



# December 2016 NWIA Members' Newsletter

## Events

- 25 Dec Christmas Day
- 31 Dec New Year's Eve
- 1 Jan New Year's Day
- 3 Jan Festival of Sleep Day
- 11 Jan Make Your Dreams Come True Day
- 23 Jan Measure Your Feet Day
- 26 Jan Australia Day

## Upcoming Conferences

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***Don't let this December newsletter be your last – renew your membership to ensure it continues to come to you. 2017 membership fees due January 1 - watch out for your renewal notice coming to you very soon.***



December Floral Emblem : Poinsettia

## PRESIDENT'S MESSAGE

Greetings Members and Readers,

Yes, as written about in the last 2 month's messages the laborious and tedious clean out of my office before recarpeting continues. However the surprises keep coming regularly enough to keep me soldering on.

A book (not lost before the clean up) I regularly re-read a couple of times a year (one being now) is 'High Level Wellness' (Halbert Louis Dunn MD., Ph.D., R.W.Beatty Ltd, Arlington Virginia, 1961, ninth printing 1973). One reason I do this is because, despite being penned 55 years ago, one is struck by its relevance to the present.

The surprise coincidence this month I wish to impart, is that in my clean out this week I uncovered the transcript of 'Remarks of Valena Boyd at the Memorial Service for Halbet L. Dunn, November 29, 1975'. This transcript I had attained at a National Wellness Institute Conference session a number of years ago presented by one of NWIA's Honorary members, Dr Jack Travis. He had recently spoken with members of Dr. Dunn's family and presented a 'Biographical Sketch of Halbet L Dunn'. Jack reports that his daughter-in-law describes him as a 'handsome dude' and his draft card shows him to be just over 5'8" (173cm) with brown hair, blue eyes and ruddy complexion. Born May 17 1896 in New Paris, Ohio Dr Dunn, while during his time (1925 – 1960) working in various organisations in the area of statistics was known as 'The Architect of Vital Statistics Systems of the Western Hemisphere' (Obituary AJPH May 1977 Vol 67 No 5 p485), it is as the 'Father of the (modern) wellness movement' he is known to the all those in the Wellness movement – Lecturer and consultant in high-level wellness being his fifth career move. Dr Dunn passed away on Nov 14, 1975.

Dr Dunn's book is "A collection of twenty-nine talks on different aspects of the theme 'High-Level Wellness for Man and Society". The twenty-nine talks refer to 'a series of lectures he gave at the Unitarian Church in Arlington County, Virginia in the late 1950's'. The cover of the book states in part: "As far as we know. This book is absolutely unique. There has never been one before it on the subject of 'high-level wellness, nor one which treats so ably and convincingly the components (call them whatever you will) entering this dynamic state of full and effective living. High-Level Wellness is defined by the author as: *an integrated method of functioning which is oriented toward maximising the potential of which the individual is capable, within the environment where he(he) is functioning*".

While it did not garner much interest in the 1960's, a decade on the book, or one of its many editions, subsequently came into the hands of at least four of the future leaders of the wellness movement, some with links to NWIA. Finding it on the '\$2' table of the John Hopkins Medical Bookstore in 1972, subsequently lead Jack Travis to develop his well known 'Illness-Wellness Continuum', put aside continuation of his medical career and open the first US Wellness Centre in Mill Valley, California in 1975 (search "Halbert Dunn" in Jack's website for more information: <http://www.thewellspring.com/>). Don Ardell's (NWIA Honorary Member) 1976 book 'High Level Wellness' credited the title and concept to Dr Dunn while describing the Mill Valley Wellness Centre and other organisations. A few years ago Don Ardell spoke to Dr Dunn's widow - a search on 'Halbert Dunn' within Don's 'seek wellness' website (<http://www.seekwellness.com/wellness/index.htm>) finds 54 results. Bill Hettler (NWIA Honorary member) advanced the level of Dunn's work by being in 1976 one of the central instigators of the National Wellness Institute within the University of Wisconsin at Stevens Point, the site of the NWI office to this day. 'The National Wellness Institute's Halbert L. Dunn Wellness Award is the most prestigious award presented by the National Wellness Institute and is regarded as one of the highest honours in the health promotion and wellness fields. Recipients of the award have shown a dedication to wellness over the course of their lifetime, making many significant contributions and offering leadership that furthered the field of wellness.'

While I have missed writing this on the 40<sup>th</sup> anniversary of Dr Dunn's death (maybe wouldn't have if I had started the office clean up when first mentioned) I would like to impart a few words from the 4 1975 Memorial service eulogies supplied to me by Jack Travis.

Valena Boyd (relation of mine? – could be, but there are many Boyd's in USA I have discovered) – Assistant Professor, School of Nursing, Uni of Maryland, Baltimore from him: "One of the tangible applications of the High Level Wellness concept in Community Health Nursing is that of the study of the 'well' family and rates an approach to fulfilment.....the influencing force of his personality and philosophy is so dynamic, so real, so alive, that he seems more than a person; he is a vibrant, stimulating, motivating force, making a sometimes subtle but strong permanent difference in all our lives that he has touched with his writing, thinking and being."

Tulo Montenegro: "He never ceased to impress me. As a human being, it was impossible to ignore his vitality, his faith in the predominance of good over evil, his dedication to ideas, his courage to defend his convictions even in periods in which reason seemed to be forgotten, and his capacity to dispose of pomposity with a good and healthy laugh. He was a man of vision,

concerned with the future of mankind, and his contributions were many.”

