, it’s good for the future.’”

One recent success born out of this team of Scottsdale experts will soon be published in the *Journal of Clinical Oncology*.

It pertains to the discovery of a vulnerable part of pancreatic tumors referred to as the SPARK target. TD2 identified and tested a drug to hit the SPARK target, increasing the survivorship for pancreatic cancer patients from six months to a year, on average.

“It shows that the survivorship of patients with stage four metastatic pancreas cancer has doubled over what the agent gemcitabine does alone,” Von Hoff says.

Without treatment, a patient with the diagnosis has a three-month survival.

While doubling one’s lifeline sounds like an accomplishment, Von Hoff isn’t near satisfied.

“It still isn’t what we want, but it is an advance against the disease and it really came from targeting that we did at TGen,” he says. “I’m glad our patients had a shot at it first.”

TGen is now giving the rest of the world its shot, as it coordinates an 840-patient expanded worldwide trial of SPARK, based right here in Scottsdale.

“What we are trying to do is to build on that; find out what else could we add,” Von Hoff says.

The conglomeration is also making steady advancements against pancreas and lung cancer as well as other advanced or rare cancers. In July, the partnership announced promising results from a breast cancer drug being tested in the clinic that was effective in significant shrinkage of tumors.

So the pace clicks on, not in a steady trot, but at a rapid clip, and runs in several directions at once.

Lindsay Thomas, director of Oncology Services at Scottsdale Healthcare, has seen this firsthand. A 25-year veteran of Scottsdale Healthcare, Thomas works alongside TGen, directing cancer care at the Virginia G. Piper center.

“What typically takes a long time in academic centers ... it could be 14 years before it ends up with the patient, we can turn around the time to get that into a phase 1 study in about four weeks,” Thomas says. “That’s what makes us unique. We are more agile, we can quickly get that to happen, which is very important from the patient’s standpoint.”

For cancer patients, the clock does not stop ticking. It may unexpectedly accelerate on a fatal path at any moment.

"We're talking about cancer patients, we're talking about timing issues," Thomas says.

But science takes time, particularly at the genetic level. Once seen as a roadblock, the Scottsdale team has approached it as a hurdle. Drawing on its collective strength of collaboration, it is leaping the challenges of genetic-based care.

"We've taken a lot of patient's cancers, and we're sequencing total whole genomes," Von Hoff says. "We just finished three patients' pancreatic cancers, sequencing every gene. We do that both for the person's normal DNA and for their tumor DNA and then we're able to examine what are the differences. We do have some pretty exciting new findings in that area."

To provide perspective of how great a task this is, Von Hoff offers a visual.

Imagine collecting the contents of an entire law library, and shredding it. Then visualize putting it all back together. That is the task of sequencing a cancer genome, Von Hoff says.

"We use the ASU supercomputer to do that," he says. "It's a huge tour de force that takes 12 weeks. It's 3 billion base pairs." One person's heart beats 3 billion times in a lifetime. The cost of sequencing one patient's cancer is \$157,000.

It's science on a massive scale, but it's done for the individual.

"The new coming thing in cancer care and chemotherapy is this targeted approach," Thomas explains, describing how cancer treatment once meant supplying one drug that did well against breast cancer to all types of breast cancer patients and hoping it would work for as many people as possible.

"Now it's more about what are your specific tumor characteristics," Thomas says. "That's the whole way cancer care in general is going, and that's fabulous for patients because it means better response rates, less side effects and better response times."

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ECONOMIC IMPACT

TGen, TD2 and the Virginia G. Piper Cancer Center Clinical Trials have a big impact on Scottsdale's economy.

- ▶ **\$4.3 million** – direct annual economic impact on Scottsdale in 2009 from TD2
- ▶ **\$26 million** – total economic impact on Scottsdale from all TD2 affiliated companies
- ▶ **\$239 million** – estimated total economic impact by TD2 in 2015
- ▶ **\$77.4 million** – annual economic impact of TGen provides in Arizona
- ▶ **\$321.3 million** – annual economic impact of TGen by 2025
- ▶ **106** – number of jobs generated by TD2 and affiliated companies
- ▶ **1,080** – number of jobs generated by TD2 and affiliates by 2015

Source: Tripp Umbach, independent economic research firm in Pittsburgh

Meanwhile, TD2 is churning away with promising new drugs.

"We see when the drug works best and when it doesn't work, and we align that to patients that have the same DNA," Gately says. "We want to find the right drug for the right patient, every time."

When it works, the results make the patient happy, the TD2 team happy and the clinic staff happy, too.

"We love win-win scenarios here," Gately says.

The Scottsdale partnership approach is the future of cancer care.

It stands in stark contrast to the static laboratory paradigm of the past, where scientists hypothesized, tested and then made their way through an arduous process to bring treatment to patients.

Von Hoff says the Scottsdale partnership differentiates itself as people who are doing science as safely and rapidly as possible so they can apply it now.

"That's an unusual thing, rapid application with a sense of urgency," Von Hoff says. "I think that's because of a constant exposure to patients and their needs and their family members. These are not patients, these are people."

Gately agrees.

"We go to lunch with the patients we are trying to help. We get daily reminders of the people we have to help," he admits.

