epimonitor
THE EPIDEMIOLOGY MONITOR
A monthly update covering people, events, research and key developments

Biomedical And Epidemiologic Research Found Lacking Impact On Population Health

Senior Epidemiologists Speaking Out

A cluster of at least three papers have been published in recent weeks describing the failures of large biomedical and epidemiologic studies to yield useful public health results. In perhaps the most highly visible essay, Michael Joyner, Nigel Paneth, and John Ioannidis writing in a July issue of the Journal of the American Medical Association assert that the dominant thinking in much biomedical and epidemiologic research in recent years has been based on the idea that searching for associations between gene variants and diseases in large populations would lead to big improvements in health. The benefits from these approaches have been "mediocre", and have "largely failed," according to these authors.

Dominant Thinking

They elaborate on the dominant

- Lack continues on next page

Boston University Magazine Profiles Dynamic Dean

"The name Sandro Galea pops up a lot." That's the comment made by one of our writers in discussing possible topics for this month's issue. To better understand why this is so, subscribers need only read the latest issue of Bostonia, the Boston University (BU) quarterly magazine which published a revealing portrait of Galea, the Dean of the BU School of Public Health, in its recent issue. According to the magazine, "Galea's goal is to not only take BU to the forefront of public health, but to take forefront of public health to the forefront of American discourse." His approach seems to be paying dividends.

Background

Trained initially as a physician, Galea came to see from some of his early volunteer work overseas that he could have more impact by working on prevention at the population level rather than on treatment at the clinical

- Galea continues on page 7

In This Issue

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-Lack continued from page 1

thinking in biomedical research by identifying eight themes which have failed to deliver on expectations. The linked ideas, many of which make up the area of personalized or precision medicine, are:

1. Common diseases will be explained largely by a few DNA variants with strong associations to disease.

2. This knowledge will lead to improved diagnosis

3. Such knowledge will also drive preventive medicine

4. Pharmacogenetics will improve therapeutic decision making

5. Gene therapy will treat multiple diseases

6. A substantial increase in novel targets for drug development and therapy will ensue.

7. Stem cell therapy can treat common diseases.

8. Converting medical records to electronic formats will yield clinical and research value

In their essay entitled "What Happens When Underperforming Big Ideas In Research Become Entrenched?", the authors describe the failures and conclude that "none of these popular topics has had any measurable effect on population mortality, morbidity, or life expectancy in the United States.

New Approaches

The authors call for a re-evaluation of the current approaches and suggest that NIH 1) evaluate the benefits of the projects they fund using different criteria, especially reductions in morbidity and mortality, 2) sunset underperforming projects, and 3) focus more on basic science and the evaluation of drugs and therapies developed by the private sector.

"Pseudopod Epi"

This sobering assessment in JAMA was matched by another from the University of Pittsburgh's Lewis Kuller. Writing in the European Journal of Epidemiology in September, Kuller describes the limitations of what he calls "opportunistic or pseudopod epidemiology" "—the expansion of longitudinal epidemiological studies either vertically by adding new independent variables to evaluate the same dependent measures or horizontally which adds new dependent variables.

According to Kuller, "There is certainly nothing wrong with identification of large populations and measuring every known or unknown independent variable in a hope of finding a magic bullet that will lead to better drug or surgical therapies. It is not epidemiology, and based on past experience, it is unlikely to be very successful especially compared to epidemiological approaches."

- Lack continues on page 8

Scientists Weigh in on the Biggest Challenges Facing Science Today

"If you could change one thing about how science works today, what would it be and why?" This basic question was at the heart of a recent survey conducted by journalists at Vox.com intended to gain insight into the issues contributing to growing concern among scientists about the current state of academic science. They received answers from 270 scientists at all levels representing a variety of disciplines (though the majority were in biomedical fields) who in large part felt that current pressures and incentives for career survival are leading to bad science. The survey identified a number of major problems facing academic science. Here we summarize their conclusions, focusing on the most commonly cited issues.

Money Problem

All research requires financial support, and the struggle to find and maintain funding has long been the central obstacle most scientists face in their careers. Yet, recent trends have only made funding more difficult to obtain. The NIH budget plateaued in the early 2000's, and a combination of budget cuts, sequestration and inflationary losses since has resulted in a 22% decrease in the capacity of the NIH to fund research over the period from 2003-2015. The direct result of this funding shortage has been a dramatic increase in competition for grants. While 30% of NIH proposals were funded in 2000, currently less than 18% are successful, and survey respondents felt this intense competition for grants is having a profound effect on the science being conducted. Many argued that the pressure to publish and secure grant funding pushes scientists towards safer, more predictable studies and further from the type of long-term, riskier studies that tend to produce truly novel and important findings.

As Gary Bennett, a neuroscientist at Duke University, put it, funding "affects what we study, what we publish, the risks we (frequently don't) take." A number of respondents also pointed out that when federal and university funding is scarce, researchers tend to turn more to private industry for funding, creating ample opportunity for conflicts of interest. Marion Nestle, a food politics professor at New York University said, "With funding from NIH, USDA and foundations so limited...researchers feel obligated, or willingly seek, food industry support. The frequent result? Conflicts of interest."

Misguided Incentives

Many survey respondents argued that perverse incentives seriously undermine the quality of scientific research. The current state of both ultra-competitive funding and job markets has scientists under tremendous pressure to publish frequently and in high profile journals that require flashy results. This pressure can lead to subtle biases that can influence all phases of a research project from study design to data analysis and interpretation. A number of respondents felt that the current incentive structure rewards those who over-hype their

- Face continues on next page

"...current pressures and incentives for career survival are leading to bad science."