A.Ross Fickler - U.S. Bureau of the Census: “.....I found him a man of great personal warmth, endowed with a wide-ranging, imaginative mind..... his exceptional work, both here and abroad, and later, after his retirement, of his major work - together with Elizabeth - in the fields of Planned Parenthood, Aging, and related areas.....His serenity and happiness reflected complete satisfaction with his way of life and with the absence of anything to cause concern. Indeed, he seemed to be the embodiment of "High-level Wellness."

Robert D Grove – National Office of Vital Statistics: ”.....An account of Dr. Dunn's work would be incomplete that does not note his delight in the more informal parties or talk sessions at which he and others would sit together, preferably on the floor, and with glasses in hand talk shop, joke, and generally have a good time. If you were looking for such a party at a professional meeting, his booming laugh would help you locate it. Dr. Dunn's exceptionally broad range of interests included the rapid growth of the world's population, the deteriorating quality of the environment, problems of older persons, educational methods, the need for a comprehensive definition of health and a comprehensive approach to health problems. All of these interests, and more, are discussed in his book *High Level Wellness*. Dr. Dunn was a pioneer, a nonconformist, the least bureaucratic person who ever directed a government program for 25 years. He had a real affinity for new ideas, great enthusiasm, impressive energy and a determined dedication to every idea or cause in which he believed. While everyone is in some degree unique, he was a most distinctively unique person who lived a highly creative life.”

Much of the above information I have gathered from my conversations and interactions with Jack Travis\*\*, and in hindsight, perhaps I should have solicited an article from him on this topic for this newsletter and I wrote of other things. However on this, the 41<sup>st</sup> anniversary of Halbert’s passing, I strongly encourage you to obtain and consume his book while reflecting on your own wellness knowledge, and on all you that you know of the progress (?) made in the Wellness area since his authorship of that book those 55 years ago. Where to obtain a copy?. Ebay? Gumtree? A paperback copy from Amazon is listed at \$2000. A few Australian University libraries (southern states) hold copies. It is still listed as in copyright, but one could at one time download a pdf one page at a time at <http://tinyurl.com/wellnessHLW> - but maybe not now. Happy reading.

On behalf of the members of NWIA Management Committee, I am taking the opportunity to wish all readers a most enjoyable festive season and trust you remain safe to return as a weller reader of this newsletter in 2017 because of it.

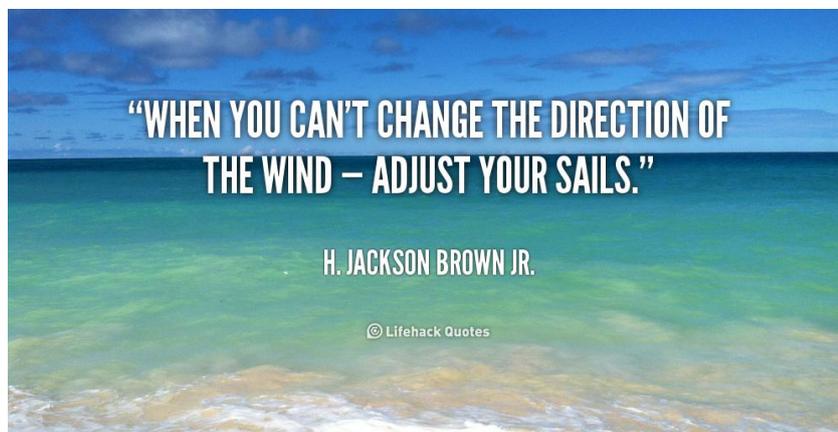


**Bob Boyd**

**NWIA PRESIDENT**

\*\* When going to the Amazon website to purchase anything, if you type ‘Smile’ in front of the URL (Smile.amazon.com), if it is a ‘Smile eligible’ purchase, a half percent of the cost will be donated to charity. If you wish to attribute your donation to Jack’s charity, type in “Alliance for Transforming the Lives of Children” (Incorporated in Texas) – this will assist him launch their new program ‘Connected couples/Thriving families’” – Thank you in advance.

## Quote For The Month



# International Wellness Connections

This is the 44th article of a series featuring information from International Wellness Practitioners about the state of Wellness in their country of residence. This and any previous International Connections monthly article has appeared in the National Wellness Institute (USA) monthly newsletter, at least 12 months previous to it appearing in this publication.

NWIA extends a sincere thank you to the authors for their contributions to the NWIA newsletter.

## [A Dietary Dilemma and The Slow Food Response: A Personal Experience](#)

*Posted By NWI, Tuesday, December 1, 2015*

**Rod Lees**

**B.SOC.WK, DIP.ED.PSYCH.,CERT.TEACH, MAASW**

**Australia**

Recently, my wife Karyn and I visited one of those so-called health retreats located in the Sunshine Coast Queensland hinterland. I must admit that I took a bit of convincing. I was thinking that I could be just as happy and healthy in our new home in Noosa Heads and not have to spend the big bucks.

Anyway, Karyn needed to get away for a break and who was I to argue against the prospect of a lovely week of rest and relaxation in the bush, with lots of exercise, massages, and wonderful food.

Now it was the food side of the experience that first struck me as different. I suppose we were both expecting a fairly strict regime of vegan/vegetarian eating. I was prepared for this, and thought it wouldn't do me any harm, especially since our good mate and wellness guru, Dr. Don Ardell and his lovely wife, Carol, had been heading down this track for the last five years. Don was still winning world titles in the triathlon, so it must have something going for it.

Much to my surprise, I was served meat for breakfast, lunch, and dinner. We soon learned that the health retreat had retreated from the vegan regime and were now following the increasingly popular high fat, low carbohydrate diet. We listened to lectures and watched films like "Cereal Killers" ([cerealkillersmovie.com](http://cerealkillersmovie.com)), all designed to convince us that low fat was on the out and coconut oil was the new magic elixir for more energy, good health, and weight loss. It was very confusing.

