

## Occupational and Environmental Respiratory Disease and Updates in Occupational and Environmental Medicine

REGISTER ONLINE NOW! <http://www.ucsfeme.com/2017/MDM17N01/info.html>

The Division of Occupational and Environmental Medicine is gearing up for its upcoming Continuing Medical Education (CME) course in March, 2017. This educational event will take place in San Francisco over two and a half days, beginning Thursday morning, March 9 and ending midday on Saturday, March 11. There will also be a special poster abstract session and opening reception on the evening of Wednesday March 8, before the course lectures begin the next day. As in recent courses, the venue will be the Holiday Inn Fisherman's Wharf which, in addition to excellent meeting facilities, has proven to be attractively situated for out-of-town attendees.

The 2017 Occupational and Environmental Medicine CME course will include a thematic focus for the pre-course evening poster session and the first day of lecture presentations: *Occupational and Environmental Respiratory Disease*. The second day and last half day will cover multiple topics on the theme: *Updates in Occupational and Environmental Health*.

The presentations in the Occupational and Environmental Respiratory Disease theme will include:

- Ambient Air Pollution and Health: Epidemiologic Bench to Bedside
- Upper Airway Responses to Occupational and Environmental Exposures
- Occupation and Pneumonia
- Occupational COPD and Chronic Bronchitis
- Work-related Interstitial Lung Disease: Beyond Pneumoconiosis
- Work-related Asthma: New Onset and Exacerbation
- Lung Transplantation: Occupational and Environmental Aspects
- Silica Exposure, Disease, and Prevention: Old and New Respiratory Hazards in Military Service

The closing panel for this theme will be: *What's Old and What's New in Occupational Respiratory Disease*.

The Updates in Occupational and Environmental Medicine will include expert presentations on a wide range of topics, including:

- Diving and Other Hyperbaric Hazards
- Ultraviolet Radiation Exposure in Work and Life
- Insights on Work-related Neurodegenerative Disease
- What's New in Hazardous Technologies and Exposures
- Occupationally-associated Male Genitourinary Conditions
- Opiates and Chronic Pain Management in Occupational Health Practice
- To Sit or Stand: What is Good for the Heart?
- Thinking About Vulnerable Workers
- The Skinny on Work: Obesity on the Job
- Manganese Toxicity: Recent Research Advances
- Weightless Environment and Health
- Agricultural Workers' at Risk
- The Neck and Upper Extremities: Ergonomic 101

The closing panel for the Updates theme will be: *Occupational and Environmental Health in 2017*.

This course is designed to provide occupational and environmental health professionals and persons from other health-related disciplines with a review and update of current data in occupational and environmental medicine. It is intended to meet the needs of primary care providers and others engaged in occupational health practice and research including physicians (family physicians, general practitioners, internists, and emergency medicine specialists), nurse practitioners and other nursing professionals, as well as physician's assistants, industrial hygienists, and health researchers and policy makers.

We are approved for 19.25 hours of CME credit for standard certification (including medicine, nursing, and physician assistant CME) as well as for maintenance of certification (MOC Part II) credits in Occupational and Environmental Medicine, and for Qualified Medical Evaluators (QME) credits.



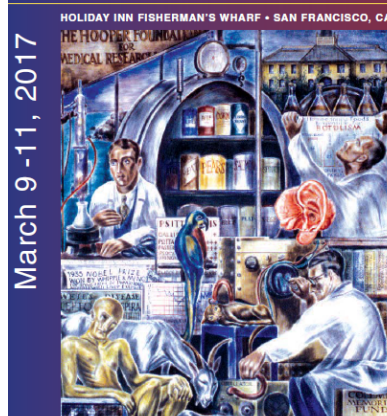
University of California  
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Division of Occupational  
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### Occupational and Environmental Respiratory Disease and Updates in Occupational and Environmental Medicine



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## The UC Ergonomics Laboratory



According to the 2015 Bureau of Labor Statistics, work-related musculoskeletal disorders (MSDs), such as low back pain, rotator cuff injuries, and wrist/elbow tendonitis, account for 32% of all occupational injuries and illnesses. Annual workers compensation costs for these disorders are over 16 billion dollars in direct costs with high levels of indirect costs due to lost workdays. Yet prevention activities, through ergonomic interventions, are not widely adopted.