"...funding "affects what we study, what we publish, the risks we (frequently don't) take."

-Face continued from page 3

findings and chase statistical significance.

One such scientist, Joseph Hilgard, a postdoc at the Annenberg Public Policy Center, commented, "The current system has done too much to reward results. This causes a conflict of interest: The scientist is in charge of evaluating the hypothesis, but the scientist also desperately wants the hypothesis to be true." The research of meta-analysts supports these feelings. A 2005 study published in JAMA found that as much as 30% of the most influential and highly cited studies later turned out to be wrong or exaggerated[1]. Additionally, a recent study in the Lancet argued that 85% of total global research funding is wasted on poorly designed and redundant studies[2].

" The scientist is in charge of evaluating the hypothesis, but the scientist also desperately wants the hypothesis to be true."

Publishing System Broken

Another problem area frequently cited by survey respondents was the peer review and publishing system. Many expressed the view that the current peer review process fails to prevent low-quality research from being published. At the same time, a number of respondents took issue with the fact that for the majority of journals, editors and reviewers know the identity of authors while referees remain anonymous. This allows biases against individuals or institutions to come into play. Finally, many complained that far too many journals keep publications behind restrictive and costly paywalls, arguing that important findings should be free for all to access. Ben Goldacre, a British epidemiologist known for his reporting on bad science, summed up the general consensus on the current publishing model, "We need to recognize academic journals for what they are: shop windows for incomplete descriptions of research, that make semi-arbitrary editorial [judgements] about what to publish and often have harmful policies that restrict access to important post-publication critical appraisal of published research."

"Many felt that both scientists and journalists were doing a poor job communicating important scientific ideas and findings with the public."

Poor Science Communication

Another topic repeatedly listed as a top concern among survey respondents was effective science communication. Many felt that both scientists and journalists were doing a poor job communicating important scientific ideas and findings with the public. They complained about the influence of uninformed and misguided celebrities, and the tendency of science journalists and scientists themselves to exaggerate findings. Daniel Molden, an associate professor of psychology at Northwestern University described how the current state of science communication undermines scientists' efforts. "You have this toxic dynamic where journalists and scientists enable each other in a way that massively inflates the certainty and generality of how scientific findings are communicated and the promises that are made to the public. When these findings prove to be less certain and the promises are not realized, this just further erodes the respect that scientists get and further fuels scientists desire for appreciation."

Can Science Be Saved?

In the end, the authors of the study conclude that despite all the

- Face continues on page 7

Report Documents How The Role of Dietary Sugar in Coronary Heart Disease Has Been Deliberately Downplayed By Industry

A new article published online in the September issue of *JAMA Internal Medicine* investigates the history of sugar research and cardiovascular health, bringing to light the influence the sugar industry has had on the science and public policy. Dietary sugar may be a significant contributor to obesity and diabetes, but its direct relationship to cardiovascular health is often less discussed. More often, dietary fats have been blamed for poor cardiovascular health even though accumulating evidence suggests that not all dietary fats are associated with cardiovascular disease (see Epimonitor July 2016 Issue for discussion of health effects of butter consumption).

However, sugar is thought to affect cholesterol levels and blood pressure, and diets high in sugar are associated with elevated levels of plasma triglycerides, a known risk factor for coronary heart disease (CHD). How is it that, despite its prominent increase in the American diet, there has not been a focus on the adverse health effects of dietary sugar?

Investigative Report

Lead author of the JAMA study, Cristin Kearns and colleagues from the University of California, San Francisco attempt to address this very question. The UCSF researchers combed through internal reviews, reports, and correspondence from the Sugar Research Foundation (SRF), now the Sugar Association, demonstrating that the SRF strategically influenced research culminating in the publication of a seminal literature review on the role of sugar and fats on coronary heart disease that implicated fat, rather than sugar, as the root cause.

Background

Kearns et al. cite evidence as far back as 1954 that the SRF sought to increase the amount of sugar consumed by Americans through the promotion of a low-fat diet. This initiative led to over $5.3 million (in 2016 dollars) of spending to achieve this goal by swaying the current science and discussion around sugar and its role in human health. By the mid-1960s evidence had been mounting that increased dietary sugar may have adverse health effects, and experts were beginning to suggest that sugar was as important a cause of CHD as saturated fat.

Around this time John Hickson, vice president and director of research for the SRF recommended that the organization fund research on CHD to identify weaknesses in and refute the research linking carbohydrates and CHD. In 1965 the SRF hired Frederick Stare from the Harvard University School of Public Health Nutrition Department, an expert in the dietary causes of CHD to serve as an ad hoc member on its scientific advisory board. Stare then oversaw what would become a highly influential literature review published two years later in the New England Journal of Medicine, co-authored by two other

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"...sugar is thought to affect cholesterol levels and blood pressure, and diets high in sugar are associated with elevated levels of plasma triglycerides..."

"By the mid-1960s evidence had been mounting that increased dietary sugar may have adverse health effects..."

-Sugar continued from page 5

Harvard researchers D. Mark Hegsted and Robert McGandy who were eventually paid nearly $50,000 (in 2016 dollars) for their efforts.

Weighing the Evidence

According to Kearns et al., the 1967 NEJM review written by Hegsted and McGandy, entitled "Carbohydrates and Cholesterol Metabolism", was a critique of articles, many of which were handpicked by the SRF, examining the role of sugar in heart disease. Hegsted and McGandy evaluated the quality of these studies discounting many of the findings implicating sugar in CHD as being questionable, irrelevant and potentially biased. The NEJM review also summarized the results of studies on dietary interventions to prevent CHD but again discounted those that showed substituting starch, vegetables, or fat for sugar could improve serum cholesterol and triglyceride levels. Furthermore, Hegsted and McGandy overemphasized the consistency of studies that pointed to dietary cholesterol and saturated fat as the primary cause of CHD despite a lack of mechanistic evidence and concluded with the recommendation that reducing fat intake was the best dietary intervention for preventing heart disease.