It appears that the argument goes back to the 1950s, when the debate raged around the scientific community over whether fat or sugar was the cause of increasing levels of heart disease. In the end, partly due to some apparently dodgy (<http://thebigfatsurprise.com/wp-content/uploads/2014/01/AJCN-Review.pdf>) selective research by Ancel Keys, the low fat, high carb diet won the day. In 1977, the United States dietary goals for Americans were based on a high carb, low fat diet ([http://zerodisease.com/archive/Dietary\\_Goals\\_For\\_The\\_United\\_States.pdf](http://zerodisease.com/archive/Dietary_Goals_For_The_United_States.pdf)). The rest of the western world followed. The problem was that the food manufacturers replaced the fat with sugar and the obesity levels are going through the roof.

Some call the new regime of high fat, low carb as "Paleo," while the purists, led by South African sports scientist, Professor Tim Noakes, label their method of eating as "Banting" ([www.realmealrevolution.com](http://www.realmealrevolution.com)).

It doesn't take long via a quick Google search to find lots of critics of the "Banting" diet ([www.kellylynch.co.za/banting-not-balanced-dont-care-anyone-says](http://www.kellylynch.co.za/banting-not-balanced-dont-care-anyone-says)), and many point to the fact that there hasn't been enough time or research to examine the long term effects of following such a regime.

So, mainstream dietary advice is still sticking to the low fat message with only minor adjustments to the famous food pyramid (<http://nutritionaustralia.org/national/resource/healthy-eating-pyramid>).

At the same time as this debate has been raging in the dietary community, the World Health Organisation published findings in relation to the dangers of processed meat in particular and red meat in general (<http://www.who.int/features/qa/cancer-red-meat/en/>). It has caused quite a stir.

Not to be outdone, the vegan advocates are championing a movie called "Cowspiracy" ([www.cowspiracy.com](http://www.cowspiracy.com)). This points to

the global warming dangers of large industrial animal production. The conclusion of the movie is that the only way for the planet to survive is that we all need to become vegan. It is worth a watch, but then consult Google again for the counter arguments ([www.target100.com.au/Hungry-for-Info/Target-100.../Cowspiracy](http://www.target100.com.au/Hungry-for-Info/Target-100.../Cowspiracy)).

When I become confused over dietary discussions, I often go to Glenn Cardwell ([www.glenncardwell.com](http://www.glenncardwell.com)), author of *Gold Medal Nutrition* and lecturer in Sports Nutrition.

Glenn's response to my dilemma is as follows:

*"Nutrition is a science, with minor refinements every decade or so. Despite that we still say pretty much the same things year after year.*

*But who cares?*

*Because nutrition is fashion and therefore, by definition, must change every 6-12 months to drive food industry, pop-nutritionists and the (insert something fearful here)-free cookbook sellers.*

*So, the public face of nutrition is 99.3% fashion, 0.7% science.*

*I'm resigned to it.*

*We have a choice:*

*1. Eat wisely.*

*2. Follow the latest trend because everyone else is."*

While the debate rages, Karyn and I have joined the Slow Food movement ([www.slowfood.com](http://www.slowfood.com)). It started in Italy over ten years ago and now has at least 160 member countries. Slow food is the complete opposite of fast food and advocates good, clean, and fair food for all. It promotes healthy, seasonal, and local produce. Our lovely local Noosa group of over 100 members raises money for school vegetable gardens and promotes local small scale producers.

As I write, I am looking forward to an enjoyable Slow Food Sunday lunch at the Kin Kin State School.

Students at the school spend some part of each day working in the school garden. It happens during normal school hours, and yet, their academic results are near the top of the state.

On Fridays, the students use their produce to cook a meal for members of the local community. It costs \$7.00 for a three course meal and it is delicious.

Now I am not sure what is on the menu for the Slow Food lunch this Sunday, but the vegetables will come from the school garden. All the other ingredients will be local and seasonal and will be prepared by a Chef from Noosa in the Stephanie Alexander funded commercial kitchen housed in the school grounds.

I will eat whatever is served up to me and what a treat it will be.



*Rod Lees (Australia) has a background in teaching, social work, and management. He is a Master Instructor MHFA. His teaching career covers primary, secondary, TAFE and university. He currently works as a consultant in the areas of health and wellness, with a specific interest in both mental and physical health. Rod offers programs in Workplace Wellness, Adult and Youth Mental Health First Aid, Managing Change, Conducting Difficult Conversations. He works as a Personal Trainer, and offers support for individuals and organisations in the areas of mediation, team conflict resolution, and employee rehabilitation. [rod@livingbetterlonger.com.au](mailto:rod@livingbetterlonger.com.au)*

# How Social Media Impacts Consumer Spending



For businesses using social media, posts with high engagement have the greatest

impact on customer spending, according to new research from the University at Buffalo School of Management.

Published in the *Journal of Marketing*, the study assessed social media posts for sentiment (positive, neutral or negative), popularity (engagement) and customers' likelihood to use social media, and found the popularity of a social media post had the greatest effect on purchases.

VIDEO: <https://www.youtube.com/watch?v=eHun9nC1Cig>.

"A neutral or even negative social media post with high engagement will impact sales more than a positive post that draws no likes, comments or shares," says study co-author Ram Bezawada, PhD, associate professor of marketing in the UB School of Management. "This is true even among customers who say their purchase decisions are not swayed by what they read on social media."

PHOTO: <http://bit.ly/2f5io9m>.

