



WATER, AIR, AND YOUR HEALTH: What's Fracking Got to Do With It?

By Catherine Porter, SF Bay Area PSR Policy Consultant

What's "fracking" anyway?

Hydraulic fracturing or "fracking" is a well stimulation process used in oil and gas production that involves blasting huge amounts of water mixed with sand and dozens of chemical components deep into the earth, breaking up underground rock formations to facilitate oil and gas extraction. In California, fracking is mostly used to drill for oil. Whether fracking for oil or gas, the method and related processes pose serious consequences for our health and the health of the environment. It is cause for great concern for San Francisco Bay Area Physicians for Social Responsibility and here's why.



Is there fracking in California?

In California, the oil and gas industry have been fracking for almost 60 years;¹ however, in order to expand access to underground sources, relatively newer processes are

(continued on page 5)

We Don't Need a New Cold War

By Dr. Bob Gould, President of National PSR and of SF Bay Area PSR Chapter

Serving once again this year as National PSR President, I can't help but think of the legacy of my predecessor, our recently departed friend and colleague Dr. Jeffrey Patterson, who devoted his life to eliminating the intertwined dangers of nuclear weapons and nuclear power. In his long-standing service to PSR and IPPNW, Jeff stressed our collective need as a species to deepen our opposition to all war. Jeff's call resonates with me as the present crisis in the Ukraine unfolds and forebodes a context for a catastrophic nuclear flashpoint.



The Obama administration's purported desire for a "reset" of relations with Russia, evinced by the success of the New START treaty that followed President Obama's call for an end to all nuclear weapons in his 2009 Prague address, has collapsed in the wake of the accelerating confrontation of nuclear-armed superpowers angling for geopolitical advantage.

Numerous experts including Professor Stephen Cohen and Jack Matlock, former Reagan administration ambassador to the Soviet Union, have argued that this current state of affairs could have been avoided if the United States and our NATO allies had adopted a more thoughtful post-Cold War policy. Instead, while facilitating the pillage of former Soviet wealth by new Russian oligarchs in the immediate years following the collapse of the USSR, the victorious Western powers took unnecessarily provocative actions, including the aggressive

(continued on page 4)

Infusing PSR Principles into Student Organizing

By Callum Rowe



I think doctors should be outspoken advocates for the community and the patients they take care of. It's been eye-opening and a huge privilege to find the doctors in PSR whom I want to emulate. I see a lot of leading by example in PSR. As a member

UC Berkeley Extension's American Student Medical Association (AMSA), I decided to run for the community service chair and infuse the tenets of PSR into AMSA. In the past year, we planned some events with SF Bay Area PSR, including a panel on health care providers as community advocates with Drs. Gould and Ritterman as two of the speakers; and we co-sponsored a screening of the film "The Waiting Room," which was hugely successful. I will be working with Co-Director Lucia Sayre on the upcoming Summer salons and Fall colloquium. Connecting with the local chapter of PSR has done wonders for AMSA in strengthening our student body.

I had originally gone to college to follow my intellectual passion, philosophy, and thought it was the engaging type of education I'd always been looking for. I realized, though, that I didn't want to be doing a career that was an ivory tower pursuit. I felt more of a responsibility to do something meaningful, immediate and tangible for others.

While in college, I went to Guatemala to do an immersion experience and developed a passion for Spanish. The first language school I went to in Quetzaltenango was started in the 1980s during the civil war, so that people would come and bear witness to what was happening. In a talk by three women who had been guerillas, one woman talked about the inspiration she got from the liberation theology movement and the huge discrepancy between those who had wealth and security in the country and the vast majority who were indigenous peasants. I had an awakening: I knew I wanted to do something in this area. When I came back to UC Santa Cruz, I took more Sociology and Latin American studies classes and volunteered at the Santa Cruz Immigration Project. I was thinking law might be a good direction for me, but after doing an internship in DC, I realized I wanted more immediate gratification.

I graduated from college and got interested in medicine after volunteering with the Bay Area Mountain Rescue Unit and taking a wilderness EMT course. I saw that in medicine, there is the possibility to help people immediately, and that physicians have an ability to work on bigger issues. So I enrolled at UC extension in the post-baccalaureate program to do the pre-requisites to go to medical school.