"...they were able to derail the discussion about sugar for decades..."

"...the industry 'should have exercised greater transparency in all of its research activity'..."

Lasting Influence

The overall impact of the the SRF's NEJM review has been lasting. Stanton Glantz, a professor of medicine at UCSF and co-author of the JAMA Internal Medicine paper told the New York Times (NYT) that "they were able to derail the discussion about sugar for decades", calling the decision to publish the results in a prominent journal "very smart", in order to have an early influence on the scientific discussion. Control policies for sugar are just recently being considered at the international, federal, state, and local levels, but among them CHD is not consistently identified as a result of added sugar consumption. This is despite the fact that the CDC lists CHD as the leading cause of death for males and females in the United States, responsible for more than 600,000 deaths in 2014.

Role of Industry Research

Although the industry and non-industry funding of the review authors' experimental research was disclosed in the 1967 NEJM review, there was no mention of the SRF funding and influence. While the disclosure of conflicts of interest in research is much more commonplace today, that was not necessarily the case decades ago. In a statement to the NYT, the Sugar Association said that the industry "should have exercised greater transparency in all of its research activity" but generally defended the industry-funded research. While this underscores the debate over the veracity of industry-versus publicly-funded science, the statement by the Sugar Association also points out that "... it is not only unfortunate but a disservice that industry-funded research is branded as tainted".

However, in a separate commentary in the same issue of *JAMA Internal Medicine* Marion Nestle, Professor of Nutrition, Food Studies, and Public Health at New York University

- Sugar continues on page 9

-Face continued from page 4

all the negativity, science is not doomed. After all, the system more or less still works. Great and important discoveries are still being made, and efforts to improve the way we do science and even address some of these issues are underway. They offer three main areas to focus on to make the greatest impact.

1. Address the financial problem and find a way to create incentives for researchers to undertake longer, less predictable studies that offer the opportunity for bigger discoveries.
2. Address the incentive structure within the system by finding ways to reward failure and negative results from rigorous, well-designed studies.
3. Increase transparency. Methods and findings need to be made available in greater detail and more easily accessible to anyone who may want to analyze or replicate their findings.

To read more about their impressions and conclusions from the survey, see the original article here:

https://tinyurl.com/joyw7xx

In addition you can view a list of the Vox journalists' favorite survey responses here:

https://tinyurl.com/zr3m2ml

1. **https://tinyurl.com/hozkm9t**

2. **https://tinyurl.com/gmm6d6m** ■

-Galea continued from page 1

level. His wife explains this in the article by noting "Sandro and I both gravitate toward the hardest thing, where we'll be challenged and have the biggest opportunity for impact."

BU Sparkplug

Many of Galea's colleagues at BU share their insights about the him in the magazine article. According to Lisa Sullivan, "Sandro is a dynamo. He has more energy than any person I've ever encountered, of any age." This helps explain why at 44 Galea is the youngest public health dean in the country and why he has infused it [BU] with "near palpable electricity" according to Bostonia. His colleagues describe his leadership as both "exhilarating and exhausting."

Social Causes

As other population health scientists have come to understand, Galea recognizes the importance of the social determinants of health, especially income inequality, in accounting for the health status of populations. According to the profile, Galea believes that US health inequalities are due to public policies we adopt and these policies are changeable if we have the political will to do so.

Advocacy

This focus on the amendable nature of current policies which impact health has convinced Galea they should be changed and that public health professionals should engage in some form of advocacy. According to

- Galea continues on page 10

"After all, the system more or less still works."

"...he has infused it [BU] with 'near palpable electricity'..."

-Lack continued from page 2

"Kuller is not as negative about the prospects for large epidemiological studies in the future ..."

"...the high priority placed on precision medicine with its focus on individuals entails opportunity costs."

Disappointing Results

Kuller's paper asks whether these "pseudopod" epidemiology approaches have enhanced public health or generated a large number of studies of little impact. He concludes there has been only "limited" impact and offers several reasons for these disappointing results. They are;

1. The studies may not be hypothesis driven but rather data collection exercises.

2. They are attached to study designs and populations that are not appropriate for identifying risk factors

3. The phenotype or the dependent variable disease is not adequately measured.

4. The independent variables are not accurate or repeatable

5. The primary study is too short given the incubation period of the disease.

A Way Forward

Kuller is not as negative about the prospects for large epidemiological studies in the future because he believes such studies can be enhanced if epidemiologists keep in mind the importance of studying variables in the causal pathway and not merely those which have a statistically significant p value of relationship between the independent and dependent variables. With a deeper understanding of the meaning of risk factors, Kuller believes "smart epidemiologists using epidemiology methods, good study designs, and new technologies to identify the risk factors for the higher hanging fruit and application of such knowledge will remain the cornerstone of improving the health of the population."

A Third Opinion

In a third article in this cluster, Muin Khoury and Sandro Galea tackle the same issues by asking "Will Precision Medicine Improve Population Health? They seek to reinforce the importance of population health as an indicator of research success while noting that there are indeed some potential payoffs from precision medicine for public health.

Reasons for Failure

According to the authors, precision medicine is unlikely to yield population health gains because disease pathogenesis is complex, the associations between genotypes and phenotypes have limited capacity to predict phenotypes in individuals, and individuals told they are in high risk groups are not always willing to change their behavior.