The researchers studied data from a large specialty retailer with multiple locations in the northeast United States. They combined data about customer participation on the company's social media page with in-store purchases before and after the retailer's social media engagement efforts. They also conducted a survey to determine customers' attitudes toward technology and social media.

The study also found that businesses' social posts significantly strengthen the effect of traditional television and email marketing efforts. When social media is combined with TV marketing, customer spending increased by 1.03 percent and cross buying by 0.84 percent. When combined with email marketing, customer spending increased by 2.02 percent and cross buying by 1.22 percent. Cross buying refers to when a customer purchases additional products or services from the same firm.

"The clear message here is that social media marketing matters, and managers should embrace it to build relationships with customers," says Bezawada. "Developing a community with a dedicated fan base can lead to a definitive impact on revenues and profits."

Bezawada collaborated on the project with Ashish Kumar, assistant professor of marketing at Aalto University; Rishika Rishika, clinical assistant professor of marketing at the University of South Carolina; Ramkumar Janakiraman, associate professor of marketing at the University of South Carolina; and P.K. Kannan, the Ralph J. Tyser Professor of Marketing Science at the University of Maryland.

The UB School of Management is recognized for its emphasis on real-world learning, community and economic impact, and the global perspective of its faculty, students and alumni. The school also has been ranked by Bloomberg Businessweek, Forbes and U.S. News & World Report for the quality of its programs and the return on investment it provides its graduates. For more information about the UB School of Management, visit <http://mgt.buffalo.edu>.

<http://www.buffalo.edu/news/news-releases.host.html/content/shared/mgt/news/how-social-media-impacts-consumer-spending.detail.html>



# 'Nice' Women Earn Less Than Their More Assertive Counterparts

New Tel Aviv University study confirms that nice women finish last

A new study finds that the nicer, or more agreeable, a woman is at work, the lower her salary is likely to be. The new research, published in *The European Journal of Work and Organizational Psychology*, examines status inconsistencies between men and women through the lens of traditional male and female characteristics.

Dominant, assertive women, who clearly express their expectations and do not retreat from their demands, are compensated better than their more accommodating female peers. According to the researchers, the same goes for dominant men versus their more conciliatory male counterparts -- but even dominant women earn far less than all of their male colleagues, dominant or otherwise.

The study was conducted by Prof. Sharon Toker of the Tel Aviv University Coller School of Business Management, Dr. Michal Biron of the Department of Business Administration at the University of Haifa, and Dr. Renee De Reuver of the Department of Human Resource studies at Tilburg University in The Netherlands.

## **Sugar and spice and everything nice?**

"We have witnessed dramatic changes in the definition of traditionally male and female qualities over the past several decades. But some people still really cling to the idea that some qualities are exclusively male and exclusively female," Prof. Toker said. "Some professional women are still afraid to exhibit a trait that's incongruent with presumed notions of female character. The result is financial retribution."

"We found that women aren't aware that more agreeable women are being punished for being nice," said Dr. Biron. "The nice women we polled in our study even believed they were earning more than they deserved."

For the purpose of their study, the researchers surveyed 375 men and women at a Dutch multinational electronics company with 1,390 employees. The subjects were selected at random from all 12 of the company departments.

The researchers used both objective and subjective criteria for the study. For objective data, they analyzed tenure, education, and performance data relative to income and promotion statistics. For subjective data, they examined how the individual perceived the fit between their education, experience, and performance on the one hand, and their income and rank on the other.

## **More effort for less return**

"We found that women were consistently and objectively status-detracted, which means they invest more of themselves in their jobs than they receive; and are compensated less than their male colleagues across the board," Dr. Biron said.

"But dominant women were not punished for reflecting such female-incongruent traits as extroversion and assertiveness," Dr. De Reuver said. "In fact, we found that the more dominant a woman is at work, the less likely she is to be status-detracted. We found a similar pattern among men -- the more dominant a man is, the more likely he is to be better compensated. But alarmingly, dominant women were still found to earn less than even the most agreeable men who aren't promoted."

In the subjective part of the study, nearly all the employees responded that they felt dissatisfied with their input-compensation ratio, but agreeable and non-dominant women answered that they felt they earned too much.

"This blew our minds," said Prof. Toker. "The data shows that they earn the least -- far less than what they deserve. And they

rationalize the situation, making it less likely that they will make appropriate demands for equal pay."

The researchers hope to replicate the study in Israel and the U.S.

Tel Aviv University (TAU) is inherently linked to the cultural, scientific and entrepreneurial mecca it represents. It is one of the world's most dynamic research centers and Israel's most distinguished learning environment. Its unique-in-Israel multidisciplinary environment is highly coveted by young researchers and scholars returning to Israel from post-docs and junior faculty positions in the US.

American Friends of Tel Aviv University (AFTAU) enthusiastically and industriously pursues the advancement of TAU in the US, raising money, awareness and influence through international alliances that are vital to the future of this already impressive institution.

<https://www.aftau.org/news-page-business--management?=&storyid4701=2305&nics4701=3>



## Rallies, Protests, And Black Friday: Physics Finds Dangers Hiding In Plain Sight

Inspired by the way people move at heavy metal concerts, an international team of researchers from Uppsala University and Harvard University have learned how to spot danger zones in mass gatherings before disaster strikes.

Publishing online in the journal [\*Physical Review Letters\*](#) Nov. 23rd, Uppsala University's graduate student Arianna Bottinelli, and professor in applied mathematics David Sumpter, have developed computational tools to predict large-scale collective motion in simulated mass gatherings.