The UC Ergonomics Lab was started in 1990 by Dr. David Rempel, an occupational medicine physician with an engineering background. Since his retirement, the lab has been led by Dr. Carisa Harris Adamson. Dr. Harris received her PhD in Environmental Health Sciences at UC Berkeley (2011) and her MS in Physical Therapy at UCSF (2001). Before becoming Director, she had over 10 years of experience in industry and 5 years of teaching and research at another university in the Bay Area.

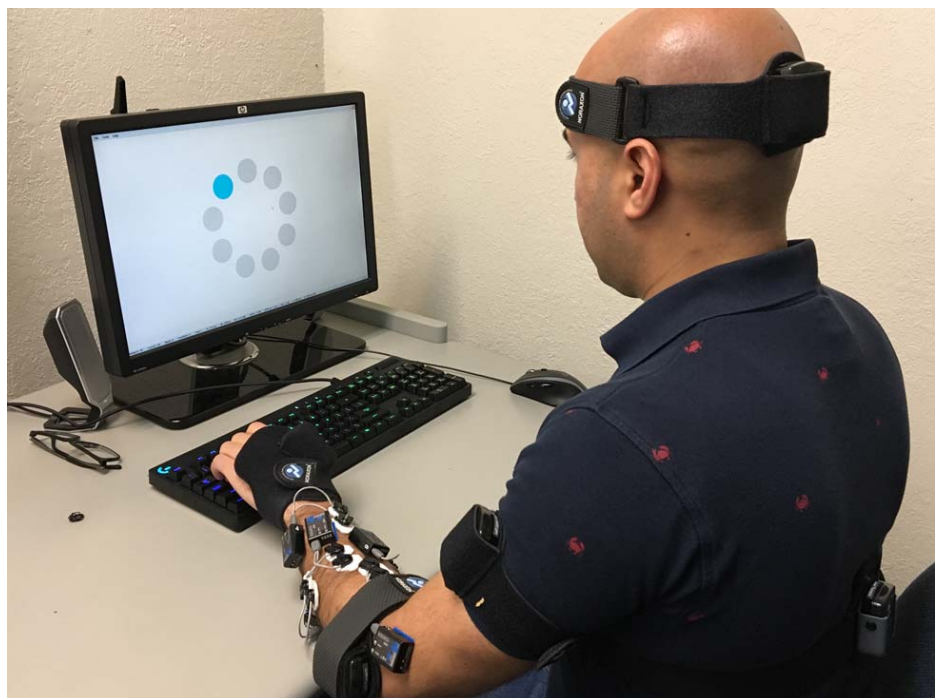
The mission of the lab has been to understand how MSDs are caused and identify equipment designs and work practices that prevent these disorders and optimize human performance. The lab became well known for identifying physical risk factors for hand and arm injuries and the development of new workstations, chairs and hand tools (e.g., pipettors, pruners, keyboards and mice). Additionally, the lab performed numerous intervention studies solving difficult workplace challenges.

Dr. Harris is doing collaborative research with Professor Ellen Eisen (UC Berkeley) on healthy worker survivor bias in a pooled longitudinal study of CTS and related disability. She is also collaborating with Professor Fadi Fathallah (UC Davis) on the biomechanical evaluation of hotel room cleaners, Professor Niklas Krause (UCLA) on cardiovascular strain and Professor Michael Bates (UC Berkeley) on the prevalence of MSDs and disability among women in developing countries exposed to heavy load carrying.