Of equal if not greater concern, the high priority placed on precision medicine with its focus on individuals entails opportunity costs. When research is thus focused, it distracts from addressing the larger social causes of disease such as poverty, obesity, and education, and when scientists are focused on individuals they also are distracted from working on the social factors.

- Lack continues on page 10

-Sugar continued from page 6

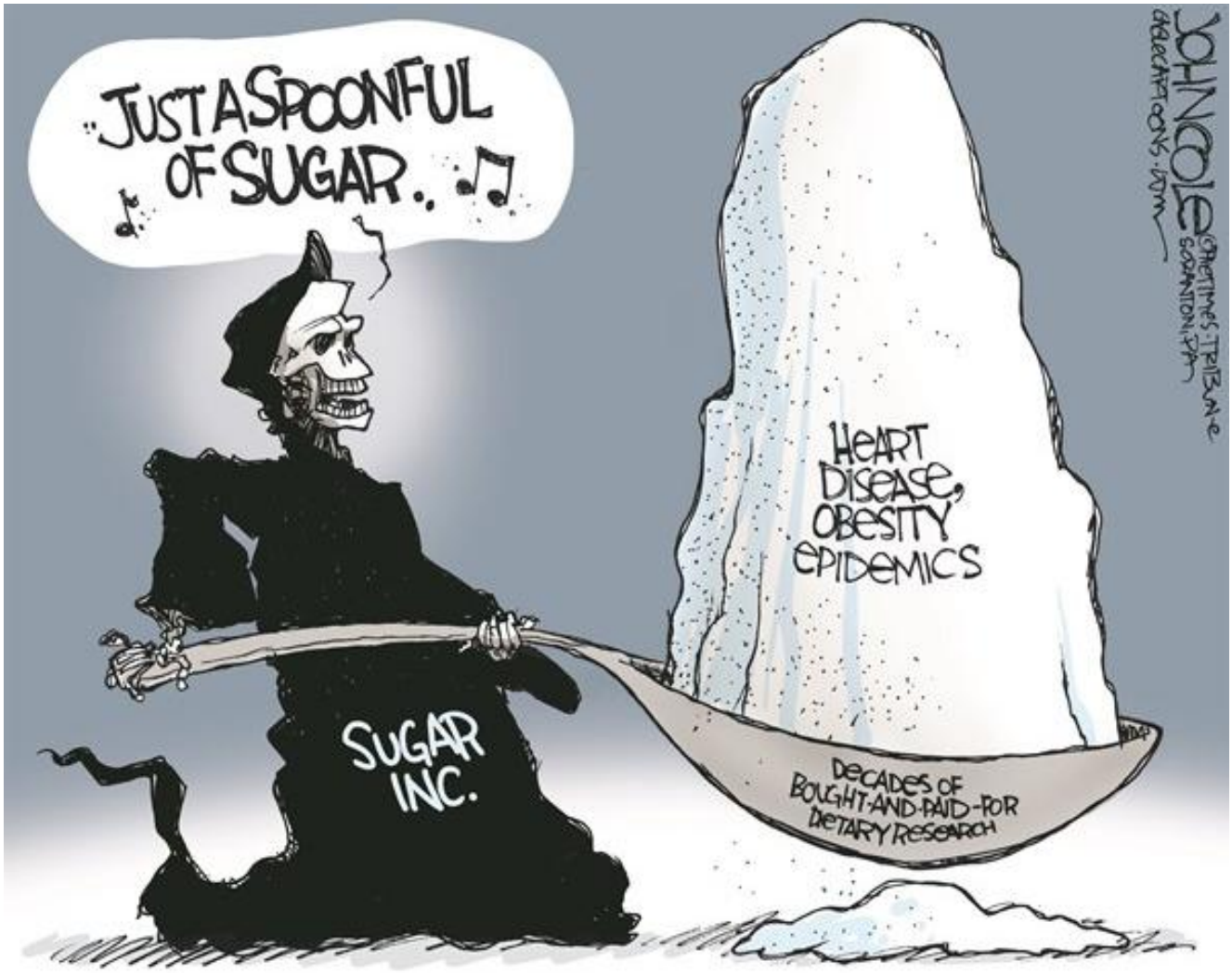
contends that food companies deliberately manipulate their research, citing recent examples of Coca-Cola funding research downplaying the role of soda in obesity and a candy trade association funding research suggesting that children who eat candy have healthier body weights than those who do not. For their part, Kearns et al. conclude in their report that "policymaking committees should consider giving less weight to food industry-funded studies".

Links:
Main article: Kearns et al. 2016 - doi:10.1001/jamainternmed.2016.5394

Other sources:

1. https://tinyurl.com/jg5palb
2. https://tinyurl.com/hpgjst5
3. https://tinyurl.com/jz9sunc
4. https://tinyurl.com/jtmllj8 ■

"...policymaking committees should consider giving less weight to food industry-funded studies."



-Galea continued from page 7

colleague George Annas, "Sandro thinks we should be out in the world. If we have something to say, we should say it." He adds "Enter the political arena, for God's sake. Don't just sit there and count things."

"Enter the political arena, for God's sake. Don't just sit there and count things."

Hatred of Public Health

According to Bostonia, Galea has entered the public arena by writing and speaking extensively. Interestingly, he has also rubbed shoulders with policy leaders from conservative think tanks. According to Galea, "Conservatives hate public health. They hate public health with a visceral hatred…and they hate public health for two reasons. Number one—they feel like public health has a value set that they don't agree with. But they also say that we use data only to serve our ends, to impose upon them regulation and policies that they don't agree with."