I've noticed a strong interest among pre-meds in how where someone lives affects their health. One thing that would be interesting is to share more information with them on the connection between community health and the environment, such as the health impacts from radioactive and other toxic waste leftover from the navy's presence in Bayview/Hunter's Point, and the effects on children's health of living in the triangle of the port and freeways in west Oakland. It would raise questions like "How can I advocate as a clinician? How does this relate to what I'm going to see with my patients?"

PSR is one group that has reaffirmed my decision to want to become a doctor. From PSR I learned that you can choose the kind of physician you want to be. If there are bigger issues in health care that you don't think are being addressed in your clinical practice, there are ways to advocate beyond the exam room. Even though it's a career with tremendous stress, burnout and disillusionment, there's no reason to lose sight of the fact that what you have as a doctor is the ability to do a tremendous good. PSR has imparted this to me and it's been hugely inspiring.

Soon I'll be doing organizing with SF Bay Area PSR to help reinvigorate the student presence in the Bay Area. I'm really excited to work with the chapter and be able to contribute something meaningful to develop a connection between student health professionals and health professionals who are already PSR members.

Callum Rowe is the Community Service Chair of the UC Berkeley Extension American Student Medical Association (AMSA). He has initiated co-sponsorships with SF Bay Area PSR for a number of events and will soon be working directly with the chapter on student initiatives.

Opposing AB 2361: Prop 65 Warnings Make a Difference to Californians' Health

Have you ever wondered whether all those Prop 65 warning signs make a difference? SF Bay Area PSR thinks they do, not only by informing people about the presence of harmful chemicals in certain areas but also by creating market incentives for manufacturers to discontinue using chemicals that cause cancer and reproductive harm. Because of these outcomes, SF Bay Area PSR opposed AB 2361 (Jones-R), a California bill that that would have weakened Prop 65 implementation.

In 1986, California voters approved Proposition 65, which became the Safe Drinking Water and Toxic Enforcement Act of 1986 (CA Health and Safety Code §§ 25249.5-25249.13). Addressing Californians' growing concerns about exposures to harmful chemicals, Prop 65 requires the state of California to maintain a list of chemicals known to cause cancer or birth defects or other reproductive harm. This list, which must be updated at least once a year, currently includes approximately 800 chemicals.

Prop 65 requires businesses to warn Californians about listed chemicals in their homes or workplaces, in the products they purchase, or that are released into the environment. Prop 65 isn't just about signs, though. It helps protect California's drinking water by prohibiting businesses from knowingly discharging significant amounts of chemicals on the Prop 65 list into drinking water sources.

Prop 65 is an important right-to-know law that helps protect the health of Californians.

Because of Prop 65, Californians are given information to reduce exposures to potentially harmful chemicals and protect their health. For example, Prop 65 contributed to greater awareness of the dangers of alcoholic beverage consumption during pregnancy. And while you may think that Prop 65 doesn't go far enough to reduce the use of harmful chemicals, the warning requirement does create strong market incentives for manufacturers to remove chemicals from their products that cause cancer, birth defects or other reproductive harm. Trichloroethylene, a Prop 65-listed carcinogen, is no longer used in most correction fluids; and reformulated paint strippers no longer contain the carcinogen methylene chloride.

PROP 65 WARNING

THIS FACILITY CONTAINS ONE OR MORE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR REPRODUCTIVE HARM.

CALIFORNIA HEALTH AND SAFETY CODE SEC 25249.6

San Francisco Bay Area Physicians for Social Responsibility opposed AB 2361 because it would have significantly undermined the health-protective warning requirements of Prop 65.

Under current law, all businesses with less than 10 employees are exempt from the warning requirement and the discharge prohibition, as are government agencies. And small businesses and government are not the only ones that get special treatment under Prop 65. Due to recently enacted legislation, restaurants, bars, parking garages and others can get away with paying a total fine of just \$500 for failing to properly warn its customers or employees, if they correct the violation within 14 days. Generally, penalties for violating Proposition 65 notification requirements can be as high as \$2,500 per violation per day. This "right to correct" eliminates the financial incentive to comply with Prop 65.

AB 2361 would have further expanded the "right to correct" to all businesses with less than 25 employees. Many companies with 10 to 25 employees sell or manufacture products and provide them to a range of retailers. By further eliminating financial incentives to comply with prop 65, AB 2361 would have resulted in a flood of dangerous products without any warnings in California's marketplace.

