

DNA testing may reveal more than consumers bargained for

By Catharine Wang, The Conversation

Aggressive marketing techniques and the popularization of “gifting” recreational ancestry tests has led more consumers than ever to the world of personal genetic testing. Yet, the recent arrest of the Golden State Killer suspect has heightened concerns about privacy and ethics because of the way law enforcement used a third-party DNA interpretation company to identify close relatives and hone in on a likely culprit.

The company, GEDmatch, is well-known among genetic genealogy enthusiasts. When consumers want to learn more about their relatives than previously revealed by commercial testing companies such as AncestryDNA or 23andMe, they can seek out third-party companies like this one for further interpretation of their DNA results.

But, in addition to clues about where your ancestors were from, DNA holds information about your own medical risks. Here, at the intersection of recreational genetic genealogy and personal health information, is where direct-to-consumer companies are generating some unintended spillover effects that can have personal consequences consumers may not be prepared for.

I approach this area from the medical side. My own work focuses on how people use genomic information for personal health benefits. In particular, I’ve looked at when and how people decide to undergo genetic testing, and how they understand and cope with their results.

The rise of direct-to-consumer genetic testing has led to a sometimes dodgy do-it-yourself world of genetics. It may

provide access to personal genetic information for the masses, but in many cases, individuals aren't fully aware of all they may find out, or how their data may be used.

When genealogy interest leads to a health scare

My interest in the unintended consequences of genealogy exploration started a few years back with a patient who sought help in interpreting data she received from a third-party company that suggested she was at increased genetic risk for breast cancer. Concern over what had been identified in the interpretation report ultimately led this patient to see a genetic counselor – a trained professional who can advise on the genetic risks for various diseases. The counselor eventually determined the result was nothing that warranted concern. This “false positive” case raised red flags for me.

I interviewed this patient to learn more about why she'd used this company (that I had never heard about previously) to learn about her breast cancer risk. It turned out she'd stumbled into the area of genetic testing for health risks due to an interest in genealogy. While watching Henry Louis Gates' PBS show “Finding Your Roots,” she saw an ad for one of the commercial direct-to-consumer companies that offered ancestry testing.

Once the patient learned her ancestry results, she also realized that an entire world had opened up in terms of other possible nuggets of information she could discover from her “raw” DNA data. So she purchased access to a third-party health app to interpret her raw DNA. It was these results – provided without consultation with a medical professional – which then led her to clinic.

Currently, there are many of these third-party apps or online services available to consumers. They're not regulated by the Food and Drug Administration since, as argued by the companies behind them, they just serve as a “bridge to the literature”

and only provide access to the scientific evidence base.

Wild West of raw DNA uploads

My colleagues and I surveyed customers of these third-party companies to learn more about their motives for exploring the raw DNA data they'd received from commercial testing companies. Approximately two-thirds of consumers we surveyed were highly motivated to explore raw DNA for ancestral details. Forty percent were interested in both ancestry and health information.

Sixty-two percent of our respondents used GEDmatch, highlighting the extent to which DNA data that are heavily protected by companies such as AncestryDNA and 23andMe are unguarded by consumers themselves. Many choose to freely upload that data in hopes of finding other relatives. Notably, almost three-quarters of consumers reported using more than one third-party company to interpret their DNA.

Some might argue these tools provide a beneficial service for consumers, particularly when it comes to learning more about their health risks. In cases where genetic risks are determined via clinically validated tests, it can be empowering. Angelina Jolie is the perfect example.

Yet, the validity of genetic tests that consumers have direct access to remains questionable. In fact, a recent article by scientists at one of the clinical testing labs that medical providers rely on reported that approximately 40 percent of results reported from raw DNA interpretation were incorrect. Thus, 4 out of 10 people are told they have a greater risk for a disease, when they do not. That's an exceedingly high number of individuals to stress out with a false positive result.

My ongoing work has found that "worry" is the primary driver for patients to seek out medical assistance in raw DNA interpretation. As such, this false positive rate has a

notable downstream burden on the healthcare system.

Social media sites like Reddit are filled with examples of consumers who are confused about how to interpret the reports generated from some of these third-party companies, which vary greatly in clarity and quality. Or, they have learned from a report they might have a BRCA variant that might confer high risk for breast and ovarian cancer, and ask other site users for help in understanding whether their result is real. It doesn't have to be this way; there are genetic counselors who specialize in interpreting these kinds of results and helping patients figure out what to do.

Genetic counselors, meanwhile, are frustrated. The message from commercial testing companies has led to unrealistic expectations from consumers about what they can learn about themselves. It's challenging for counselors to correct misconceptions, especially when they are met with resistance from patients.

The gift of DNA knowledge?

