The Registry Continues to Grow!

The Twin Research Registry at SRI International (TRR) is an active registry of fraternal and identical twins and other multiples of all ages. As of August 2014, there are now more than 3,800 active members, with 71 percent of them living in California. The majority are adults aged 18 or older. 14 percent are under age 18 and were registered by their parents.
Registered TRR members can participate in research studies to help advance science. Many of these studies offer a benefit such as free vaccinations or personalized health reports.

Current Studies: Research Volunteers Needed!

**Seasonal Flu Vaccines**: Identical and fraternal twins 12 to 49 are needed to help investigators better understand the genetic components of the body’s immune response to the flu vaccine. Participants will receive this year’s vaccine at Stanford Medical Center. A five-year longitudinal study is also planned for identical twins between 2-5 years of age. Recruiting starts soon for appointments in late August to early December 2014—please expect a call from Jill or Denise! Participating twins will be compensated for their time and travel, and zygosity will be determined. This is the sixth year that twins have been included in Stanford University’s vaccine studies.

**Smoke Exposure and Asthma Study**: This is a study about the environmental effects of tobacco smoke on the immune system. Identical twins who have been exposed to tobacco smoke (either as current or former smokers, or through exposure to second-hand smoke) and/or who have a history of asthma are needed for the study at Stanford University. Identical twins who have not been exposed to tobacco smoke and do not have asthma are also needed for the control group.

**In utero Smoke Exposure Study**: Non-smoking identical or fraternal twins of any age who have been exposed to tobacco smoke when their mother was pregnant with them are needed for this study at Stanford University.

If you believe that either of your parents smoked while your mother was pregnant with you please email us at twin@sri.com or call us at 800.SRI.TWIN so we can add you to our list. Thank you!
Whole Biome Seeks Twins for Obesity Study

Did you know our bodies are only 10 percent human, and that medicine focuses 100 percent on this 10 percent? Today, there is a growing revolution to treat the other 90 percent of our bodies: our microbiome. The human microbiome is made up of trillions of bacteria that live inside and coat the outside of our bodies. For decades, we have known that our balance of “good” and “bad” bacteria translates to our health, and many of us try to increase the good by eating more yogurt and taking expensive probiotics. However, our prolific use of antibiotics, antiseptics, and antimicrobial soaps to kill the bad bacteria is killing our good bacteria, too. Many scientists believe this is why diseases such as allergies, asthma, obesity, inflammatory bowel disease, and many others are on the rise.

Tremendous headway has been made over the last few years in understanding how the microbiome causes and cures disease. We are moving beyond yogurt and developing real, personalized therapeutics to change our individual microbiomes.

Scientists at Whole Biome (www.wholebiome.com) are teaming with Kaiser Permanente physicians to create new microbiome therapies for obesity. Studies have shown that the gut microbiome has a large impact on metabolism. It’s the gut bacteria that determine if the food we eat turns into fat or passes through. However, we also know obesity involves important genetic components. Twins represent a unique opportunity to gain insight into the role of the microbiome in obesity by controlling for the genetic variable.

If you and your twin want to partner with Whole Biome or learn more, contact twinstudy@wholebiome.com. Twins of different weights OR where one has Type II diabetes and the other does not are highly encouraged to join.

To learn more about the microbiome, check out NPR’s five-minute video at http://ow.ly/zWQ2f or read this recent review: http://ow.ly/zWQPH
Whole Biome invites you to join them in the microbiome revolution by contributing towards creating new therapies for obesity.

Selected participants will be asked to fill out a brief questionnaire, provide a microbial sample by mail, and maintain a simple mobile app or web-based diet log for one week. Upon completion of this phase, a subset of participants will be invited to continue on to future phases of therapeutic development. Participants will be compensated, and will get information about their personal microbiome and how it compares to that of their twin.

Future Studies

Female Twins Who Have Had Cancer:
Dr. Nathalie Scholler, SRI’s director of cancer immunology, will be seeking twins who have been diagnosed with cancer to study the innate immune response to this disease. Look for a questionnaire coming soon.

If you are female and have ever been diagnosed with cancer, please email us at twin@sri.com or call us at 800.SRI.TWIN so we can add you to our list. Thank you!