[Ed. Note: We recall an anecdote which exposes these values differences. There was an outspoken and recalcitrant participant at a meeting about data on second hand smoke. Hearing about the health effects of second hand smoke, he was refusing to go along with the other attendees in agreeing on a policy to ban smoking in public places. The outlier was asked why he was being so recalcitrant. He replied: It's not that I don't hate smoking as much as you do. Rather, it's because I hate government more!]

Clearly, public health advocates in such a culture have their work cut out for them. Galea told Bostonia about his encounter with conservatives, "What emerged for me is that public health needs to be much more honest, much more straightforward."

To read the full profile, visit **https://tinyurl.com/ztxluva** ■

"Conservatives hate public health. They hate public health with a visceral hatred…"

-Lack continued from page 8

Benefits for Pop Health

Khoury and Galea see a way forward by noting that both population wide interventions as well as more specific interventions tailored to high risk groups will be needed to improve population health. They assert that precision medicine can help to better define high risk groups which will impact public health. Also, they cite the example of newborn screening as the largest established precision medicine public health program in the US and believe that others are possible to create. Finally, genomics has the potential to contribute to a "precision public health" and has already done so with pathogen whole-genome sequencing to improve public health microbiology. ■

On The Light Side

New Contest -
Use Exactly Six Words To Create A Story About The Life Of An Epidemiologist

Given the challenges facing science and epidemiology highlighted in this month's issue, we recalled with interest an article in Science earlier in July of this year. The publisher asked young scientists to "use exactly six words to create a story about the life of a scientist in your field." They received over 400 responses descriptive of the life of a scientist. Some of these are presented below:

"Results were promising, until they weren't."

"New outbreak. Funding reprioritized. New outbreak."

"The experiment failed. Or did I?"

"Carpool partner available: 5am/11pm every day."

"Dear incompetent reviewer. We fully agree."

"Continuous failure redeemed by fleeting success."

"No prestige given for null results."

We are inviting epidemiologists of all ages to write a story in exactly six words about the life of an epidemiologist. The purpose of this contest is to stories which best capture the life of an epidemiologist. Entries of all types—unique, humorous, inspiring or other types are all welcome. The winner for the best entry will receive a $300 cash prize. All entries become the exclusive property of the newsletter. The deadline for submission is November 15, 2016. Send your entries to epimon@aol.com ■

Epi Calendar Updates

October 7, 2016

Conference: Is Publishing (Epidemiology) History? Program at:
http://www.ijeconference.com/programme-2/
Sponsor: The International Journal of Epidemiology
Location: Bristol UK, -Engineers' House
Contact: The conference is fully booked. Register to join a waiting list. Or watch a live stream of the conference beginning at 10:00am at
http://www.ijeconference.com/live-stream/

October 24, 2016

Workshop: Big Data Phenotyping: Opportunities, analytic challenges, and Solutions
Sponsor: International Genetic Epidemiology Society and the Dalla Lana School of Public Health
Location: Toronto, Ontario, Canada
Contact: https://tinyurl.com/z9ppwff

"A total of nine current and former Michigan government employees have been charged in the investigation."

"Suicide contagion is real, and the language and publicity surrounding deaths by suicide concern me immensely."

Former Michigan State Epidemiologist, Corinne Miller, Takes Plea Deal in Ongoing Water Crisis Investigation

After being arraigned last month on felony charges related to her role in the Flint water crisis, Corinne Miller, former Michigan State Epidemiologist and Director of the Michigan Bureau of Epidemiology, has reached a plea deal. In the agreement, the felony charges of misconduct in office and conspiracy have been dropped, and Miller pled no contest to misdemeanor willful neglect of duty. In return, Miller is required to cooperate with the ongoing investigation. Miller will not serve any jail time and the misdemeanor charge could be dropped after she completes probation. According to Todd Flood, the lead prosecuting attorney, "I wouldn't have put this deal together unless we knew what she could do." A total of nine current and former Michigan government employees have been charged in the investigation. Miller is the second to reach a plea deal.

https://tinyurl.com/jmct2da

New York Times Profiles Columbia University Epidemiologist With Career Focused On Suicide Prevention

Madelyn Gould, Professor of Epidemiology in Columbia University's Psychiatry Department, has spent the last three decades researching suicide and making numerous contributions to our understanding of its causes and prevention measures. Many of Gould's key contributions to suicidology center on the media's role in prevention. There is a definitive link between media coverage of suicide and increases in their occurrence. In the Times article, Dr. Gould emphasized, "Suicide contagion is real, and the language and publicity surrounding deaths by suicide concern me immensely." According to the Times, Gould also works hard to help remove the stigma of suicide pointing out the impact of terminology. For example, describing the act as "committing suicide" makes it sound criminal.

In the profile, she also touches on one element of her research that hits particularly close to home. From the window of her office she can see the George Washington Bridge which is one of New York's most frequently chosen sites for suicide. When it comes to prevention, Gould is "adamant about what she considers the most powerful deterrent of all: depriving people at particular risk of killing themselves of access to the means for doing so." Despite recommendations that barriers be installed on both bridges and buildings, The Port Authority of New York and New Jersey to date has only put up signage and telephones linked to trained counselors. Despite these efforts, which Gould's research does support, the suicides continue. As plans stand now, it will be at least 8 years before a planned safety barrier is installed on the George Washington Bridge. "From the perspective of

- Epi News continue on page 13

saving people's lives, why not move up that time frame," asks Gould.