Prop 65 is a critical component of ensuring Californians' right to know and to protect themselves from harmful chemical exposures. In the future, SF Bay Area PSR will continue to stand against undermining this important law.

Cold War ...

(continued from page 1)

eastward expansion of NATO, and related planned deployments of missile “defense” installations rimming Russia.

Now Russian president Putin has raised the stakes to even more dangerous levels by annexing Crimea and projecting military power around Ukrainian “New Russia.” Like adding fuel to a nationalist fire, Putin’s actions were facilitated by Western leaders’ support for destabilizing the prior regime in Kiev and the associated implicit threat to long-standing Russian interests in having access to the Black Sea for its nuclear-stuffed Navy.

Like a cheap and awful remake of the escalating moves and counter-moves of military alliances that led to the outbreak of World War I a century ago, US Defense Secretary Hagel’s call for military budget increases throughout the NATO alliance can only accelerate the standoff. Such expenditures would also heighten the already devastated conditions of many people throughout Western Europe and beyond. Specifically, the persistent massive unemployment throughout the region, most marked in countries such as Spain and Greece, provides an example of what IMF austerity programs could portend for those Ukrainians leaning “West.”

Adding to the complexity of the situation are calls in the US and among allies to accelerate the development of hydraulic fracturing to provide sufficient natural gas to counter Russian economic and political power. Thus, the US-Russia power struggle provides the excuse to open the tap for even more greenhouse emissions at a time when concerted opposition to highly polluting fracking operations have blossomed throughout the United States and Europe.

For the sake of our planet, we need more thoughtful leadership on both sides of this increasingly explosive geopolitical divide. Running hand in hand towards an unlivable future, boosting military expenditures and fracking will devastate our troubled global economies, reduce our capacity to develop safe and sustainable forms of energy to address global warming, and squander our only option—the global cooperation needed to rid the world of the nuclear arsenals and to prevent catastrophic environmental degradation.

SUPPORT SF BAY AREA PSR!

Our donors are the backbone of our chapter. Please make a donation to support the important work of SF Bay Area PSR. Our policy is that once you make a donation to the chapter in a calendar year, we won’t ask you again for the rest of that year. You can send a check in the enclosed remit envelope or give online at www.sfbaypsr.org. Thanks for your support.

As I write this in early May, it is impossible to know if this dangerous standoff will abate through diplomacy guided by a perspective that the end of the Cold War was not a pretext for a “winner take all” strategy. Rather, human survival will require we urge our leaders to seek an opportunity to truly respect all contending national interests including developing the basis for a world free of all weapons of mass destruction.

In support of a peaceful resolution of the present standoff, we at PSR will redouble our efforts to spread the message of our “Humanitarian Impacts of Nuclear Weapons” campaign. Over the coming period, we will be working tirelessly throughout our networks and civil society in concert with our IPPNW colleagues within the International Campaign Against Nuclear Weapons (ICAN) to ensure the stakes to our shared humanity in this global power struggle are factored into our governments’ decisions.

To this end, we and our IPPNW colleagues are looking forward to an extraordinary collaboration with the Rotarian Action Group for Peace to get the word out on our “Humanitarian Impacts of Nuclear Weapons” campaign to Rotary clubs around the world. (See <http://rotarianactiongroupforpeace.org/nuclear-peace-education/>). This is an exceptional opening for us to go “beyond the choir” to inform mainstream Americans about the need for all of us to work towards averting the dangers of nuclear conflict and to build a sustainable future for all of our planet’s inhabitants. We hope that you and all of our members will join us in this truly life-affirming endeavor that is at the heart of what it means to be Physicians for Social Responsibility.

Fracking ...

(continued from page 1)

being utilized such as directional (non-vertical, slant or horizontal) and new chemical solutions. Oil and gas producers now have the capacity to drill over a mile into the earth.

Fracking has been documented in 10 California counties—Colusa, Glenn, Kern, Los Angeles, Monterey, Sacramento, Santa Barbara, Sutter, Kings and Ventura.ⁱⁱ In Kern County, California's major oil-producing county, 50–60% of new oil wells use fracking.ⁱⁱⁱ Oil companies are also fracking offshore.^{iv} In 2009, California produced 229.8 million barrels of oil.^v Drilling for oil and gas is on the rise in this state.^{vi} The largest shale oil reserve in the country is in the Monterey Shale in California and contains an estimated 13.7 billion barrels of recoverable oil.^{vii}

What are the health and other impacts of fracking?