Folic Acid Supplement Study: Folate is implicated in the cause of a number of cancers, including breast, colorectal, pancreatic, and prostate cancer. The study’s goal will be to better understand the dose-response effects of folate supplements, and their relevance to cancer by conducting an intervention trial in adult monozygotic (MZ) twins. Dr. Robert Haile of Stanford University’s Cancer Center is writing a proposal to conduct an intervention trial using vitamins with and without folic acid to determine its effects on the body. If the study is funded, twins would be recruited in late 2015.

Celiac Disease Study: Stanford investigators are interested in studying celiac disease and related issues such as gluten intolerance.

If you think you may have celiac disease or have been diagnosed with it, please email us at twin@sri.com or call us at 800. SRI.TWIN so we can add you to our list. Thank you!
Identical Twins and Hair Samples:
In last year’s newsletter, we posted an opportunity for identical twins to participate in a study of their hair with the Forensics Department at UC Davis. Thank you to all the twins who responded—the forensics group got exactly what they needed. They have looked over the data and can easily see the difference between one twin pair and another, but need to do more thorough analyses to see how well they can distinguish between the twins in the same pair. A proper statistical evaluation is under way; results should be available soon.

In Utero Tobacco Exposure: To see if exposure to tobacco smoke while in the womb has an effect on the immune system later in life, this study looked at blood obtained from never-smokers before and after getting the flu vaccine (twins were included as individuals).

Previous Studies and Publications

When comparing people who had been exposed to tobacco smoke in utero (i.e., while their mother was pregnant with them) to those who had not been exposed, there were significant differences in the amounts of certain kinds of immune cells. Preliminary data suggest that in utero tobacco smoke exposure may affect immune cell responses even into adulthood. These results were presented in a poster, “Effects of in Utero Tobacco Exposure on Immune Cell Responses,” presented by Dr. Unni Nygaard at the 2013 Society of Toxicology annual meeting.

Natural Killer (NK) Cells: These lymphocytes (white blood cells) are an important part of the body’s immune system, but are not well understood. To learn more about the full range of diversity of NK cells, blood from five sets of monozygotic twins and 12 unrelated donors was
Analyses showed a large amount of diversity in NK cells and that genetics determined some ways the cells behaved and the environment determined other ways the cells behaved. A paper was published by Dr. Catherine Blish and colleagues at the Stanford University School of Medicine in the October 2013 issue of *Science Translational Medicine*. Read more at [http://ow.ly/zWOrK](http://ow.ly/zWOrK).

Stories from Our Twins

**Jim and Ron**: My twin brother Ron and I were drawn to the prospects of a first-time significant desert race, the Western TAC Half-Marathon. At the report of the starter’s gun, everything became kinetic as the field sprinted forward. The initial mile was a gentle decline, which invited a prematurely fast pace. By two miles, leg motion and respiration finally joined in sync. Ron moved smoothly ahead of my somewhat labored style. I was feeling frigid in a slight singlet that didn’t offer much insulation, and Ron was moving along easily in a bulky sweatshirt and huge stocking cap that spiraled up like a turban. He was more identifiable than a lighthouse at low tide!

Settling into a steady six-minute pace, I was slowly progressing through the field. At seven miles, to great surprise, I drew alongside Henry Rono, Kenya’s most famed distance legend. At the eleven-mile mark, Henry looked over at me and politely stated: ‘I must leave you now.” As he gradually surged away, my psyche searched the energy closets to make a pursuit. Somehow, body and soul rallied. Pushing the pace, I joined him again at 12 miles and he shouted “Simba!” At 13 miles, I spied brother Ron. As we swept by, he discovered his goal line sprint energy, and the trio of us crossed the finish line “ensemble”.

We were timed in a happy mediocre 1:22. That day, from a plaintive desert stage, many shared a mountaintop experience. Almost nothing rivals the communion of those who have paid the full price of every step. Fatigued but refreshed!
Harriet and Jean
excerpted from a Green Valley News article

Harriet and Jean are “mirror twins,” which occurs in about 25 percent of identical twins. This type of twinning often exhibits characteristics with reversed asymmetry. In their case, Harriet is left-handed, Jean is right-handed. In some mirror twins, the fingerprints are mirror images, their hair spirals in opposite directions, or they could have birthmarks on opposite sides of their bodies.

