

SPECIAL ISSUE

Training in Epidemiology

Epidemiology Training Failing To Keep Pace With New Opportunities And Challenges In The Field

New Approaches, New Venues Called For

A study published recently in the *Annals of Epidemiology* finds that training in the field has changed very little over the past several decades to meet changing social realities. The next generation of epidemiologists will be ill-prepared to meet these challenges unless current training is expanded to teach new skill sets, according to the authors.

Entitled “Charting a future for epidemiologic training”, the literature and interview study was conducted by multiple senior epidemiologists from a wide-ranging set of work environments led by a core team of Washington University’s [Ross Brownson](#), the University of Southern California’s [Jonathan Samet](#), and Saint Louis University’s [Laura Yarber](#).

Why The Failure

Asked why the pace of training has not kept up, Brownson told the Monitor “humans are creatures of habit. In part, this explains why epidemiologic training has not changed substantially over the past few decades. There is also a gap between the competencies needed for epidemiologic research *versus* those needed for public health practice. If more epidemiologists spend time working in practice or policy settings, it is likely that we will find new ways of bridging this gap.”

Boston University’s [Sandro Galea](#), a co-author of the report, offered another perspective on the failure to keep pace. He said, “Changes in formal disciplinary
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& Events

June
2015

Volume
Thirty Six

Number
Six

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The Epidemiology Monitor
ISSN (0744-0898) is
published monthly
(except August) by
Roger Bernier, Ph.D.,
MPH at 33 Indigo
Plantation Rd, Okatie, SC,
29909, USA.

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institutions take time. We have
faculty who are trained, think, and
practice their field a certain way and
training in a new way requires
conceptual shifts that are not easy to
grasp and implement."

He went on to add, "I think every
generation has a difficult time
meeting the needs of the upcoming
generation. This is a particularly
acute concern in epidemiology
because the field's needs are
changing so quickly. But I am
confident the field will rise to the
challenge; the article aims to be one
small part of that effort."

12 New Realities

The report identifies twelve macro
trends in science and society which
the authors believe are responsible
for the opportunities and challenges
being presented to epidemiologists.
The authors offer recommendations
for how to reform or expand
education in epidemiology to better
prepare epidemiologists to achieve
their primary goals of advancing
population health and remaining
vital and credible scientists.

The drivers were identified through
interviews with fifteen experienced
epidemiologists from academia and
government service, several with
experience in public health practice
settings. These trends are the
following:

1. The increased scope and ability to
link multiple, large, static and
streamed data sets – the trend
towards "Big Data"

Examples Of Actions Which Need To Be Taken By The Field Of Epidemiology

Some of the actions called for include:

- 1) Develop guidelines for reporting
epidemiologic research results based on
secondary analysis and/or Big Data.
- 2) Integrate training more fully with
communication and marketing
disciplines.
- 3) Study populations within health care
systems.
- 4) Improve the capacity of
epidemiologists to conduct research
which is competent for the culture they
operate in.
- 5) Develop and enhance cross-national
partnerships
- 6) Apply epidemiology to research
dissemination and implementation as
topic areas.
- 7) Work with those building clinical
data "enterprise warehouses" to
anticipate privacy and consent issues.
- 8.) Develop the capacity to translate
science into action in different venues,
especially in the form of policy action.
- 9) Develop new courses on translational
science
- 10) Encourage funding and career
recognition for team science
- 11) Better link epidemiology with public
health practice and health care systems.

A full accounting of the published
article can be found at *Annals of
Epidemiology* 25 (2015) 458-465 or at
this link :

<https://tinyurl.com/q6hmr8k> ■

2. The increased number of channels and sources of information – the trend towards greater access to information, often conflicting information (see cartoon this issue).

3. The multiple requirements of the Affordable Care Act and the increased desire to reward value and not just volume in health care – the trend towards getting more evidence to support health activities.

4. New social realities such as an increasingly aging population, and diversity in ethnicity and sexual orientation –the likely demand for research and practice in new topic areas or greater priority on existing areas such as health disparities.

