# Silicon Valley Health Institute

Host of the Smart Life Forum

**Next Meeting: Thursday, August 21, 2014**

## Main Presentation: Tim Guilford, MD

*"Vitality, Energy, Detox - Your Need for Glutathione!"*

## Secondary Presentation: Melissa Fritchle

*"Sexual Vitality as You Age"*

**Smart Life Forum Presentation Location**

Cubberley Community Center

Room H1

4000 Middlefield Road

Palo Alto, California

Directions on our website:

*www.SVHI.com*

For those who cannot attend, you can view livestreaming at

*http://bit.ly/Zpld3o*

See our archived videos at

*http://tinyurl.com/smartlifeforum*

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# Announcements/Upcoming Events

***Upcoming Speakers:***

SEPTEMBER 2014
Robert J. Marshall, PhD, CCN, DACBN
Scott Sherr, MD - "Hyperbaric Oxygen"

OCTOBER 2014
Dana Ullman, MPH, CCH - "Homeopathy and Nanomedicine in Chronic Disease and Immune Disorders"

***Upcoming Foundation for Mind Being Research Meeting (FMBR)***

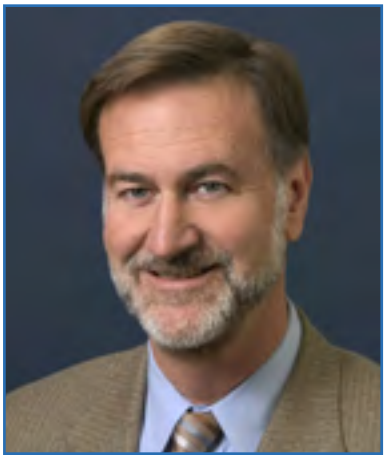
**Friday, August 22, 2014, 7:30pm-9:00pm**

*Subtle Energy: Bridging Modern Science & Ancient Wisdom*
with Yury Kronn, PhD

at Unity Community Church - Y.E.S. Hall
3391 Middlefield Road
Palo Alto, CA

**If you have questions please email *susanrdowns@hotmail.com.***
Thank you.

## *Presentation Speaker: Meet Tim Guilford, MD!*



Dr. Guilford is both a clinician and a researcher. His education includes Johns Hopkins University for his undergraduate degree, the University of Texas Medical Branch for medical school, 2 years of general surgery at Johns Hopkins Hospital, an ENT surgery residency at the University of Michigan and Board Certification in ENT. Dr. Guilford has been in clinical practice since 1979, has been using complementary medicine in his practice since 1985. He was the director of a clinical laboratory specializing in in-vitro allergy and viral immunology testing (1982 -1992). Dr. Guilford's study of the role that glutathione plays in the basic mechanism of many diseases led to his formulating a liposome encapsulation of reduced glutathione, Readisorb® Glutathione (Research on liposomal glutathione). Dr. Guilford's recent publications include articles on the neuroprotective qualities of liposomal glutathione, the detection of mycotoxins in mold exposed individuals, deficient glutathione in mycotoxin-related illness, a review of glutathione and atherosclerosis and immune responses in conditions with low glutathione. His recent publications are listed at DrGuilford.com/publications/.

*(End of Meet Tim Guilford!)*

# Main Presentation by Tim Guilford, MD

*"Vitality, Energy, Detox - Your Need for Glutathione!"*

In 2013, the 125th year the discovery of glutathione (abbreviated as GSH) was celebrated. Over the years, interest and enthusiasm for glutathione has enjoyed a number of peaks but until recently, it has not been well known. There is continued recognition of the importance of glutathione as well as its many physiological functions. While the role of glutathione as a critical defense mechanism against oxidative and electrophilic stress is well documented. GSH also plays an important role in the detoxification of hydroperoxides and a wide variety of xenobiotic compounds. GSH turns out to also be vital in the function of mitochondria and maintenance of mitochondrial DNA. There is developing information that GSH may be important in DNA methylation. Dysregulation of glutathione is associated with the etiology and progression of many clinical diseases, including cancer, diseases of aging, cystic fibrosis, cardiovascular, inflammatory, immune, metabolic, and neurodegenerative diseases. Pubmed has over 114,000 references for the single word search "glutathione". While the clinical role of glutathione is gaining acceptance, the multiple effects of GSH on cell function has made it difficult to define the role of GSH in onset of human diseases and few of the Pubmed references are for clinical medicine applications for glutathione.