The team started with simulated crowds so they could reliably keep track of everyone's position. "From this data, we're able to predict the most risky collective motions that naturally arise in a dense shoulder-to-shoulder crowd," says first author Bottinelli, who will defend her PhD thesis in applied mathematics on the 25th of November.

Sumpter adds, "The next step is to apply these techniques to real-time video data. If we can use computer vision to track people, then our analytical tools can warn event planners of potential hazards before they arise."

Overwhelmingly, mass gatherings are held without incident. But sometimes things go wrong. People can be trampled or asphyxiated by crushing pressures generated by the crowd itself. These types of collective motion have been previously studied, but the new physics-based insights in this work provide an explanation for how these disasters occur in the first place.

Bottinelli, who lead the research, describes it like this: "It all comes down to way people gather into a randomly packed group. Physical body-to-body contacts are the foundation for potentially dangerous collective motion. Our work shows how to identify the emergent risks based on which people are touching each other."

The project started as a study in the way people "dance" at heavy metal concerts. These "mosh pits" forcefully separate the crowd, creating areas near the stage where the crowd is densely packed.

"We were staring at the concert data when we realized there were direct similarities with rallies, protests, and Black Friday sales events," said Dr. Silverberg, postdoctoral fellow at Harvard University, who has been collaborating on this work. "The more we dug, the richer the physics became. Pretty soon we found ideas from material science and field theory could be applied directly to human crowds in extreme situations," he adds.

The researchers noted that awareness is the key to safety. With the upcoming Black Friday shopping holiday in America and the general increase in protest events across the globe, there are increasingly hidden dangers in crowds. The team's conclusions and suggestion to the public is to "keep an eye on your surroundings - if you're packed densely, then there's an inherent risk, and the best way to protect yourself and others is to spread out and move to an area with more physical space" the team concluded.

The research, "Emergent structural mechanisms for high-density collective motion inspired by human crowds" was supported by the Centre for Interdisciplinary Mathematics in Uppsala University, Sweden.

Related video: <https://youtu.be/nAiGUZQPJJw>



## Oceans Act As 'Heat Sink'

Study concludes so-called global warming 'hiatus' was actually a redistribution of energy; oceans absorbed the heat.

A new multi-institutional study of the so-called global warming "hiatus" phenomenon -- the possible temporary slowdown of the global mean surface temperature (GMST) trend said to have occurred from 1998 to 2013 -- concludes the hiatus simply represents a redistribution of energy within the Earth system, which includes the land, atmosphere and the ocean.

In a paper published today in *Earth's Future*, a journal of the American Geophysical Union, lead author Xiao-Hai Yan of the University of Delaware, Newark; along with leading scientists from the National Oceanic and Atmospheric Administration (NOAA), National Center for Atmospheric Research (NCAR), National Aeronautics and Space Administration (NASA), Scripps Institution of Oceanography, and University of Washington, discuss new understandings of the global warming "hiatus" phenomenon.

In particular, the researcher's point to the prominent role played by the global ocean in absorbing the extra heat from the atmosphere by acting as a "heat sink" as an explanation for the observed decrease in GMST, which is considered a key indicator of climate change.

"The hiatus period gives scientists an opportunity to understand uncertainties in how climate systems are measured, as well as to fill in the gap in what scientists know," explained Yan, Mary A.S. Lighthipe Chaired Professor in the College of Earth, Ocean, and Environment and director of UD's Center for Remote Sensing.

"Individually, each of us carries some research into this topic and many of my co-authors are leading scientists who have studied this topic from various and often diverse angles. The hiatus in the rise of global surface temperature is over, but understanding the processes involved helps us with future predictions" continued co-author Kevin Trenberth of National Center for Atmospheric Research (NCAR).

The paper grew out of a special US CLIVAR panel session at the 2015 AGU fall meeting and includes the following distinguished co-authors:

- Tim Boyer, NOAA /National Centers for Environmental Information (co-lead author),
- Kevin Trenberth, NCAR,
- Thomas R. Karl, independent consultant,
- Shang-Ping Xie, Scripps Institution of Oceanography,
- Veronica Nieves, NASA's Jet Propulsion Laboratory (NASA-JPL) and University of California Los Angeles,
- Ka-Kit Tung, University of Washington, and
- Dean Roemmich, Scripps Institution of Oceanography.

### Where is the missing heat?

While Yan said it is difficult to reach complete consensus on such a complex topic, after a thorough review of the literature and much discussion and debate, there are a number of key points on which these leading scientists concur:

- From 1998 to 2013, the rate of global mean surface warming, which some call the "global warming hiatus," slowed.
- Natural variability plays a large role in the rate of global mean surface warming on decadal time scales.

- Improved understanding of how the ocean distributes and redistributes heat will help the scientific community better monitor the Earth's energy budget.

Earth's energy budget is a complex calculation of how much solar energy enters our climate system from the sun and what happens to it: how much is stored by land, in the ocean or in the atmosphere.

"To better monitor the Earth's energy budget, and its consequences, the ocean is most important to consider because the amount of heat it can store is extremely large when compared to the land or atmospheric capacity," said Yan.

According to the paper, arguably, the most appropriate single variable in the Earth's system that can be used to monitor global warming is ocean heat content integrated from the surface to different layers and to the bottom of the ocean.

## **Charting future research**

In the near term, the scientists hope this paper will lay the foundation for future research in the global change field. To begin, they suggest the climate community replace the term "global warming hiatus" with "global surface warming slowdown" to eliminate confusion.

"This terminology more accurately describes the pause in the increase of the ocean's global mean surface temperature in the late 20th century," Yan said.