The UC Ergonomics laboratory is at the Berkeley Global Campus in Richmond and includes over 3000 square feet of space to support research and teaching. It includes two large student rooms, a wood/metal shop for building prototype tools, and four laboratory spaces including a biomechanics lab, a human-computer interaction (HCI) lab, a work physiology lab and a lab for concrete drilling studies. The biomechanics lab includes an Optotrak motion capture system and a Noraxon inertial motion capture and electromyography system that can be used to collect kinematic and muscle activity data both in the laboratory or the field. It is currently being used to evaluate the physical workload performed by gastroenterologists during colonoscopy and to evaluate an exoskeleton for stooped labor and industrial grinding. The HCI lab is conducting research on the design of hand gestures for interacting with computers since it is likely that most computer interaction will be with voice and gesturing over the next 5 to 10 years. The work physiology lab is used for assessing metabolic rate and cardiovascular markers. It is currently used to study the health risks associated with sedentary office workers and physically demanding work, such as hotel room cleaners. The drill test bench is an automated system that repeatedly drills into concrete block in order to understand how tool and bit designs affect handle vibration, noise, silica dust production, and productivity.

In summary, the UC Ergonomics Laboratory provides an advanced research environment, with the latest equipment and technology, to study methods of preventing musculoskeletal disorders and a place to train tomorrow's academics and practitioners in MSD prevention. This includes many of the Occupational and Environmental Medicine Residents who have rotated through the Lab.

The Laboratory publications and research projects are described at <http://ergo.berkeley.edu/>.



## Report from the COEH

Over the last year, the students and faculty of COEH have contributed in many ways to advancing knowledge and promoting health and safety in our workplaces and communities. Here are some of the highlights for COEH in 2016 and a few upcoming events in the new year:

- COEH welcomed new faculty in the beginning of the year. Justin Remais, PhD joined the UC Berkeley School of Public Health as an associate professor of Environmental Health Sciences (EHS). Carisa Harris-Adamson, PhD was appointed director of the University of California Ergonomics Program.
- The spring 2016 Lela Morris Symposium titled, "The Changing World of Work: How the Gig Economy Impacts Occupational Safety and Health" provided information on many important challenges facing workers as the organization of work changes. Presentations also examined issues specific to California's workforce.
- Looking ahead to 2017, COEH announces that Patricia Quinlan MPH, CIH, will be retiring as COEH's Deputy Director. Quinlan has served as Deputy Director since 2011 and has been an esteemed member of the COEH community for 30 years. Her vision and commitment to occupational and environmental health has been invaluable to COEH. Julia Buss RN, PhD will be assuming the role of Deputy Director after Quinlan's retirement. Buss is a graduate of UCSF's Occupational and Environmental Health Nursing Programs.
- In 2017, the Lela Morris Symposium will be held on May 12<sup>th</sup> at the David Brower Center. This upcoming event will look at air pollution at work, home and in the ambient environment.
- UC Davis is hosting the Migrant Labor and Global Health Conference on March 2-3<sup>rd</sup> 2017. This conference will explore the interrelated issues of labor migration, occupational health, and economics.
- Beginning on February 1<sup>st</sup>, 2017 COEH will host monthly webinars on the first Wednesday of each month at 10:30am PST.

Details on this and other activities are available at the COEH-CE website: [www.coehce.org](http://www.coehce.org)

To find out more about the recent accomplishments of COEH students and faculty take a look at the COEH newsletter, Bridges.