2017 was the year commercial direct-to-consumer testing exploded. 2018 may be the year users rethink the value of this gift, or at least how to use it. Once the genie is out of the bottle, it isn't going back. The Golden State Killer arrest is only highlighting that the ramifications of genetic genealogy and widespread use of third-party DNA sites are broader than consumers could have ever anticipated.

Catharine Wang is an associate professor of community health sciences at Boston University.

Folsom development could impact Tahoe drivers

By Tony Bizjak, Sacramento Bee

The most anticipated new housing community in the Sacramento region goes “vertical” next week south of Highway 50 in Folsom with the construction of model homes, followed by homes for sale.

Early buyers could be living on the oak-studded hillside by the end of the year, builders say.

The project site is massive at 3,300 acres, just south of the freeway and north of White Rock Road, between Prairie City Road and the El Dorado County line. It will contain nearly 11,000 homes and apartments, three public schools, two fire stations, a police station and 82 acres of office and commercial buildings.

Read the whole story

Nev. recreational pot sales reach \$41M in March

By Wade Tyler Millward, Las Vegas Review-Journal

Move over sagebrush, Nevada may have a new state flower.

Recreational marijuana sales topped \$41 million in March, the largest since legal sales began statewide in July.

That translates into \$7.09 million in tax revenue in March from marijuana, according to a state Department of Taxation release Wednesday.

[Read the whole story](#)

Winter popping up for holiday weekend

By Molly Sullivan, Sacramento Bee

You may need to bring your winter coat in Tahoe for Memorial Day weekend.

An unseasonably cool weather system is moving into California on Friday, the National Weather Service said.

There's a chance of showers and thunderstorms in the South Lake Tahoe forecast for Friday and into Saturday.

[Read the whole story](#)

TRPA recognizes those helping to improve Tahoe

The Tahoe Regional Planning Agency recognized four people May 23 for their commitment to protecting and enhancing Lake Tahoe's environment with Lake Spirit Awards.

People whose passions include building new paths and trails led the way in nominations this year, with improving mountain biking routes, creating new multi-use paths, and advancing pedestrian and bicycle safety among the interests of the award winners.

TRPA gives the awards, which were started in 2011, to people from the North and South Shores who are either citizens or agency representatives/environmental scientists.

This year's Lake Spirit Award winners are:

South Shore Citizen: Gavin Feiger

Feiger is a passionate bicycle advocate who has shared his love of pedaling by doing everything from teaching elementary school students bike safety to analyzing existing bike parking and writing grants to get more bike racks.

North Shore Citizen: Sue Hughes

Hughes was instrumental in improving and maintaining the Incline Flume Trail, a trail above Incline Village popular with hikers, runners, and mountain bikers.

South Shore Agency Representative/Environmental Scientist: Jacob Quinn

If you've enjoyed any of the recent additions to mountain bike trails at Lake Tahoe's South Shore, it's likely Quinn had a part in your ride.

North Shore Agency Representative/Environmental Scientist: Amy Berry

As the CEO of the Tahoe Fund, a nonprofit organization dedicated to building broad support and funding to restore and

enhance Lake Tahoe's natural environment, Berry has helped raise more than \$7 million from private donors, including more than \$1 million for a new section of bike path from Incline Village to Sand Harbor.

NASA launches satellites to track world's water

By Ian James, Desert Sun

For 15 years, two NASA satellites revealed an unprecedented picture of movements in water around the Earth, tracking ice sheets melting, glaciers retreating, oceans rising and groundwater declining as humans drain aquifers.

Now, NASA is carrying on the mission with the next generation of satellites that will monitor changes in the world's water supplies.

The twin satellites soared to orbit on a SpaceX Falcon 9 rocket that blasted off Tuesday from California's Vandenberg Air Force Base.

[Read the whole story](#)

Mining of 20 'critical'

minerals in Nev. could be streamlined

By Gary Martin, Las Vegas Review-Journal

WASHINGTON – The Interior Department has published a list of 35 “critical” minerals – 20 of which are present in Nevada – as part of a Trump administration effort to reduce foreign dependence on resources needed for consumer and military goods.

The list of the 35 critical minerals identified by the U.S. Geological Survey was released by Interior Secretary Ryan Zinke last week and will serve as a basis for a final Commerce Department report on the commodities.

President Trump signed an executive order in December directing the U.S. Geological Survey to identify minerals critical to national defense and the economy.

Read the whole story

Snippets about Lake Tahoe

- **Sustainable Community Alliance** submitted 1,827 signatures to the South Lake Tahoe city clerk this week, the next step in qualifying its vacation home rental restrictions measure for the November ballot.