The scientists also called for continued support of current and future technologies for ocean monitoring as a means to reduce observation errors in sea surface temperature and ocean heat content. This includes maintaining Argo, the main system for monitoring ocean heat content, and the development of Deep Argo to monitor the lower half of the ocean; the use of ship-based subsurface ocean temperature monitoring programs; advancements in the use of robotic technologies such as autonomous underwater vehicles to monitor marginal seas and shelf and coastal regions; and further development of real- or near-real-time deep ocean remote sensing methods.

Yan's research group reported in a 2015 paper that some coastal oceans' (e.g. U.S. East Coast, China Coast) response to the recent global surface warming slowdown are three times larger than what is found in the open ocean.

"Although these regions represent only a fraction of the ocean volume, the changing rate of ocean heat content is faster here and real time data and more research are needed to quantify and understand what is happening," Yan said.

Variability and heat sequestration over specific regions (i.e. Pacific, Atlantic, Indian, Southern Oceans, etc.) was also discussed and requires further investigation. However, there is broad agreement among the scientists and in the literature that the slowdown of GMST increase from 1998-2013 was the "result of increase uptake of heat energy by the global ocean during those years."

This work was supported through various funding sources including the National Science Foundation, NASA, NOAA and NASA-JPL.

<http://www.udel.edu/udaily/2016/november/global-warming-hiatus/>



## Practice Testing Protects Memory Against Stress

Learning by taking practice tests, a strategy known as retrieval practice,

can protect memory against the negative effects of stress

Learning by taking practice tests, a strategy known as retrieval practice, can protect memory against the negative effects of stress, report scientists from Tufts University in a new study published in *Science* on Nov. 25.

In experiments involving 120 student participants, individuals who learned a series of words and images by retrieval practice showed no impairment in memory after experiencing acute stress. Participants who used study practice, the conventional method of re-reading material to memorize it, remembered fewer items overall, particularly after stress.

"Typically, people under stress are less effective at retrieving information from memory. We now show for the first time that the right learning strategy, in this case retrieval practice or taking practice tests, results in such strong memory representations that even under high levels of stress, subjects are still able to access their memories," said senior study author Ayanna Thomas, Ph.D., associate professor and director of the graduate program in psychology at Tufts.

"Our results suggest that it is not necessarily a matter of how much or how long someone studies, but how they study," said Amy Smith, graduate student in psychology at Tufts and corresponding author on the study.

The research team asked participants to learn a set of 30 words and 30 images. These were introduced through a computer program, which displayed one item at a time for a few seconds each. To simulate note taking, participants were given 10 seconds to type a sentence using the item immediately after seeing it.

One group of participants then studied using retrieval practice, and took timed practice tests in which they freely recalled as many items as they could remember. The other group used study practice. For these participants, items were re-displayed on the computer screen, one at a time, for a few seconds each. Participants were given multiple timed periods to study.

After a 24-hour break, half of each group was placed into a stress-inducing scenario. These participants were required to give an unexpected, impromptu speech and solve math problems in front of two judges, three peers and a video camera. Participants took two memory tests, in which they recalled the words or images they studied the previous day. These tests were taken during the stress scenario and twenty minutes after, to examine memory under immediate and delayed stress responses. The remaining study participants took their memory tests during and after a time-matched, non-stressful task.

Stressed individuals who learned through retrieval practice remembered an average of around 11 items out of each set of 30 words and images, compared to 10 items for their non-stressed counterparts. Participants who learned through study practice remembered fewer words overall, with an average of 7 items for stressed individuals and an average of a little under 9 items for those who were not stressed.

"Even though previous research has shown that retrieval practice is one of the best learning strategies available, we were still surprised at how effective it was for individuals under stress. It was as if stress had no effect on their memory," Smith said. "Learning by taking tests and being forced to retrieve information over and over has a strong effect on long-term memory retention, and appears to continue to have great benefits in high-stakes, stressful situations."

While a robust body of evidence has previously shown that stress impairs memory, few studies have examined whether this relationship can be affected by different learning strategies. The current results now suggest that learning information in an effective manner, such as through retrieval practice, can protect memory against the adverse effects of stress.

Although the research team used an experimentally verified stress-inducing scenario (Trier Social Stress Test) and measured participant stress responses through heart-rate monitors and standardized self-reported questionnaires, they note that stress effects are variable between individuals and additional work is needed to expand on their results. The team is now engaged in studies to replicate and extend their findings, including whether retrieval practice can benefit complex situations such as learning a foreign language or stressful scenarios outside of a testing environment.

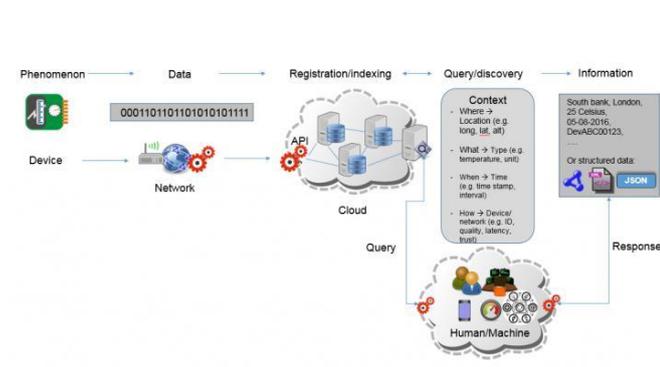
"Our one study is certainly not the final say on how retrieval practice influences memory under stress, but I can see this being applicable to any individual who has to retrieve complex information under high stakes," Thomas said. "Especially for educators, where big exams can put a great deal of pressure on students, I really encourage employing more frequent more low-stakes testing in context of their instruction."