Subscribe at: <http://coeh.berkeley.edu/bridges/index.html>

Follow COEH on social media at [twitter.com/UCB\\_COEH](https://twitter.com/UCB_COEH) and [www.facebook.com/UCCOEH](https://www.facebook.com/UCCOEH)

### About COEH

*The Northern California Center for Occupational and Environmental Health (COEH) is a collaboration between University of California at Berkeley, Davis, and San Francisco. COEH Director is John Balmes, MD. COEH promotes health and safety in workplaces and communities by educating health professionals, developing new knowledge and translating research into practice. COEH is also one of 18 regional Education and Research Centers (ERCs) funded by the National Institute for Occupational Safety and Health (NIOSH). The ERC's Academic programs include: Occupational and Environmental Medicine, Occupational and Environmental Health Nursing, Industrial Hygiene, Occupational Epidemiology, Ergonomics, and Agricultural Health and Safety. Graduate students from all the programs can participate in a Targeted Research Training program to assist them in completing their research. The Labor Occupational Health Program (LOHP) is the public service program of the COEH with the goal of preventing illness and injury in the workplace and raising awareness of the social and economic costs of hazardous workplace conditions for individuals, communities, businesses, and the environment. COEH's continuing education program offers a broad range of accredited courses for practicing health and safety professionals.*

## Occupational and Environmental Medicine (OEM) Mount Zion Clinic Update

The UCSF OEM Clinic continues to be rooted in a faculty practice which has been operating for over 25 years. Our team of experts includes Board Certified physicians in occupational and environmental medicine, medical toxicology, occupational health nursing, physiotherapy, and industrial hygiene. The clinic provides specialty consultation to individuals and groups of workers who have had exposures to biological, chemical, and physical agents at the workplace or home.

The OEM clinic provides leadership internally to the UCSF Health adult hospitals, children's hospital, and ambulatory faculty practices in the design and execution of programs available to its health care workers for immunization review when starting work, for large scale program such as immunization for influenza, tuberculosis surveillance, and medical clearance to wear a respirator, and for groups of workers with special assignments with highly infectious agents, such as Ebola. The OEM medical team provides immediate access to care for health care workers when they have an exposure to blood borne pathogens, and for researchers when they have exposures from laboratory materials or research animals.

The OEM clinic's work for the UCSF Health has been extended to biosafety issues in the UCSF research community. It provides immunization for infectious agents in research, monitors workers at a medical risk, and responds to exposures when they occur. These services have already been extended to affiliated researchers and now are being extended to external groups. Workers at the California Academy of Sciences are getting medical clearance, spirometry, and fit testing for wearing respirators.

The OEM clinic evaluates individuals following a chemical exposure at the workplace or home including a baseline assessment with recommendations for follow medical surveillance. It performs repeat assessments on groups of workers providing consistency in medical surveillance over time. As an example, the OEM clinic provides the Department of Transportation examinations to individuals and groups of workers.

The OEM clinic develops specific medical surveillance and assessment programs customized for hazards in a group of workers. It designed a fitness for duty surveillance program for the San Francisco marine pilots who climb on board all large ships entering the Bay, and then navigate the ship into the Bay until it is safely alongside its berth. The program is comprised of a medical surveillance assessment which includes an agility test, toxicology screening for over the counter and prescription medications, and comprehensive medical examinations focused on the physical demands of their work as marine pilots and identification of previously unrecognized obstructive sleep apnea.

The clinic is conveniently located within the UCSF Mount Zion campus just north of Geary and west of Divisadero at 2330 Post Street, Suite 460. The clinic can be reached by telephone at 415.885.7580. Referrals are accepted from physicians, other licensed medical practitioners, attorneys, and selected self-referrals from individuals.

For a link to the clinic go to: <http://oem.ucsf.edu/care/clinics.html>



## Occupational and Environmental Medicine Residency: Personal Reflections by a Group of Graduating Residents

*It's been a great year for the UCSF occupational and environmental medicine residents. With ten residents in the program there has been plenty of opportunity for collaboration and lively discussion. We would like to shine a light on the current second year class as they prepare to enter their last few months of residency training. The current second year class consists of residents of varying backgrounds, both clinically and culturally. They hail from multiple continents and bring a myriad of ideas and strengths to the program. One consistent theme, however, is their interest in working with underserved and vulnerable populations. The UCSF program offers many opportunities for residents to engage with vulnerable populations such as immigrants, migrant workers and the homeless. There is a consistent emphasis on learning the most effective way to provide care in an occupational setting with a diverse and fragile group of patients. Below are some of the firsthand thoughts and experiences of these graduating residents.*