- There will be a Memorial Day service at Happy Homestead Cemetery in South Lake Tahoe on Monday at 11am, with reception to follow at the American Legion Hall.

- Mammoth Mountain plans to close June 17.
 - El Dorado Beach boat ramp is open daily 8am-6pm, with the last launch at 4:30 pm. Cost is \$17 a day, \$40 for commercial use, or \$138 for the season.
 - Douglas County has selected Tammy James to fill the position of chief technology officer.
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TRPA confident shoreline plan on solid ground

By Kathryn Reed

STATELINE – Increasing the number of boats on Lake Tahoe and where they can dock once on the water are anticipated outcomes of the shoreline plan that is being considered by the Tahoe Regional Planning Agency.

The Governing Board on May 23 received a presentation about the draft environmental impact statement. Comments are being taken on the document until July 9, with the goal of having a final EIS to the bi-state regulatory board in October.

This all-encompassing document regulates piers, buoys, slips, marinas and ramps.

This is the seventh iteration of the shoreline plan since the early 1990s. Executive Director Joanne Marchetta gave a brief history about the process, explaining why this topic was not part of the original Regional Plan in 1987. At that time studies were still being conducted regarding the impact of piers on fish habitat.

Lawsuits derailed the 2008 shorezone plan approved by the TRPA. The hope is that by inviting the League to Save Lake Tahoe – one of the litigants in the case – to the table along with a slew of other stakeholders that this latest version will sail through without a lawsuit being filed. The Sierra Club was also part of the lawsuit, but not part of the stakeholders meetings in the last two-plus years.

Based on the comments at Wednesday's meeting, it isn't a sure bet this will be a slam dunk. Nine people spoke, many who were involved in the process up to this point. Those questioning the document represented the California Attorney General's Office, local Sierra Club chapter, and Friends of the West Shore. Impacts on non-motorized users, including those just at the beach, were brought up.

While there has been a 600-foot no wake zone in place for years, seldom has it been enforced. TRPA said increased enforcement is part of the plan. Ensuring all of Emerald Bay is a no-wake zone is another goal.

Staff anticipates the following issues to be controversial in the draft EIS:

- The number and location of new shoreline structures.
- Processes for allocating new shorezone structures.
- Effects of structures and boating on non-motorized water recreation.
- Visual effects of shoreline structures.
- Water and air pollution from boating.
- Effects on public access along the shoreline.

Recognizing that the lake could be at low levels as climate change takes a stronger hold, officials know there needs to be flexibility with pier construction. This means allowing

floating piers so the structures can actually be used instead of people walking under them as was the case during the latest drought.

As it stands today there is essentially a prohibition on new construction of piers.

There would be an 18 percent increase in piers and 24 percent increase in moorings if alternative one is adopted.

Ultimately boating activity is expected to increase 16 percent in the next 20 or so years.

At build out, which is expected to be 2040 at the soonest, the preferred alternative would allow up to 2,116 new moorings (buoys, lifts or public slips), 128 new private piers, 10 new public piers, and two new public boat ramps. Some new and existing buoys could be converted to slips, and vice versa at marinas.

The 2008 plan also called for 128 private piers as well as 1,822 buoys. At that time 768 piers and nearly 4,500 buoys existed.

Darcie Collins, executive director of the League, told the Governing Board her agency supports the draft document, but will be most interested in making sure the mitigation measures will be sufficient. She did not express what has changed for her agency in the last decade. What the League wanted at the time of the lawsuit was better science to prove TRPA's assertions.

It was noted by Adam Lewandowsky with Ascent, the firm that wrote the environmental document, that boat manufacturers don't regulate greenhouse gas emissions. This is an ongoing concern.

On the flip side, this process has brought the marina operators together. They have formed the Lake Tahoe Marina

Association, which includes all 14 commercial marinas in the basin. They are behind the preferred alternative and welcome the opportunity to implement to clean marina certificate program.

Notes:

- The environmental document is **online**.
 - Public workshop on June 4, 5:30-7:30pm, TRPA offices, Stateline.
 - Public workshop on June 6, 5:30-7:30pm, North Tahoe Event Center, Kings Beach.
 - Public hearing, June 13, on draft EIS, TRPA offices.
 - July 9, deadline to comment on draft EIS.
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Letter: LT Humane Society revamping its focus

To the community,

The Lake Tahoe Humane Society board of directors continues to be humbled by the outpouring of compassionate support from volunteers, businesses, agencies, and sponsors as part of our Restart, Rebuild, Restore, and Re-engage plan. Your contributions whether through your time, recommendations, partnerships, and/or monetary contributions, are essential to uniting us as a bonded community to create a safer future for the animals of Lake Tahoe.

Our core focus is to square things up financially, build alliances and partnerships, and restore services to the Lake Tahoe community – through intensive and compliant stewardship.