Harriet and Jean are always impeccably dressed—and dressed alike. How do they decide what to wear each day? “I should get to decide because I’m older,” Harriet says. “But Jean gets to decide what we’re going to wear, and I have veto power.”

Harriet, who lived 30 years in the San Francisco Bay Area before coming to Green Valley, was heavily involved in early childhood education—everything from Head Start to lobbying for higher pay for preschool teachers. Jean, who inherited her dad’s photographic memory, set up a library for an entire division of General Motors when she lived in Ohio for nearly three decades. But they count among their biggest accomplishments getting Walk Across Arizona rolled out at La Posada and in all of Green Valley. The annual event has one goal: Get people to think about healthy living, then take action. That’s been easy for them—Jean is a former cyclist and Harriet led backpacking trips in their youths.

“If we can be an inspiration to improve life, that’s what our family did,” Jean says. “We did things to make the community better.” Read more about Harriet and Jean at http://ow.ly/zWOpQ.
Meet Kari Nadeau

Dr. Kari Nadeau has been a friend and colleague of the TRR for many years. Not only does she see the incredible value of twins in the study of genetic and environmental influences on health and disease, but she also understands how wonderful twins are as the parent of two sets of them! Dr. Nadeau and the TRR have collaborated on research studies on asthma and her children have participated in other TRR-facilitated research.

Dr. Nadeau is an associate professor at Stanford University (full bio: [http://ow.ly/zWQtN](http://ow.ly/zWQtN)) and a world-renowned expert in allergies and asthma. Dr. Nadeau’s lab studies the specific cells in the immune system that are involved in allergies and what affects them. Their current study is on the effects of tobacco smoke on allergy and asthma. The hypothesis: exposure to tobacco smoke is associated with asthma in adults, and this association is mediated through changes in the DNA of asthma genes (specific to Treg and other T-cells). She hopes to enroll enough twins over the next three years to obtain results that could make an important long-term impact in the effort to intervene early in the lives of patients to decrease and prevent the burden of asthma induced by a preventable environmental exposure. Read a New York Times feature on Dr. Nadeau’s methods to help children with severe food allergies: [http://ow.ly/zWP5V](http://ow.ly/zWP5V) and a follow-up letter from Dr. Nadeau: [http://ow.ly/zWQN7](http://ow.ly/zWQN7)

If you are an identical twin with asthma and/or have had any exposure to tobacco smoke, either as a smoker or second-hand, and can make a single visit to El Camino Hospital for the assessment, please consider volunteering for Dr. Nadeau’s very important study.
Web Links of Interest

Emotional balance for twins (SF Examiner): http://ow.ly/zWPbH

Facts about twins (Huffington Post): http://ow.ly/zWPeX

Philadelphia school has 14 sets of graduating twins (Huffington Post): http://ow.ly/zWPxN


Newsletter Feedback

Tell us your twin story! Email us with interesting, fun tales and you may be featured in our next newsletter. Please include permission for us to share your story, and include pictures!

Green is good! Join the more than 2,000 Registry members who receive information from us by email, saving paper and trees. Send us your email address by contacting twin@sri.com. You will receive the annual newsletter by email, and occasional emails about new study opportunities. All information is kept confidential and not shared without your permission.

Past newsletters are archived at www.sri.com/twin.

Is your contact info correct? If you have moved or changed your phone number or your email, please let us know. When recruiting for studies, we want to make sure we have current information.

Thank you!

How to Contact Us

We need both of you: research opportunities are open to twin pairs only. If your twin has not registered, have her or him call us at 800-SRI-TWIN or email us at twin@sri.com.

Visit our website for more information at www.sri.com/twin and to register. Twins under 18 will need their parents to register: just call 800-SRI-TWIN.
We’re enormously grateful for our twins, 1,375 of whom have participated in studies that have led to important scientific findings and published papers.

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Visit our website for more information at www.sri.com/twin and to register. Twins under 18 will need their parents to register: just call 800-SRI-TWIN or download the registration packet from www.sri.com/twin.

Email us at twin@sri.com to ask questions, update us with a new address or telephone number, or just to check in with us.

You can call 800.SRI.TWIN. We check for messages daily, and will return your call as soon as possible.

For information about study opportunities, call us at 800.SRI.TWIN (800.774.8946).

Check out the SRI Twin Research Registry page on Facebook at www.facebook.com/TwinSRI.

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