To read the complete Times profile, go to:

https://tinyurl.com/j5p2ks8

Pre-Emptive Vaccination Campaign Protects Millions from Yellow Fever

"A major part of the largest emergency vaccination campaign against yellow fever ever attempted in Africa has been completed, with more than 7.7 million people vaccinated in record time in the city of Kinshasa, Democratic Republic of Congo (DRC)", touts the World Health Organization (WHO) in a recent press release. The bulk of these vaccinations were made possible through a dose sharing strategy designed to overcome a shortage of vaccine. The strategy required dividing vaccine doses intended for a single individual across five individuals and required the use of specialized syringes and additional training for 40,000 vaccinators. The massive effort, coordinated by the DRC Ministry of Public Health, the WHO and 50 global partners, was rushed in order to complete vaccination prior to the start of the rainy season and the increased yellow fever transmission that accompanies that seasonal change.

So far this year, there have been 1000 lab-confirmed cases of yellow fever with many more cases suspected. Four hundred people have died. Prior to this pre-emptive campaign, 13 million persons in Angola and 3 million in the DRC were vaccinated against yellow fever. Public health officials were concerned to complete vaccination in high-risk areas such as Kinshasa before the epidemic grew out of control.

The WHO report also indicated that no new cases have been reported for over a month suggesting the outbreak is now in decline however vaccination was still key ahead of the rainy season and because the vector can live on in animal reservoirs.

Despite the impressive nature of the campaign, it is not without shortcomings. In a separate piece, the New York Times notes that the number of vaccinations given is not enough to cover all of Kinshasa, and the use of diluted doses means individuals will only have a year or so of immunity rather than the lifetime conferred by a full dose.

https://tinyurl.com/hl6esf6

https://tinyurl.com/hardcza

"...the largest emergency vaccination campaign against yellow fever ever attempted in Africa has been completed, with more than 7.7 million people vaccinated..."

Illicit Fentanyl Overdoses Still on the Rise

In 2015, alerts identifying illicitly manufactured fentanyl (IMF) as a public health threat were issued by both the CDC and the Drug Enforcement Agency. Fentanyl is a synthetic opioid pain medication that has a potency nearly 80 times that of morphine. At the time of the initial

"...alerts identifying illicitly manufactured fentanyl (IMF) as a public health threat were issued by both the CDC and the Drug Enforcement Agency."

- *Epi News continue on page 14*

Notes on People

Died: John Bailar III, former NCI epidemiologist and biostatistician and department head at McGill and the University of Chicago. According to Cancer Letter, Dr Bailar was probably best known for his critiques of the war on cancer and the excessive focus on treatment rather than prevention. His 1997 paper in the NEJM co-authored with Heather Gornik concludes "A national commitment to the prevention of cancer, largely replacing reliance on hopes for universal cures, is now the way to go." Obituary: **https://tinyurl.com/jqr64ts**

Appointed: Paul Byers, as Mississippi state epidemiologist. Dr Byers has been the deputy state epidemiologists since 2012. His experience with the state department of health was highlighted and called a "great asset" by the departmental leadership in making his appointment.

Interviewed: Allen J Wilcox, in the September issue of Epidemiology. Dr Wilcox has spent his career at the National Institute of Environmental Health Sciences in Durham NC and was formerly the editor of Epidemiology. Asked what he wants to be remembered for, Wilcox said "…If there is anything, it would probably be for trying to bring epidemiologic tools to perinatal epidemiology and conversely, to bring the insights of perinatal epidemiology to the wider field of epidemiology…"

-Epi News continued from page 13

alert, an increase in unintentional, fentanyl-related overdose fatalities had been seen in multiple states stemming largely from IMF rather than the diversion of prescription fentanyl. A release late last month from the CDC Health Alert Network details four new developments in the IMF public health crisis including an increase in counterfeit pill availability, the potential for broader distribution across the US, an increase in the variety of fentanyl-related compounds sold as heroin or mixed with heroin, and continued increases in IMF supply. In the same week, Morbidity and Mortality Weekly Report reported a 426% increase in drug products that tested positive during 2013-2014. Both reports agree that an urgent, collaborative response is needed and echo similar recommendations including, "1) improving timeliness of opioid surveillance to facilitate faster identification and response to spikes in fentanyl overdoses; 2) expanding testing for fentanyl and fentanyl analogues in high-burden states; 3) expanding evidence-based harm reduction and naloxone access; 4) implementing programs that increase linkage and access to medication-assisted treatment; 5) increasing collaboration between public health and public safety; and 6) planning rapid response in high-burden states and states beginning to experience increases in fentanyl submissions or deaths."

https://tinyurl.com/z3ut46h

https://tinyurl.com/zolbs6v ■

Faculty Positions in Cancer Research
Huntsman Cancer Institute, University of Utah
An NCI-designated Comprehensive Cancer Center

Huntsman Cancer Institute (HCI) at the University of Utah Health Sciences Center is an NCI-designated Comprehensive Cancer Center and a member of the National Comprehensive Cancer Network (NCCN), supporting and fostering a vibrant research enterprise in a highly collegial environment. HCI has a strong history of academic achievement and impact as well as a commitment to excellence in patient care, research, teaching and service. HCI is undergoing a major expansion which includes a new research building, and seeks outstanding candidates for faculty positions at all levels and at all ranks in basic, translational, and population sciences cancer research.

HCI leadership has made a strategic commitment to develop disease-oriented research teams (DOTs) as a mechanism to enhance translational research. DOTs specialize in adult and pediatric cancer research in the following areas: Colon Cancer, Genitourinary and Hematologic Malignancies, Hepatobiliary Cancer, Melanoma, Neuro-Oncology, Pancreatic Cancer, Sarcoma, Upper Aero Digestive Tract (with existing strengths in lung cancer) and Women's Cancers. Candidates whose cancer research interests are aligned with the HCI DOTs are strongly encouraged to apply.