Abdullah Khafagy: I came to the United States all the way from Saudi Arabia, crossing two continents and an ocean, to get the best training in Occupational and Environmental Medicine (OEM). Getting certified to train in the United States and then completing a Family Medicine Residency were some of the steps to get here. When you specialize in a field, you search for the place where the gurus in that field teach and you join that place. The faculty at UCSF OEM are the giants of OEM; world renowned for their expertise and research in the field. One of my favorite and most enjoyable parts of the training is the annual summer site visits, when residents get the chance to visit worksites and observe workers performing their duties first hand. Observing the work being done at the worksite solidifies the understanding that comes from hearing about it in the classroom or the clinic. I really appreciate graduating with a wide variety of experience and understanding in different industries. "Talent wins games, but teamwork and intelligence win championships" - Michael Jordan. I feel fortunate to have the chance to work with my fellow residents who are intelligent, bright and team-oriented individuals. We have residents from different specialties and backgrounds and our experience in the program is enriched as we learn from each other. My family practice residency placed me in the position to work with an underserved population, and my experience at UCSF allowed me to participate in research aimed at a similar demographic. This came in the form of studying local area hotel housekeepers and attempting to improve their safety as well as lowering their cardiovascular disease risk. As I embark on my journey back to Saudi Arabia to apply and transfer the knowledge I learned from my time at UCSF, I am confident that I accomplished my goal, getting the best training in OEM.

Erin McLaughlin: I began my residency training in the field of Radiology, however, I decided to switch specialties because I missed patient interaction. With an undergraduate background in environmental science and a genuine passion for improving people's lives, I ventured from New York to California to pursue OEM at UCSF. As a resident here, I have had many opportunities to work with patients from various socioeconomic backgrounds. Many of the patients I've served do not speak English and many more are the primary breadwinner of their family. My training at UCSF has taught me the importance of educating my patients regarding potential occupational and environmental hazards as well as orchestrating an effective recovery plan so they may return to work as soon as possible. Through my time at UCSF I have also cultivated a specific interest in occupational allergies, specifically in the laboratory setting. UCSF has afforded me the opportunity to visit several animal care facilities and labs where I've learned the various approaches and controls used to keep animal handlers and lab workers safe. Lastly, my training here at UCSF has provided me with a strong foundation not only in clinical medicine but also in epidemiology and public health. I am grateful for the emphasis placed on understanding fundamental tools in public health from which to interpret and

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draft potential policy for future community impact. My training at UCSF has enabled me to feel very well prepared to take on my future as an OEM practitioner.

**Craig Murphy:** As an active duty Air Force Flight Surgeon, I chose OEM as a career option due to my experience with managing occupational disease trends, travel medicine, flying class exams and preventive approach to medicine. My experience at UCSF has allowed me to draw from my knowledge and experience of USAF Aerospace Medicine and pursue the extreme environment of Aerospace, namely life outside Earth's atmosphere. During my residency at UCSF, I have worked with researchers at NASA AMES on a project targeted on long duration space missions such as manned missions to Mars. Our intent is to provide a tool that will enable better understanding and planning work/rest cycles for future astronauts in order to mitigate the effects of fatigue and optimize the hours of wakefulness for each crew member. As deeper space exploration continues to become reality, the need for managing work/rest cycles in the space environment will play a crucial role in mission success. In addition to NASA AMES, the network of faculty in the UCSF organization has also given me the opportunity to assist with creating the Bay Area's Space Consortium, which pulls together local physicians, scientists and students toward the goal of researching and discussing current topics relevant to space exploration. We have also been approved to offer an elective course in the fall semester to UCSF medical school students, which will focus on topics relevant to zero-gravity medicine. I am grateful to have had the opportunities to hone my working knowledge of occupational medicine, and cultivate new relationships in the Aerospace community during my time at UCSF.