There are many reasons for the lack of use of glutathione in clinical medicine. Testing for levels of glutathione has been lacking due to difficulties in stabilizing the reduced form of glutathione for laboratory tests. For example, a few minutes after drawing blood for testing of reduced glutathione the reduced glutathione may become oxidized by the ambient air, so it has been a difficult test to develop in the routine clinical setting. Labs that preform blood tests for glutathione are listed along with a general discussion of glutathione at http://www.drguilford.com/publications/.

Clinical use of glutathione has also been hampered by lack of an easy form of using glutathione. The oral administration of plain glutathione does not provide a rapid increase in glutathione in blood or tissues. About 10 years ago, interest in glutathione led me to help develop an oral liposomal form of reduced glutathione called ReadiSorb glutathione. Several clinical observations led to an anecdotal confidence that liposomal glutathione could provide glutathione rapidly to the body.

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Clinical skepticism persisted, however, so we set out to do studies that would help support the concept that our unique formulation was able to keep glutathione in the reduced state and facilitate absorption after oral absorption.

The studies that followed show a broad range of application for glutathione that continues. We have some results in a clinical study, but more should follow.

Our first study was done in laboratory of Michael Aviram at the Technion, who has published over 450 articles and has been cited over 20,000 times. The study produced a number of interesting findings, including the novel observation that both HDL and LDL cholesterol complexes contain the glutathione-specific enzyme glutathione peroxidase (GPx), which is used to prevent oxidation by hydrogen peroxide and its radicals (1). The in vitro portion of the study shows that supplying reduced glutathione in the liposomal formulation prevents the oxidation of LDL cholesterol (oxLDL). The in vivo portion of the study shows that the liposomal glutathione maintains macrophage function and decreases the formation of atherosclerosis in the animal model.

OxLDL is now recognized as a significant factor in atherosclerosis as it is taken into macrophages and when not adequately metabolized will go on to form foam cells and the atherosclerotic plaque. The theory that atherosclerosis is an oxidative stress related phenomenon is supported in the basic science, but is controversial in the clinical literature because antioxidants like vitamin C and E don't have consistent clinical responses. It appears probable that the missing ingredient in the antioxidant theory is the reduced form of glutathione which can be supplied by the YES liposomal glutathione. Additional cardiac related studies by Lauver at the Univ. of Michigan shows that "Oral Pretreatment with Liposomal Glutathione Attenuates Reperfusion Injury in Rabbit Isolated Hearts" (2). This study goes on to show that liposomal glutathione also raises the brain and liver tissue levels in the animals by a statistically significant amount.

The study by Gail Zeevalk at UMDNJ-Robert Wood Johnson Medical School, shows that liposomal glutathione is 100x's more efficient than plain, non-formulated glutathione in restoring glutathione to depleted mesencephalic brain cells (astrocytes and neurons) in cell culture (3).

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Another study shows that the liposomal glutathione is over 1000 (one-thousand) times more efficient than N-acetyl cysteine (NAC) in maintaining macrophage cells during the stress of an infectious process (4). The study by Levitskaia shows that the oral liposomal glutathione is absorbed and functions in a manner similar to intravenous glutathione in the removal of a radio-tagged toxin (Co-60), while plain glutathione given orally to the animals had no function (5).

Work with liposomal glutathione at by V. Venketaraman at Western University in Southern California has led to fascinating insights in regard to immune function (4, 6, 7). This series of studies examines the role of glutathione in support of the innate immune system. This system includes macrophage function, dendritic cells (also known as antigen presenting cells. It has been known for some time that individual's with human immunodeficiency virus (HIV) related infection have low blood glutathione. The Morris study on HIV shows the mechanism of the loss of glutathione is related to a loss in the expression of the enzymes that make glutathione (4). In this setting, liposomal glutathione was over 1000 (one-thousand) times more efficient than N-acetyl cysteine (NAC) in maintaining macrophage cell antibacterial function during the stress of an infectious process (Mycobacterium tuberculosis abbreviated as M. tb) (4). Liposomal glutathione was also able to restore glutathione levels in these glutathione depleted cells. It was initially thought that the decrease in function of the enzymes of glutathione production explained the dramatically increase function of liposomal glutathione in the HIV study, so it was a surprise to see that similar dramatic efficacy liposomal glutathione was also found in the studies of normal immune Dendritic Cells exposed to an intracellular infection with M. tb (6).

The loss of expression of the enzymes of glutathione production has shown up in other conditions. Anne Fitzpatrick at Emory University has shown that the enzymes of glutathione production are not expressed in the lungs of children with chronic asthma due to a modification of the oxidation detection system of the cell known as Nrf2 (8). The lack of function of Nrf2 leaves children with chronic asthma with a decreased function of the enzymes that produce glutathione.