1. Basic Cancer Research:

We seek junior and senior investigators with innovative basic cancer biology programs that emphasize mechanistic approaches. Areas of interest include signal transduction, stem cells, gene regulation/transcription, chromatin/epigenetics, genome stability/DNA repair, cancer metabolism, cancer genetics, metastasis, epithelial cancers, tumor immunology, hematologic malignancies, pediatric/youth cancers, and mechanisms of therapy resistance. Successful applicants will align with and benefit from our cancer disease-oriented research teams (DOTs), which facilitate translation of basic science discoveries through collaborative team science approaches.

2. Translational Cancer Research:

This broad-based recruitment seeks outstanding scientists in a number of areas including, but not limited to: animal models, signal transduction, cancer genetics, target validation, drug discovery/validation, epigenetics & gene expression, DNA damage & repair, tumor immunology, cancer initiating cells, and clinical cancer research. Candidates whose scientific interests dovetail with the clinical strengths of the HCI DOTs are particularly encouraged to apply.

3. Cancer Control and Population Sciences:

We seek outstanding scientists in a number of areas including, but not limited to: cancer prevention (including behavioral interventions), cancer epidemiology, with emphasis on molecular/clinical epidemiology or genetic epidemiology, cancer survivorship, exercise and cancer, health outcomes, and risk communication. We are looking for collaborative and engaged colleagues who are interested in advancing their career through interdisciplinary team science.

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HCI and the University Health Sciences Center provide access to state-of-the-art equipment and services through exceptional Core Facilities (see www.cores.utah.edu) that enhance both discovery and translational science. HCI HCI also offers state-of-the-art laboratories, including a new 220,000 sq. ft. research building which doubles its research space, opening in summer 2017. The University of Utah offers robust graduate programs for training PhD and MD/PhD students. For more information about HCI, visit www.huntsmancancer.org.

Applicants for Assistant Professor are expected to hold a PhD or MD/PhD (or equivalent), have received appropriate postdoctoral training and to have a track record of impact and research productivity. Applicants for senior positions should additionally have a proven record of independent funding and innovative research. HCI particularly encourages and welcomes applications from physician-scientists across the continuum of cancer research. Highly competitive recruitment packages are available with appointment and rank in an academic department at the University of Utah determined by the applicants' qualifications.

Candidates should submit a curriculum vitae, cover letter containing a description of professional experience (including scientific accomplishments, leadership responsibilities and 3 references), and a 3 page research plan. Applications accepted continuously, with evaluations beginning **November 15, 2016**, until positions are filled or closed.

To apply online, please visit the following link:

http://utah.peopleadmin.com/postings/57123

Or, send to:

Huntsman Cancer Institute

Attn: Recruitment Office, Room 5160

2000 Circle of Hope, Salt Lake City, UT 84112-5550

Email: hci.recruitment@hci.utah.edu

The University of Utah Health Sciences Center is a patient focused center distinguished by collaboration, excellence, leadership, and Respect. The University of Utah HSC values candidates who are committed to fostering and furthering the culture of compassion, collaboration, innovation, accountability, diversity, integrity, quality, and trust that is integral to the mission of the University of Utah Health Sciences Center.

The University of Utah is an Affirmative Action/Equal Opportunity employer and does not discriminate based upon race, national origin, color, religion, sex, age, sexual orientation, gender identity/expression, status as a person with a disability, genetic information, or Protected Veteran status. Individuals from historically underrepresented groups, such as minorities, women, qualified persons with disabilities and protected veterans are encouraged to apply. Veterans' preference is extended to qualified applicants, upon request and consistent with University policy and Utah state law. Upon request, reasonable accommodations in the application process will be provided to individuals with disabilities. To inquire about the University's nondiscrimination or affirmative action policies or to request disability accommodation, please contact: Director, Office of Equal Opportunity and Affirmative Action, 201 S. Presidents Circle, Rm 135 (801) 581-8365.

The University of Utah values candidates who have experience working in settings with students from diverse backgrounds, and possess a demonstrated commitment to improving access to higher education for historically underrepresented students.

VANDERBILT UNIVERSITY MEDICAL CENTER

Research Fellow, Genetic and Molecular Epidemiology

Applicants must:

- Hold an M.D., Ph.D., or other doctorate-level degree.
- Demonstrate a strong commitment to pursuing a career in cancer epidemiology.

The Vanderbilt Training Program in the Molecular and Genetic Epidemiology of Cancer (Vanderbilt MAGEC) is now accepting applications for postdoctoral fellowships. The program is specifically designed for candidates with an MD or PhD in epidemiology or genetics/other related science with an interest in cancer research. An individualized didactic training program will be tailored to complement candidate's prior background and launch their independent research career. Training will include core and elective coursework, a multi-disciplinary mentoring team, rotations in the Vanderbilt Molecular Epidemiology Lab and Survey Research Shared Resources, and conduct of a research project, culminating in submission of a grant proposal to the National Institutes of Health.

Vanderbilt MAGEC fellowships, funded by an R25 grant from the National Cancer Institute, offer stipend support, Vanderbilt employee benefits, tuition for required and elective coursework, travel to one conference per year of training, payment of membership fees in up to 2 professional organizations, and funds for fellow's research projects. Fellows will have the opportunity to work on a wide range of established projects and participate in a multitude of cancer epidemiology-related activities available at Vanderbilt's Nashville campus.