Because disclosure has not been required until very recently with the passage of state Senate Bill 4 (Pavley) in 2013, it is unknown for certain which chemicals the oil and gas industry are using in California. But New York State knows that nearly 200 chemicals are being used or proposed for use in fracking operations there. Among them are ten chemicals known under California's Proposition 65 program to cause cancer and/or reproductive harm.^{viii} Health impacts of many of the chemicals include adverse effects on the nervous system, liver, kidneys, blood-cell-forming tissues, respiratory and gastrointestinal tracts, as well as general irritation to the skin, eyes, nose, and throat.^{ix} For many chemicals on New York's list, there is little information at all on their potential health hazards.

WATER

There is evidence that chemicals used in fracking or released during the process are contaminating underground water supplies.^x Even though chemicals often constitute less than 0.5% of fracking fluid, tens of thousands to millions of gallons of fluid are used in a fracking blast.^{xi} For some chemicals, even a little can be harmful. A single teaspoon of benzene is enough to contaminate more than 260,000 gallons of water to a level that exceeds EPA's drinking standard of 5 parts per billion.^{xii} According to the EPA, there is no safe level of benzene to protect against its potential harm.^{xiii}

The use of diesel fuel for fracking is also troubling. Diesel

fuel contains benzene as well as toluene, ethylbenzene and xylene (BTEX), chemicals which are toxic at low concentrations. These chemicals pose a range of health risks including cancer, developmental and reproductive harm, liver and kidney damage and nervous system disorders.^{xiv} In 2011, a Congressional investigation found that 26,444 gallons of diesel fuel had been injected into California wells in fracking fluids from 2005–2009.^{xv}

Water quality can also be compromised by methane contamination during drilling and the fracturing of rock formations. Lead, arsenic and radioactive materials are brought to the earth's surface with waste water from fracking. Methods to store these waters are inadequate to prevent leaks or evaporation into the air.^{xvi}

AIR

Fracking can release many of the same dangerous chemicals into the air, contributing to air pollution and, consequently, to a potential increased incidence of cancer. Releases can increase levels of ground-level ozone, a key risk factor for respiratory illness. Significant emissions of methane, which is 30 times more potent as a greenhouse gas contributing to climate change than carbon dioxide, have been associated with natural gas operations including fracking.^{xvii} Climate change brings with it a number of anticipated health effects including “heat waves, extreme weather events, flooding, water contamination, sea level rise, expansion of insect ranges and populations, worsening air quality, crop damage, and social instability and conflict.”^{xviii}

Prevent harm before it happens

There is still a lot that is unknown about fracking and its impacts on health and the environment, and what is known is not good. That's why State Senators Holly Mitchell and Mark Leno are trying to put the brakes on fracking in California by authoring Senate Bill 1132 which calls for a moratorium on well stimulation processes like fracking. The bill would prohibit all well stimulation in the state until a comprehensive study on the environmental and health effects of the processes is completed, and there is assurance that the processes do not pose a risk to human health and the environment. In keeping with appropriate application of the Precautionary Principle, we think this is the proper primary prevention approach in the face of persistent uncertainty as to the safety of fracking. SF Bay Area PSR supports this important piece of legislation; we hope you will too.

Complete article with endnotes available online at <http://www.sfbaypsr.org/fracking/>

Thanks! We thank the generous individuals who donated to the SF Bay Area Chapter in 2013:

