At the core of all scientific discovery is data: hard, factual information that can be reliably used to make well-reasoned conclusions — the information that, in the realm of medicine, drives the adoption of new drugs, novel therapies, and improved devices. Much of the data that brings about improvements in health care has its genesis on the laboratory bench; but it’s a long way from a discovery swirling in a beaker to a treatment making a difference in patients’ lives. For that crucial step, there’s the clinical trial, where, every day, the contributions of thousands of people — patients, providers, and administrators — bring forth new data on the safety and efficacy of the latest discoveries in medical science.

Leon Strader has traveled nearly 300 miles to Fletcher Allen Health Care every Thursday for the last seven months to participate in a clinical trial.

photograph by RAJ CHAWLA

by EDWARD NEUERT

the People behind Clinical Trials
on a Thursday in mid-April, a little before dawn, Leon and Pat Strader begin their day pretty much the way they’ve begun every Thursday since last December, after Leon received his lung cancer diagnosis. They awake at 5 a.m., quickly get washed and dressed, then start up the Camry and begin their long morning’s drive. From their Hannawa Falls home in New York state, about 30 miles east of the St. Lawrence Seaway, they travel northeast along Route 11 in a broad arc over the top of the Adirondack Park. Somewhere along the way, as the morning light settles in, they stop for breakfast at a roadside diner, and then head back out toward the bridge at Swanton, and down the interstate to Burlington. By the time they get to their ultimate destination, Fletcher Allen Health Care, where Leon will receive his chemotherapy at the Hematology/Oncology clinic, they have clocked more than three hours and 150 miles on the road.

As Strader checks in at the counter of the Hem/Onc clinic at the Vermont Cancer Center at UVM/Fletcher Allen, he takes on more than just the role of a patient showing up for weekly chemo. He is also one of the thousands of patients across the country who advance the cause of medical science by helping to test new treatments as participants in a clinical trial.

For Strader, the role of clinical trial study participant began with the suggestion of his oncologist, Professor of Medicine Steven Grunberg, M.D. “I liked his attitude. He explained that there was a new drug being tested which might help me, in addition to the regular chemo,” Strader says. He did not hesitate. “I figured there was no harm in trying, and a possibility it would give the cancer an extra kick. And it would help them learn more. Personally, I do feel sure it did some good.” He gestures with hands made rough by years of work as the superintendent of grounds at Clarkson College. Strader’s feeling is, of course, instinctive. The study he participates in, like most drug studies, is rigidly “double-blinded” to prevent any unintentional bias in the administration of the drug — neither patient nor clinician knows whether they are receiving study medication or the standard of care.

And the three-hour car ride? “I wouldn’t have it any other way,” says Strader. “This is where I feel I’m getting the most up-to-date care, so this is where I’m going to come, ride or no ride.”

Testing newly discovered therapies in humans is a critical step to bringing better care to the wider population. A carefully designed and conducted trial is the safest and quickest way to identify treatments that really work, and to gauge the level of their effectiveness; other observational trials allow medical scientists to address health issues in large groups of people in natural settings. Today, nearly 50,000 clinical trials are in progress across the country, according to the Center for Information & Study on Clinical Research Participation. At the College of Medicine and Fletcher Allen, the work of scientists and health care providers who are engaged in approximately 1,200 research projects is supported in full range of ways by the College’s Office of Clinical Trials Research (OCTR).

“We’re here to support the researchers, to help frame the policies around clinical trials, and to work with other entities on campus to help make sure our trials run as smoothly as possible and in full compliance with all the appropriate rules,” says Kimberly Luebbers, who has directed the office for the past two years. Luebbers, who is an R.N., has many years’ clinical experience and originally joined the OCTR in 2003 as manager. The office itself has existed for the past six years, but clinical research at UVM has a decades-long history. For more than forty years, UVM has been the site for one of the General Clinical Research Centers supported by the National Institutes of Health.

“We have many, many stakeholders,” says Robert Shapiro, M.D., Ph.D., the OCTR medical director. “We serve the public, to make sure studies run correctly, and that the public understands their value. We help investigators pursue their research ideas. We help the regulatory agencies, in that we make sure things are running in compliance with their rules.”

Perhaps the first clinical trial in medical history took place in the mid-18th century, when James Lind, a surgeon with the British East India Company, tested the effect of citrus fruit consumption on the alleviation of scurvy, the dread disease caused by vitamin C deficiency, that at the time caused the deaths of thousands of sailors on long sea voyages. Though it had been casually noticed that sailors who ate citrus fruit had less of a chance of getting scurvy, that knowledge was not widespread. Lind conducted a very systematic experiment on several groups of sailors, rigidly controlling their diets while onboard ship, and proved the effectiveness of a citrus fruit-laden diet.

Today, medical researchers in the U.S. conduct their research according to the strict guidelines of the Food and Drug Administration and other government agencies. Most trials are organized by the phase system, in which treatments are first tested on a small group for safety and tolerability (Phase I), then in larger Phase II groups where clinical efficacy is determined. Phase III trials involve the largest numbers of participants and are designed to give a much more definitive judgment on efficacy before a treatment is approved for general use.