How to Apply: Please visit the website for more information and to complete an online application. Online Application: https://medschool.vanderbilt.edu/magec/

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER.
Graduate School of Biomedical Sciences
Department of Public Health

Faculty Positions Epidemiology MPH Program TTUHSC

The Department of Public Health at the Texas Tech University Health Sciences Center in Lubbock, Texas, with co-campuses in Abilene is seeking exceptional faculty candidates in the Discipline of Epidemiology to be located in Abilene.

Texas Tech was recently rated the number one best University to work for by Forbes Magazine. http://www.texastech.edu/careers/

See Requisitions: 5352BR; 5353BR; 5354BR

As an EEO/AA employer, the Texas Tech University System and its components will not discriminate in our employment practices based on an applicant's race, color, religion, sex, national origin, age, disability, genetic information or status as a protected veteran.

THE UNIVERSITY OF IOWA COLLEGE OF PUBLIC HEALTH

Faculty Position Cancer Molecular Epidemiologist

The Department of Epidemiology, College of Public Health is pleased to announce an exciting new faculty position in the area of molecular epidemiology in cancer. This open-rank position will be for a tenure-track faculty member whose research will be on discovering and validating biomarkers for use as risk or prognostic factors related to pathways of disease, predictors for response to therapies, and modifiable factors for preventive or therapeutic intervention at the individual level.

To learn more about the position please visit and apply through the following link: **https://tinyurl.com/hrtwzyf** Candidates should provide a letter of interest, research statement, curriculum vitae and names of three references. Please address inquiries and nominations to the search committee chair, Elizabeth Chrischilles, at e-chrischilles@uiowa.edu or call (319) 384-1545

NIH National Institute on Aging

Epidemiologist

National Institutes of Health, National Institute on Aging is recruiting for an Epidemiologist within the Neuroepidemiology Section, Laboratory of Epidemiology and Population Sciences. A full Civil Service package of benefits (including retirement, health, life and long term care insurance, Thrift Savings Plan participation, etc.) is available. Applicants must be U.S. citizens.

For full job description please visit www.usajobs.gov and search for announcement numbers
NIH-NIA-MP-16-1781853
and
NIH-NIA-DE-16-1781862.

COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

Columbia University's Psychiatric Epidemiology Training Program announces openings for pre- and postdoctoral fellows, beginning September 2017.

The program provides social scientists, epidemiologists, psychologists, and psychiatrists with research skills in psychiatric epidemiology. Training involves coursework in substantive issues and research methods, and participation in an affiliated research unit. Postdoctoral stipends range from $43,692 to $57,504, depending on years of experience. Predoctoral stipends are $23,376.

Application deadline: December 1, 2016.
Contact: PET Program Administrator,
Columbia University, School of Public Health,
722 W. 168th St., Room 720-A, New York, NY 10032; e-mail: bls85@cumc.columbia.edu.
Columbia University is an equal opportunity employer (EOE).

ICHS

UAA Institute for Circumpolar Health Studies
UNIVERSITY of ALASKA ANCHORAGE

The UAA Institute for Circumpolar Health Studies (ICHS) provides support and coordination for health research, information, and training. ICHS is seeking to fill two research (non-teaching), tenure-track faculty positions.

Director
Center for Alcohol and Addiction Studies

Research focus will include the determinants of substance abuse behaviors including alcohol, tobacco, and other harmful substances, protective factors associated with resilience in the face of such effect and practical interventions to mitigate or treat such behaviors.

- MD, Ph.D., Dr.P.H in alcohol and addiction studies or a related field
- Experience in managing research programs and raising funds (preferably NIH)
- Salary: $58,500 - $125,000 DOE

Professor of Biostatistics

This individual will lead the ICHS Biostatistics core to conduct research contributing to the knowledge base regarding the role of social and physical determinates of population health in the circumpolar north.

- Ph.D. or Dr.P.H. in Epidemiology and Biostatistics, or closely related discipline in research and statistics
- Training in the use of statistical analysis software
- Expertise in analyzing epidemiological, biopsychosocial, behavioral, or social scientific data sets
- Salary: $58,500 - $100,000 DOE

Successful candidates for both positions will have experience or interest in building collaborative translational health research relationships in a cross-cultural context.

To apply, visit http://careers.alaska.edu

Contact Kelsie Sullivan, kalance@uaa.alaska.edu or 907.786.6460 for more information

National Cancer Institute

Challenge yourself: Be an NCI Fellow!

Explore opportunities in Epidemiology, Biostatistics, Genetics

Fellows at the NCI's Division of Cancer Epidemiology and Genetics work with world-class scientists to explore the environmental causes of cancer and new approaches to its prevention. Our research areas include:

- Biostatistics
- Clinical Genetics
- Genetic Epidemiology
- Health Disparities
- Hormonal and Reproductive Epidemiology
- Infections and Immunoepidemiology
- Nutritional Epidemiology
- Occupational and Environmental Epidemiology
- Radiation Epidemiology
- Translational Genomics

At NCI, we offer a range of predoctoral and postdoctoral fellowships with personalized mentoring, as well as specialized training partnerships with several schools of public health. As a DCEG fellow, you are supported as you take on challenges that enable you to grow both scientifically and professionally.

- Design, carry out, analyze, and publish population, family, and laboratory-based studies
- Gain experience in:
  - diverse study designs
  - novel analytic techniques
  - genomics and informatics
- Build skills in:
  - molecular epidemiology
  - grant writing
  - professional communications and networking

Discover what NCI has to offer you – come work with some of the most committed scientists you will ever meet.

For more information and to apply, visit our website:

http://dceg.cancer.gov/ (click on "Fellowships")

Additional inquiries: ncidceged-r@mail.nih.gov
Phone: 240-276-7270

NIH National Cancer Institute