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Chronic asthma oxidation stress appears to be cause of the modification of Nrf2 and the loss of glutathione. A genetic decrease in the expression of the enzymes that produce glutathione has also been described in adult heart disease such as myocardial infarction and congestive heart failure (9, 10).

A similar decrease in the function of the enzymes that produce glutathione appears to be part of the pathophysiology of mycotoxin-related illness as I reviewed in an article published online this year (11). This article reviews the glutathione antioxidant and detoxification system, which includes a number of enzyme systems that work with glutathione such as glutathione peroxidase and transferase.

The loss of production of glutathione has been described to occur with oxidation stress, infection and a genetic predisposition. As summarized in the conclusion of the paper on mycotoxin-related loss of glutathione production (11), more efficient resolution of the effects of glutathione depletion may require the administration of the complete glutathione molecule such as is found using liposomal glutathione. The benefit of supplying the whole molecule of glutathione was demonstrated in vitro in the HIV+ macrophage study (4). I am optimistic that in vivo, meaning human studies will show similar effects.

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*Foot Notes for Dr. Guilford's Presentation*

1. Rosenblat M, Volkova N, Coleman R, Aviram M. Anti-oxidant and anti-atherogenic properties of liposomal glutathione: studies in vitro, and in the atherosclerotic apolipoprotein E-deficient mice. Atherosclerosis. 2007;195(2):e61-8. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17588583
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3. Zeevalk GD, Bernard LP, Guilford FT. Liposomal-glutathione provides maintenance of intracellular glutathione and neuroprotection in mesencephalic neuronal cells. Neurochem Res. 2010;35(10):1575-87. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20535554
4. Morris D, Guerra C, Khurasany M, Guilford F, Saviola B, Huang Y, et al. Glutathione supplementation improves macrophage functions in HIV. J Interferon Cytokine Res. 2013;33(5):270-9. http://www.ncbi.nlm.nih.gov/pubmed/23409922
5. Levitskaia TG, Morris JE, Creim JA, Woodstock AD, Luders T, Curry TL, et al. Aminothiol receptors for decorporation of intravenously administered (60)Co in the rat. Health Phys. 2010;98(1):53-60. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2818207/?tool=pubmed
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10. Watanabe Y, Watanabe K, Kobayashi T, Saito Y, Fujioka D, Nakamura T, et al. Chronic depletion of glutathione exacerbates ventricular remodelling and dysfunction in the pressure-overloaded heart. Cardiovasc Res. 2013;97(2):282-92. http://www.ncbi.nlm.nih.gov/pubmed/23129588
11. Guilford FT, Hope J. Deficient glutathione in the pathophysiology of mycotoxin-related illness. Toxins (Basel). 2014;6(2):608-23. http://www.ncbi.nlm.nih.gov/pubmed/24517907

*(End of Main Presentation)*

## *Presentation Speaker: Meet Melissa Fritchle!*

Melissa Fritchle LMFT is a licensed marriage and family therapist, sex therapist and sex educator in Santa Cruz, CA. Her focus is holistic, always honoring the integration of the mind, body and spirit and diversity. She teaches for two Bay Area graduate programs in Counseling Psychology and travels in the US & internationally to provide trainings. In 2011, she was awarded the Sexual Intelligence award for her groundbreaking work providing sex positive training for counselors and caregivers in Uganda. This year she worked in Kenya with a group of priests and nuns addressing sex positive approaches to sexual issues within the clergy. She is expanding her blog into a book, The Conscious Sexual Self Workbook, due to be published this year.

*(End of Meet Melissa Fritchle!)*

# Secondary Presentation by Melissa Fritchle

*"Sexual Vitality as You Age"*

Your relationship with your sexuality changes and grows as you do…hopefully. But sometimes we get stuck, hoping what worked before will work again. You will have to accept change, but you can also stay vital, sexually active, and in tune with this potent part of who you are. We will discuss the rises and falls of libido and desire, the possibility and the hype of sexual enhancement drugs, and what actually improves sexual health. This is a good time to get specific tips about erectile function, sore backs, and hormone levels and more.

*(End of Secondary Presentation)*

## About Smart Life Forum

Smart Life Forum, Inc. is a 501(c)(3) California nonprofit corporation whose primary mission is to provide credible health education to the public with an emphasis on optimal wellness, anti-aging medicine, and longevity.

Annual memberships in Smart Life Forum, Inc. and charitable donations are tax deductible to the extent allowed by law. For information on how to join or make a donation, please visit our website: www.SVHI.com.

For questions, please contact Susan Downs at susanrdowns@hotmail.com.

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