Smith et al. "Retrieval practice protects memory against acute stress." *Science* (2016). DOI:10.1126/science.aah5067.

## About Tufts University

Tufts University, located on campuses in Boston, Medford/Somerville, and Grafton, Massachusetts, and in Talloires, France, is recognized among the premier research universities in the United States. Tufts enjoys a global reputation for academic excellence and for the preparation of students as leaders in a wide range of professions. A growing number of innovative teaching and research initiatives span all campuses, and collaboration among the faculty and students in the undergraduate, graduate and professional programs across the university is widely encouraged.

<http://now.tufts.edu/news-releases/practice-testing-protects-memory-against-stress>



# Internet Of Things (Iot) Will Demand A Step-Change In Search Solutions

New research by University of Surrey (UK) and Wright State University (USA) reveal how internet search mechanisms will need to change to support the (IoT)

- Experts in next generation communications outline how internet search mechanisms will need to change to support the Internet of Things (IoT) whereby billions of devices will become connected
- Complex future technologies such as smart cities, autonomous cars and environmental monitoring will demand machine-to-machine searches that are automatically generated depending on location, preferences and local information
- New requirements will include being able to access numerical and sensory data, and providing secure ways of accessing data without exposing the devices to hackers
- An article highlighting the latest research in this area by academics at the University of Surrey and Wright State University (USA) has been published in *IEEE Intelligent Systems*

A recent article published in *IEEE Intelligent Systems* highlights the requirements the IoT will place on search engines and brings together the latest research being carried out in this field. 'On Searching the Internet of Things: Requirements and Challenges' has been written by leading researchers working in the field of next generation communications at the University of Surrey's Institute of Communication Systems (home of the 5G Innovation Centre) and Ohio Center of Excellence in Knowledge Enabled Computing (Kno.e.sis) at Wright State University (USA).

With more and more IoT devices being connected to the internet, and smart city data projects starting to be implemented, there is an urgent need to develop new search solutions which will allow information from IoT sources to be found and extracted. While existing search engines have ever more sophisticated and effective ways of crawling through web pages and searching for textual data, the article argues that they will not be effective in accessing the type of numerical and sensory data which IoT devices will need to gather.

The article states that whereas in the past, human users have searched for information on the web, the IoT will see more machine-to-machine searches which are automatically generated depending on location, preferences and local information. Autonomous vehicles, for example, will need to automatically collect data (such as traffic and weather information) from various sources without a user being involved.

The IoT also presents a challenge in terms of cyber security. Applications which rely on public data, such as smart city technologies, need to be very accessible to make them available to a wide range of applications and services. Search mechanisms for these devices will need to provide efficient methods of indexing, crawling and finding data while ensuring the data is safe from hackers.

The University of Surrey's 5G Innovation Centre - the UK's largest hub for research into next generation communications- is conducting a number of projects in the field of IoT search engines. These include developing search mechanisms that describe the sources of the data required, and developing algorithms for clustering and analysis of IoT 'time-series' data.

The article's lead author Dr Payam Barnaghi (a Reader in Machine Intelligence at the University of Surrey), says: "Search engines have come a long way since their original purpose of locating documents, but they still lack the connection between social, physical and cyber data which will be needed in the IoT era. IoT data retrieval will require efficient and scalable indexing and ranking mechanisms, and also integration between the services provided by smart devices and data discovery.

"IoT technologies such as autonomous cars, smart cities and environmental monitoring could have a very positive impact on millions of lives. Our goal is to consider the many complex requirements and develop solutions which will enable these exciting new technologies."

The article's second author, Professor Amit Sheth of Kno.e.sis, comments: "I see tremendous opportunities to effectively utilize physical (especially IoT), cyber and social data by improving the abilities of machines to convert diverse data into meaningful abstractions that matter to human experiences and decision making. IoT search, particularly for devices or machines to interact with each other to find and aggregate relevant information on a human's behalf, will become a critical enabler."

'On Searching the Internet of Things: Requirements and Challenges' was published in *IEEE Intelligent Systems*.

<http://online.qmags.com/INTS1116/default.aspx?sessionID=568BB22FBF05B4747AA294043&cid=3257006&eid=20075&pg=74&mode=2#pg74&mode2>



## Aspartame May Prevent, Not Promote, Weight Loss By Blocking Intestinal Enzyme's Activity

A team of Massachusetts General Hospital (MGH) investigators has found a possible mechanism explaining why use of the sugar substitute aspartame might not promote weight loss. In their report published online in *Applied Physiology, Nutrition and Metabolism*, the researchers show how the aspartame breakdown product phenylalanine interferes with the action of an enzyme previously shown to prevent metabolic syndrome – a group of symptoms associated with type 2 diabetes and cardiovascular disease. They also showed that mice receiving aspartame in their drinking water gained more weight and developed other symptoms of metabolic syndrome than animals fed similar diets lacking aspartame. "Sugar substitutes like aspartame are designed to promote weight loss and decrease the incidence of metabolic syndrome, but a number of clinical and epidemiologic studies have suggested that these products don't work very well and may actually make

things worse,” says Richard Hodin, MD, of the [MGH Department of Surgery](#), the study’s senior author. “We found that aspartame blocks a gut enzyme called intestinal alkaline phosphatase (IAP) that we previously showed can prevent obesity, diabetes and metabolic syndrome; so we think that aspartame might not work because, even as it is substituting for sugar, it blocks the beneficial aspects of IAP.”