**Rahmat Balogun:** I was born to Nigerian parents who immigrated to the United States in the mid 1970s. Growing up in New York City, I spent the majority of my childhood and teenage years in an underserved community. I decided to become a physician because I wanted to help people and give back to my community. I was first introduced to OEM during my second year of Internal Medicine (IM) Residency. For me, making the decision to do further training in OEM was influenced by a fellow colleague and my family. My mother was an Industrial Hygienist for the New York City Department of Health for many years before she retired. She worked to protect children and their families from various environmental exposures, such as lead and asbestos. Seeing my mother work all those years to protect people from toxic chemicals in the environment and knowing that I could do more with my clinical skills was what led me to the field of OEM after completing my IM Residency. So far, through my UCSF OEM training, I have had the opportunity to participate in policy and public outreach that has influenced the health of workers and people in the community. One experience that stands out during my training is working with the predominantly Mexican and Hispanic population of agricultural workers in Salinas, California (the "salad bowl of the world"). This is a group of workers who are largely marginalized and in addition to work related injuries have to deal with being socioeconomically disadvantaged. Overall, my experience in this program has been diverse and robust and I believe that through my experiences here and the mentorship of the outstanding faculty in this program I am well prepared to be a successful OEM physician.

**Monica Kaitz:** I first heard of OEM during my IM and Preventive Medicine (PM) residency program. Up to that time, most of my training had consisted of code blues and end-of-life discussions in the ICU, with limited chance of guiding patients back to a good quality of life. Since joining the UCSF OEM residency, it has been a revelation to delve into the home and work environments of patients, much as a detective would, to figure out how they were injured and how to prevent it - with a good chance of succeeding. Treating these patients often requires elements of IM, PM, and OEM simultaneously. Furthermore, these patients are often in the greatest need





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of our care. For example, I treated a young agricultural worker living in a shanty-town makeshift migrant camp close to Salinas, CA for chicken pox. This launched a contact investigation into other undocumented workers living in the camp, who were unvaccinated and at risk for starting an outbreak. Similarly, experiences working at the Poison Control Center and Pediatric Environmental Health Specialty Unit meant helping a public who likely would not be able to cover costly ED visits. I was able to advise them on how to manage the potential toxins in their environment. Rotating with public health organizations such as the Labor Occupational Health Program at UC Berkeley, I got to work with teenagers just entering the workplace, a little-recognized but highly marginalized group, to emphasize their employment rights and prevent injuries. Finally, I have had the opportunity to develop expertise and publish research in my field of interest: environmental toxins as I examined the consumer product chemicals found in US indoor dust samples. Thus, the UCSF OEM residency has been a robust, fascinating and rewarding experience that has allowed me to rotate through various clinical sites and work with patients from diverse socioeconomic backgrounds.

**Shuchi Agarwal:** I joined UCSF's OEM program after completing a residency in General PM and Public Health at Johns Hopkins. With a combination of Bay Area specific site-visits and unique to UCSF rotations, such as the Poison Control Center (one of 55 in the country), the program has advanced my training in musculoskeletal, environmental, and toxic exposures cases. I love the variety of challenges offered by this field of medicine, from treating postal employees, veterans, or construction workers, to providing guidance on how to manage a toxic substance ingestion by a child, to researching the impact of sit-stand desks on low back discomfort. Other than the fact that we are consistently helping those populations most in need of care, truly, no day is the same. Looking ahead, I will be staying in Salinas to work with the underserved, vulnerable population of immigrant farm workers. This community constantly struggles with their own occupational illness and injuries, and also with basic nutrition and general health. Leveraging my training to help this type of community is what drew me to this field. UCSF has given me mentorship from distinguished faculty, highly skilled clinicians, researchers and the opportunity to build a career as an occupational and environmental medicine physician.