It's what Von Hoff demands of his team. That and a stop-at-nothing focus on patients.

"Patients' comfort and treatment come first," Von Hoff says. "The patient is always right."

Von Hoff makes total symptom relief—be it pain, nausea, digestive issues, fatigue—his goal for each patient.

"There's always something you can do for them," Von Hoff says. "We want them to live with quality and quantity."

Scottsdale Healthcare's Thomas echoes those sentiments, and points out research has shown patients on a clinical trial do better than those who are not involved in a clinical trial.

"If you are a clinical trial patient, you are watched very carefully and since you need to document everything happening with that drug you have a team at your disposal that are asking you questions and making sure every little symptom and every little hiccup is addressed and resolved," Thomas says.

The oncology team at Scottsdale Healthcare makes sure all other concerns are addressed as well.

"We have the gamut [of services]," Thomas explains. "Within the Virginia G. Piper center we have people to do all the work for you, and let you just put your energy toward your disease and taking care of yourself. Let us deal with all of the other things and let us help you and your family as you go through this journey you never wanted to be on."

Services include counseling, nutritional therapy, exercise, insurance coordination and family outreach, among others. These services are coordinated by a master's level cancer care nurse coordinator individually assigned to each patient.

The results of this collaborative Scottsdale partnership have been impressive: dozens of studies, breakthroughs occurring regularly, remissions, and responsive cancer treatments that provide more time for patients to live their lives at a higher quality.

"We have the most clinical trials with the most new mechanisms of action," Von Hoff says.

"I do think cancer will be cured. There's improvement of survival already. Every week there's a breakthrough. I think having a group like this chipping away at it everyday, we're going to do it." ■

That Last

Precious Year

By Emily Soccorsy

Editor's Note: When we asked Emily if she'd be interested in writing our cover story, she told us about her family's involvement with Dr. Daniel Von Hoff and the TGen program at Scottsdale Healthcare. The business of caring for others, especially those grappling with fearsome diseases such as cancer, is intensely personal—for the patient, and their friends and family—as anyone who has been through the ordeal can attest. Yet that human element often goes missing in the media's black-and-white coverage of the science involved. We thank Emily for agreeing to share her personal story as well.



Judy Soccorsy, granddaughter Mercedes, and Emily Soccorsy enjoy a holiday gathering B.C., before cancer.

My mother, healthy her entire life, was diagnosed with cancer in 2009. She was only 62 years old. Had it been breast or lung cancer, we might have had more of a chance. But it was pancreatic cancer.

The American Cancer Society projects 44,030 people in the United States will be diagnosed with pancreatic cancer in 2011, and 37,660 will die of the disease. The majority of pancreatic cancer diagnosis will be metastatic disease. Like my mom's, their disease has already spread beyond the pancreas. Those patients have a 1.8 percent chance of living longer than five years.

For our tightly-knit family, and for me as my mother's only daughter, the diagnosis was shocking. She was never sick when I was a child. She had never smoked, she kept in great shape, she ate well.

We confronted the horrible statistics on pancreatic cancer mortality, then made up our minds it would not apply to our family. After my mom underwent successful surgery to remove the tumor and parts of her pancreas and intestine, she committed herself to a fight.

Six months of chemotherapy followed by six weeks of radiation left my mother depleted, but ever hopeful her work as the good and willing patient would pay off with a bye to that 1.8 percent.

After a holiday spent putting the past year behind us, 2010 dawned with fresh horror—the disease had spread again.

It was then my mother came under the care of the Virginia G. Piper Cancer Center Clinical Trial and Dr. Von Hoff.

The treatment at Dr. Von Hoff's gentle hands was a breath of fresh air. My mom truly seemed to be the only patient he saw, he and his team gave so much time and attention to her.

When she showed up with three, four and five in her entourage of friends and family, the team smiled, welcomed them all and brought

in extra chairs. When she ached, they aided. When my Dad sent 5 a.m. emails, they responded at 7 a.m. When my family needed another explanation of how the drug worked or why this seemed the best route to pursue, it was given, completely and thoroughly.

Dr. Von Hoff even gave my mom permission to fire him if they couldn't bring her chemo symptoms under control. But they always did.

That year brought treatment and travel, times spent with family and dear friends, enjoying life, sharing birthdays, anniversaries, Christmas celebrations and everyday moments of joy my mom used to refer to as "peak moments."

What a precious gift that year was to her, and to all who loved her.

But her treatments faded in their efficacy, and while she attempted new treatments in 2011, my mom did not benefit from them as we all wished.

In May 2011, she passed away in my arms.

Loving a cancer patient is tough, but it's nothing compared to being a cancer patient. It's a battering, relentless fight that never stops trying to beat you down.

So the type of care you choose, from whom, where and how you choose to receive it, is essential.

Those who find themselves taking on cancer need to ensure they select a cancer care team they are comfortable with. Seek out people who are enabled to bring the best therapeutic options to the table. Stop at nothing to find a team that will truly listen and respond to meet your needs.

I admired my mother so much before cancer came into her life. After witnessing all she did to fight, that admiration has expanded and swelled my heart. I am so proud she chose to fight.

When the end came, my mom told us she only had one regret—that she didn't have more time to love us all. ■