First 30 days

As a new board, we hit the ground running on April 21 and restarted with a lot of rigor around the process of discovery to determine what we were working with. We have reviewed thousands of files, emails and documents, and spent countless hours assessing priorities. We have initiated background checks, which were never required by previous boards, signed conflict of interest documents, changed account numbers, and implemented safeguards around our financials. We are grateful for the team of incredible professionals at El Dorado Savings, who have shepherded us through this process.

Of high importance, and through robust efforts, we are working to rebuild the reputation and capabilities of the Lake Tahoe Humane Society through numerous compliance activities and achieving recognition as a reputable organization for donors. Of immediate importance, the organization has achieved the 2018 gold seal of transparency through GuideStar, which demonstrates our commitment to nonprofit transparency. This agency tracks and reports on the compliance of all nonprofits nationally and is a level of certification not previously held by the organization. We continue to pursue and strive for the Better Business Bureau compliance certification and will provide a status on this endeavor shortly. As a new board of directors, we recognize the importance of, and are committed to, building trust, confidence, and transparency with our community.

As we forge ahead on our journey of restorative actions, we launched the Paws for the Cause giving campaign on May 11. Although donations have been minimal, we are optimistic about the future. We invite supporters to contribute no matter the amount. Whether it helps now, or in the future, your

contribution is extremely valued and is helping to cover legacy veterinary services delivered to the public.

After examining many financial documents, processes, and expenditures, we identified key indicators for the next logical steps to maintain financial health of the organization. In our evaluation, one of the options we must seriously consider is sale of the property. The board has begun the process to prepare the property for potential sale and are open to speaking with interested parties. This is not a decision we will take lightly but as we look at the financial situation, the sale of the property and liquidation of other assets will allow us to: Pay off existing debts; reduce significant operating expenses; restore a baseline budget that we can allocate to programs; and rebuild services in the community much faster. In reality, the Lake Tahoe Humane Society does not need the building to operate. The foundation for the organization itself is in the volunteerism and programming.

The original purpose of the building's purchase was a long-term goal of opening up a large scale rescue, care, and adoption facility in the city of South Lake Tahoe that would physically house animals. With the current financial situation, although that is a wonderful goal, it is not a reality at this time. The main goal for us is to keep the organization operating and restore programming. Sometime in the distant future, once the organization is back on solid ground, there may be an opportunity to achieve that dream.

We have been afforded with many re-engagement opportunities. We have hosted two clean-up days at the 884 Emerald Bay Road facility, where we had tremendous support from the city of South Lake Tahoe, South Tahoe Refuse, Clean Tahoe Program, California Conservation Corps, Tracy Sheldon and the countless volunteers who showed to help make this happen. As a result, we are hosting a yard sale on June 2 and invite the community to come and support through purchases and/or donations as we

embark on the re-imagination and transformation phases of the organization. We will be accepting cash and credit cards.

The Tahoe Chamber has been incredible in helping to champion us through this transformative process and has offered many resources to help us. Look for more activities in the near future. We were incredibly grateful for the financial contribution from the Junior Soroptimist bake sale! Well done, and what a shining example of incredible leadership from our children in the community. Additionally, other businesses like Fire & Ice, Casey's, Lake Tahoe Golf Course, and Live at Lakeview have partnered with us to offer events where proceeds will help benefit the organization and restore services. If you are a business who would like to partner to help support our restoration efforts, please send an email to info@laketahoehumanesociety.org

We thank Alpine Animal Hospital, Sierra Veterinary Hospital, Round Hill Animal Hospital, Lake Tahoe TV, and all of the businesses that have been impacted in the past and now, for your incredible patience and willingness to work with us as we engineer a plan to properly compensate you as quickly as possible. We want to restore services quickly so that we can partner together to help promote the health of all animals in Lake Tahoe.

We can't thank our media enough for helping to drive awareness of our efforts. Our incredible gratitude goes out to: the *Tahoe Tribune*, *South Tahoe Now*, *Tahoe Mountain News*, *Lake Tahoe News*, KNTV and KOL0 news crews for your partnership with us. We could not have the reach that we have had without you.

The board will continue to forge ahead with our simplification, consolidation, and financial health efforts to help us optimize our operational efficiencies and restorative practices. We will close on the Restart, Rebuild, Restore, and Re-engage planning efforts and build on what we were able to achieve here in the form of re-imagining and transforming our

organization into something that our community will value and benefit from again.

We thank you for your continued support. Please refer to the TransPAWrency document for any questions that you may have. We will update this document with new information as it becomes available.

With incredible gratitude,

Chantale Hansen, vice president operations Lake Tahoe Humane Society