*The opportunities available in the OEM residency program at UCSF are just as diverse as the residents themselves. This program provides training drafting policy, working with underserved populations, consulting with industry, and collaborating with research. As shown in the excerpts from residents above, we come from different backgrounds and are pursuing different areas of interest within OEM. The UCSF OEM program has the flexibility and robustness to equip each of us with the individual skills needed to hone our expertise in each of our respective areas of interest, while preparing us to be successful in any Occupational setting. Upon graduation we will likely all disperse throughout the country, and world carrying with us the tools we sharpened at UCSF. We are all grateful for the mentorship, training, and collaborative experience during these last two years. As we embark on our careers, we look forward to continuing our relationship with UCSF, whether this means acting as a resource for future residents, or as peers throughout the OEM field.*

## The unraveling truth behind a lustrous fiber

"Let me tell you, Herr Brenner, a woman should never wear artificial silk when she's with a man. It wrinkles too quickly, and what will you look like after seven real kisses? Only pure silk, I say -- and music." Irmgard Keun, a young girl's quote in the time of 1930's Weimar Republic (pre-Nazi Germany). This cultural artifact is one of many brought to light in UCSF Professor and Occupational and Environmental Medicine Chief's just recently published book, *Fake Silk: the Lethal History of Viscose Rayon*. It is a deep dive look into the history and consequences of the viscose rayon manufacturing process. The book evokes a thought-provoking response similar to the unmasking adverse effects of asbestos, silica, lead, and mercury that have historically been penned into the hall of fame for environmental hazards.

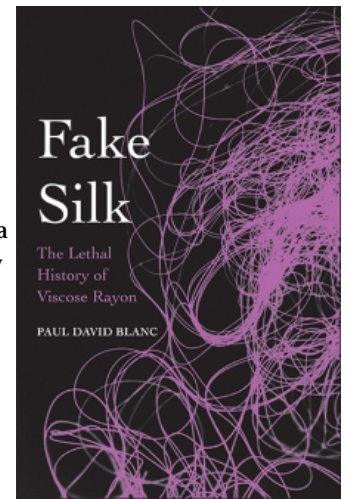
The historical account grew out of earlier work from his well-received book, *How Everyday Products Make People Sick* after he realized "the full story of carbon disulfide had not yet been told." He utilized a global outreach of resources to grasp an accurate account over many years to complete this project. Dr. Blanc's quest is bold, appreciative, and insightful as he looks into the century-old churning of a lethal process most people have no idea about. He mentions, "despite its shocking legacy, viscose's history is almost completely unknown." He leaves no stone unturned with a passionate flare for transparency, including the villains of industry, past and present. He states, "...I intend to name names." Blanc targets those that need to be targeted and those that equally deserve credit. He focuses on the silk-like product, but parallels the dire consequences onto modern age processes of innovations. His intellectual prowess comes to light with each turn of the page. He frequently engages the reader with appropriate humor and delightful sarcasm.

Dr. Blanc describes the intricate and revealing manufacturing process similar to a mother giving birth to her newborn baby. He notes that "carbon disulfide is an elegant little molecule" and traces it to its German origins in the 18<sup>th</sup> century. Later, he revokes this innocence as an evolutionary process of something like a toxic ghost infesting its very own handlers. It is an honest and humbling progression of misery over decades of a seemingly harmless end-product.

These pages should appeal to most everyone. The book discusses disease and death that the industry caused and continues to manifest in the workers of rayon textile factories. Impressively, he also enlightens with the history of technological innovation led by carbon disulfide. He talks about the related economics and markets for nearly a century since the birth of the industry. He further describes the cultural history of man-made fibers and its eventual acceptance. The words invoke a visceral feeling of the human experience caused by viscose's history and its multi-generational effects.

This book will make you think twice of what you wear: a reminder of the blood, sweat, and tears of those who eventually succumbed to make one look chic in a fashion conscious world. Most importantly, he succeeds in telling the real story of real people in the most purest way. Bravo.

Rajan Puri MD MPH; UCSF OEM Residency Graduate, 2016



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