Dr. Herbert Abrams	Dr. James & Michiyo Diamond	Dr. Robert Gould & Ms. Patrice Sutton	Dr. Frank Lucido	Rebecca Ruedy	Rudolph & Mildred Joseph Foundation
Ms. Dina Angress	Mary Dillon Kerwin	Dr. A.V. Gratch & Ms. Beverly Cheney	Darleen Anne Mayo	Mr & Mrs Elizabeth & Felix Smith	Women's International League for Peace & Freedom
Mr. John Bacon	Dr. Richard & Dorothy Dorsay	Marian & Roger Gray	Dr. Brigid Mc Caw & Mr. William Finzer	Dr. Gina Solomon & Annette Huddle	John & Eloise Sutter
Beth & Steven Bangert	Marta Drury	Ilse Hadda	Barbara Meislin	Mr. & Mrs. Susan & Bruce Stangeland	Richard & Mary Sutton
Dr. Valerie Bengal	Norman Eagle	Dr. Thomas Hall	Dr. Hercules Morphopoulos	Mr. & Ms. Michael & Barbara Stone	Sara Syer & Dr. Thomas S. Bodenheimer
Dr. Edward & Mrs. Mildred Bennett	Dietlinde Elliott	Patrick Holland	Judith & Robert Murphy	Drs. Dwight & Elaine Straub	Dr. Jean-Luc Szpakowski
Dr. Fred Bialy	Mary & Paul Engstrom	Lorraine Honig	Kathleen Nichols	Mary Strauss	Sapna Thottathill
Dr. Ronald Bieselin	Heidi Feldman	Joan Intrator	Dr. John Osborn	Dr. Joan Sullivan	Dr. Diane Tokugawa & Alan Gould
Ann Bjorklund	Zarrin Ferdowsi	Dr. Sarah Janssen	Drs. Marj Plumb & Tracy Weitz	Mr. & Mrs. John & Eloise Sutter	Ann Vivian
Nancy & Henry Bourne	Dr. Geraldine Fink	David Jesson	Mrs. Senta Pugh-Chamberlain	Dr. Jean-Luc Szpakowski	Michael & Beth Ward
Mrs. Nancy Boyce	William Finzer	Rabbi Steven Kaplan	Drs. Richard & Julia Quint	Dr. Diane Tokugawa & Mr. Alan Gould	Cynthia & Robert Weber
Roberta Bristol	Ms. Natalie Fisher	Pat & Natalie Kater	Frances Rachel	Susan Toth	Dr. Corey Weinstein
Susan Browne	Dr. Martin Fishman	Mr. Gary & Mrs. Ilene Katz	Dr. Kenneth Renwick	Ann Vivian	Deborah Whitney
Dr. Mary Burke	Mary Fought	Dr. Judith Kemeny & Dr. Paul Feigenbaum	Dr. Richard Ressler	Dr. Vura-Weis	Michael Williams
Patricia & Michael Busk	Alan Frank & Anita Frank	Dr. Dana Kent & Mr. William Monning	James Richardson	Joyce Walton	Sarah Wolfe
Dr. Frederick Byl	Norman & Kirsten Peck	Mary & Kendall King	Dr. Jeffrey Ritterman	Cynthia & Robert Weber	Pat Wynne
Dr. Alice Cary	Dr. Perrin & Ms. Rita De Sales French	Dr. Don King	Brian & Barbara Robinson	Dr. Corey Weinstein	
Dr. Mark & Tere Charney	Ms. Gale Garza	Agnes Klebe	Dr. Lawrence Rose	Deborah Whitney	
Dr. Barry Chauser	Neil Gendel	Dr. Janet Lai	Ms. Barbara Rothkrug	Mrs. Sarah Wolfe	
Drs. James & Linda Clever	Dr. Marianne & Mr. Dean Glover	Lorene Lamb	Ms. Linda Rudolph	Ms. Patricia Wynne	
Ms. Mina Cohen & Dr. Jeffrey Berenson	Dr. Michael Geschwind	Dr. Laurence & Ms. Jalyn Lang		Charles Yanofsky	
Susan Conrad	Charles Goetzl & Eric Fine	Dr. Ami Laws			
Drs. Lucy & William Crain	Randall & Sharon Goetzl	Dr. John & Ms. Aiko Lee			
Marcy Darnovsky & Barry Zuckerman	Dr. Caren Gould	Pearl Leonard			
Dr. Greg Denari					

We would like to thank our Program Funders:
Community Alliance with Family Farmers, Health Care Without Harm, National PSR, Rose Foundation, Women's International League for Peace & Freedom

SUPPER SALON WITH JEFFREY THOMPSON, MD

THURSDAY, MAY 29, 2014, 6:30-9:00 PM

An evening of good food and great conversation with Jeffrey Thompson, MD, CEO of Gundersen Health System in La Crosse, Wisconsin. SF Bay Area PSR board member Tom Hall, MD, will host this event at his home in San Francisco. Gundersen Health is recognized as a premier health system in energy efficiency and climate change mitigation efforts. Dr. Thompson will share with us the story of how the health system has taken the issue of climate change on as a priority in their operations and his own personal work as a clinical advocate for climate change mitigation and environmental health. RSVP with the number in your party to action@sfbaypsr.org or call 510-845-8395 and we will contact you with the address.