In a [2013 study](#) published in *Proceeding of the National Academy of Sciences*, Hodin’s team found that feeding IAP to mice kept on a high-fat diet could prevent the development of metabolic syndrome and reduce symptoms in animals that already had the condition. Phenylalanine is known to inhibit the action of IAP, and the fact that phenylalanine is produced when aspartame is digested led the researchers to investigate whether its inhibitory properties could explain aspartame’s lack of a weight-loss effect.

In a series of experiments the team first found that the activity of IAP was reduced when the enzyme was added to a solution containing an aspartame-sweetened soft drink but remained unchanged if added to a solution with a sugar-sweetened beverage. IAP is primarily produced in the small intestine, and the researchers found that injecting an aspartame solution into segments of the small intestines of mice significantly reduced the enzyme’s activity. In contrast, IAP activity remained unchanged in bowel segments injected with a saline solution.

To better represent the effects of consuming beverages or other products containing aspartame, the researchers followed four groups of mice for 18 weeks. Two groups were fed a normal diet, one receiving drinking water with aspartame, the other receiving plain water. The other two groups were fed a high-fat diet, along with either aspartame-infused or plain water. Animals in the normal diet group that received aspartame consumed an amount equivalent to an adult human’s drinking about three and a half cans of diet soda daily, and aspartame-receiving animals in the high-fat group consumed the equivalent of almost two cans.

At the end of the study period, while there was little difference between the weights of the two groups fed a normal diet, mice on a high-fat diet that received aspartame gained more weight than did those on the same diet that received plain water. Aspartame-receiving mice in both diet groups had higher blood sugar levels than did those fed the same diets without aspartame, which indicates glucose intolerance, and both aspartame-receiving groups had higher levels of the inflammatory protein TNF-alpha in their blood, which suggests the kind of systemic inflammation associated with metabolic syndrome.

“People do not really understand why these artificial sweeteners don’t work. There has been some evidence that they actually can make you more hungry and may be associated with increased calorie consumption. Our findings regarding aspartame’s inhibition of IAP may help explain why the use of aspartame is counterproductive,” says Hodin, who is a professor of Surgery at Harvard Medical School. “While we can’t rule out other contributing mechanisms, our experiments clearly show that aspartame blocks IAP activity, independent of other effects.”

The co-lead authors of the paper are Sarah Gul and Anna Hamilton, MGH Department of Surgery. Additional co-authors are Alexander Munoz, Tanit Phupitakphol, Wei Liu, MD, Sanjiv Hoyoju, Konstantinos Economopoulos, MD, Sara Morrison, MD, Dong Hu, Weifeng Zhang, Mohammad Hadi Gharedaghi, MD, Haizhong Huo, and Sulaiman Hamarneh, MBBS, all MGH Surgery.

Massachusetts General Hospital, founded in 1811, is the original and largest teaching hospital of Harvard Medical School. The [MGH Research Institute](#) conducts the largest hospital-based research program in the nation, with an annual research budget of more than \$800 million and major research centers in HIV/AIDS, cardiovascular research, cancer, computational and integrative biology, cutaneous biology, human genetics, medical imaging, neurodegenerative disorders, regenerative medicine, reproductive biology, systems biology, photomedicine and transplantation biology. The MGH topped the 2015 Nature Index list of health care organizations publishing in leading scientific journals and earned the prestigious 2015 Foster G. McGaw Prize for Excellence in Community Service. In August 2016 the MGH was once again named to the Honor Roll in the U.S. News & World Report list of "America’s Best Hospitals."

<http://www.massgeneral.org/about/pressrelease.aspx?id=2016>



# Recipe of the Month: Bean Salad With Balsamic Vinaigrette

By Mayo Clinic Staff

## Dietitian's tip:

Garbanzos — also known as chickpeas — and black beans are an excellent source of soluble fiber, the type of fiber that can help control blood cholesterol and blood sugar levels.

Serves 6

## Ingredients

For the vinaigrette

1. 2 tablespoons balsamic vinegar
2. 1/3 cup fresh parsley, chopped
3. 4 garlic cloves, finely chopped
4. Ground black pepper, to taste
5. 1/4 cup extra-virgin olive oil
6. 1 can (15 ounces) garbanzos, rinsed and drained
7. 1 can (15 ounces) black beans, rinsed and drained
8. 1 medium red onion, diced
9. 6 lettuce leaves
10. 1/2 cup celery, finely chopped

## Directions

To make the vinaigrette, in a small bowl, whisk together the balsamic vinegar, parsley, garlic and pepper. While whisking, slowly add the olive oil. Set aside.

In a large bowl, combine the beans and onion. Pour the vinaigrette over the mixture and toss gently to mix well and coat evenly. Cover and refrigerate until served.

To serve, put 1 lettuce leaf on each plate. Divide the salad among the individual plates and garnish with chopped celery. Serve immediately.

## Nutritional analysis per serving

**Serving size :About 1/2 cup**

- Total carbohydrate 25 g
- Dietary fiber 6 g
- Sodium 170 mg
- Saturated fat 1 g
- Total fat 10 g
- Trans fat 0 g
- Cholesterol 0 mg
- Protein 7 g
- Monounsaturated fat 7 g
- Calories 218
- Added sugars 0 g

<http://www.mayoclinic.org/healthy-lifestyle/recipes/bean-salad-with-balsamic-vinaigrette/rcp-20049640>

# Merry Christmas



**Christmas means different things to all of us, but hopefully it provides us with the opportunity to take a break, however small, from our normal routines and breathe, let go and rejuvenate.**

**Thank you to everyone we've worked with this year.**

**Wishing you a wonderful Christmas and New Year's period, however you choose to celebrate, or just simply enjoy the chance to re-energise.**

**See you in 2017.**

**NWIA Management Committee**