“This is a complicated system, and with good reason,” says Luebbers. “The OCTR is here to help researchers and study participants come together within this safe framework.” For researchers, that means helping them plan the protocol — the document that describes the objectives, methods, and procedures of a study. One of the services the OCTR provides is to liaison with UVM’s Institutional Review Board (IRB). IRBs have become fixtures on campuses across the nation in the past 30 years. The IRB is a committee of local researchers and lay people, appointed by the university’s provost, who volunteer to review all studies in order to ensure that the welfare and rights of human study participants are thoroughly protected. For researchers it works with, the OCTR facilitates IRB approval and helps turn a plan on a piece of paper to a protocol that the IRB can consider.
into an actual scientific clinical study.

For Leon Strader, the familiar face that represents his clinical trial is probably that of Laurie Chassereau, R.N., the clinical research nurse who greets him and Pat every Thursday morning before they come into the examining room and brief them on the details and review the consent document. The consent document explains to the potential participant the purpose of the study, the methods that will be used, and all the potential risks and side effects that might occur.

Research nurses coordinate many aspects of the clinical trial, in addition to providing the clinical skills for various procedures — EKG’s, phlebotomies, patient assessments and gathering of vital signs — as well as the processing of blood samples and other lab specimens. They also help in recruitment efforts by coordinating advertising. “We’re kind of a jack-of-all-trades,” says research nurse Kathy Ferland. “As a nurse, you have to know a little bit of everything, depending on the study. The variety makes it challenging.”

Lois Diggs’s journey to the clinic involves just a short drive, but it is part of a long effort to fight the colon cancer she was diagnosed with five years ago. Fighting cancer is something this Lieutenant Colonel does in her typically quiet, committed way. A veteran of 30 years’ service with the U.S. Air Force, Diggs, who lives with her family in Jericho, Vt., has been a member of the Vermont Air National guard for the past three years, where she is a detachment commander.

“I wanted to do whatever I could to fight this cancer,” says Diggs. “So this trial seemed like the right thing to do. If I can get one more thing to help me, well, then I’m going to try it.” If she was not battling cancer, Diggs would probably be fighting a different fight. “Oh, I’d almost certainly be in Iraq, or have been there,” she says. Her son Sean is serving in the army in the Iraqi city of Ramadi.

“It’s been a pleasure and an honor getting to know Lois,” says Jim Fingar, clinical research coordinator on the study Diggs is enrolled in. Fingar and his fellow research coordinators play a vital role in turning the protocol into a working study. Coordinators help put together the consent document and much of the paperwork needed for IRB approval. Once the study is open, they work on patient recruiting, a task that sometimes literally put them in the “hot seat.”

“That’s our term for the particular work station in the clinic that the physicians can visit or call with any research questions they have,” Fingar explains. “Six research coordinators rotate this duty. This set-up allows the doctors to quickly locate assistance to get a patient enrolled in a trial. The person in the hot seat can locate any required study related information or forms. Typically we need to check the patient’s eligibility, gather information to help advise the patient about potential studies, or to actually allow the patient to be consented for a study.” If the person in the hot seat is not able to provide all that is needed, the hot seat person tracks down the colleague who manages the relevant study. “The physicians have found this system helpful for getting patients enrolled,” says Fingar. “After all, with more than 80 open trials in the Hem/Onc area alone, the physicians can’t possibly keep all the details about eligibility in their minds. So it’s really helpful that they can just come around the corner or call the hot seat and see a coordinator.”

Fingar, who has been a coordinator for two years, finds the position “very busy, but also very satisfying. Coordinating the collection of data is a big thing. You have to get a lot of things right at a lot of different times.”

Two other clinical trial study participants are examples of the age range of people who take part in trials. Emma Baker, from Wallingford, Vt., is just 5 years old, and she absolutely hates having her blood drawn, but her visits every three months help study whether two medications in combination will help combat pseudomonas, a bacterial infection of the lungs that can be life threatening for children who, like Emma, have cystic fibrosis.

“I was told Emma was a good subject for this study, because she hadn’t tested positive for pseudomonas yet,” says Carol Baker, Emma’s mother. When Emma’s doctor (Assistant Professor of Pediatrics Thomas Lahiri, M.D.) told us about the trial I said ‘sure, we want to do whatever will help the research.’”

Study participant William Patten is, at 68, old enough to have several grandchildren around Emma’s age. The need to be there for those grandkids is part of what led him into a clinical trial. After years of intense pain, Patten had knee replacement surgery two years ago. He volunteered to be part of a trial that is testing a new type of replacement joint that will hopefully give recipients more lateral movement. A few years ago, Patten could barely walk. Now, he’s regained his range of movement and actively supervises getting his young grandchildren off to school each weekday in his Vergennes, Vt. home.

Patten does not know whether he received the new kind of replacement, or just the standard version. His study is a relatively small one — just 50 participants in all. He returns to the clinic every two years now for a morning of testing, and a long questionnaire administered by Kathy Ferland. “We ask him many questions to determine his quality of life, in addition to the physical data,” says Ferland, who has been a research nurse in the OCTR for more than three years that followed seven years spent as a nurse in the General Clinical Research Center. “My research experience is very broad, and I really feel very connected in this position, a part of everything that’s going on in a particular study. That’s very satisfying. And this study points out the broad nature of what we study. It isn’t just drugs, it’s also devices, and new techniques.”

Back in the Hem/Onc clinic, as the Thursday afternoon light slants through the windows, Leon and Pat Strader begin to gather their belongings and walk out to the parking garage to find their Camry and begin the long drive home. But first they say a warm goodbye to Laurie Chassereau. “I just can’t say enough about these people,” Leon says. “They really do take things to heart.”