5. Increased interaction between countries or globalization and the increased transmission of infectious diseases – the likely need for better control methods and the increased opportunity for epidemiologists to collaborate internationally.

6. Increased genome-based research and our ability to characterize and track patients in greater detail –the likely need for epidemiologists to learn more about biomedical and data sciences and to work with others as a team member.

7. A greater focus on public accountability for the use of public funds in research – the likely needs for more data sharing, rapid exchange of information, the use of more participatory approaches, and more ethical behavior.

8. The increased demand for privacy and regulation of access to private

data –the need for epidemiologists to better understand the limits on data and participate in balancing individual privacy and broader social needs for information.

9. A greater focus on the broad social factors that affect population health – the need to motivate action against the causes of the causes.

10. A greater focus on applying what is learned in research – the need to actually use findings that can improve health.

11. The growing focus on transdisciplinary approaches to complex problems – the trend towards team science and keeping or making epidemiologists critical members of these teams.

12. The record low success rates for research grants – the likely need to find new approaches to funding large epidemiologic studies and for epidemiologists to play an active role in educating persons who control the purse strings, i.e., make the case for epidemiology.

Points for Discussion

In presenting these findings, the authors call for 41 broader actions to be taken by epidemiologists as a group. They present these not as recommendations at this stage but rather as points for starting a discussion of what needs to be done by the field. They also present 62 competencies which are types of knowledge or skills which should be acquired by individuals. These requirements will vary depending on the work setting, and level of the

“...the results from the current project suggest an inadequate match between existing curricula and training activities in epidemiology and the future skills sets needed for epidemiology to remain an effective and credible discipline in the 21st century.”

Charting a Future
for Epidemiologic
Training

Annals of
Epidemiology

graduate degree in question.

Actions for the Field

Examples of the actions for the field and of the competencies called for are presented in the two lists accompanying this article.

According to Brownson, "strategic planning can help an organization or profession become more effective and a core principle of strategic planning is the careful consideration of future opportunities. Within our set of macro-level trends, there are multiple opportunities to make our profession more relevant, responsive, and forward-thinking."

For example, "epidemiologists...need more training and experience in the so-called "soft-skills" such as communication and problem solving that crosses disciplines. Related to this concept of transdisciplinary problem solving or "team science" we now have a body of literature showing how to build and implement effective teams."

Overarching Recommendations

While presenting these findings and discussion points, the authors are more definitive about a few reforms they think are called for by the data. First of all, they identify a need for lifelong learning by epidemiologists. They note that such teaching "...has received too little attention to date and...should be addressed by professional organizations and academic institutions in partnership

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Examples Of Competencies Which Need To Be Acquired By Individual Epidemiologists

Some of the newer competencies called for by the authors include:

- 1) Use and interpret findings from data exploration tools and other analytics
- 2) Demonstrate skills to effectively communicate findings to multiple audiences.
- 3) Demonstrate skills in using contextual data to assess quality of health care processes and outcomes.
- 4) Demonstrate capacity to handle data in at least one unfamiliar foreign context.
- 5) Understand how to validate a surrogate marker and apply the principles of causal inference to "omic" tools
- 6) Apply new metrics to measure the effectiveness of epidemiology on population health and health care decision making.
- 7) Demonstrate skills in using the electronic health records to improve access to clinical data for epidemiologic research.
- 8) Demonstrate the ability to assess the strengths and weaknesses of the systems approach to public health problems.
- 9) Describe the role of epidemiology and epidemiologists in the translation of knowledge into practice.

A full accounting of the published article can be found at Annals of Epidemiology 25 (2015) 458-465 or at this link :

<https://tinyurl.com/q6hmr8k>



*"..epidemiologists
...need more
training and
experience in the
so-called "soft-
skills..."*

*"...they identify a
need for lifelong
learning by
epidemiologists."*

with other key stakeholders.”

In addition to changes in the classroom, the authors call for more focus on one-to-one mentoring in both research and practice settings.

In conclusion, the authors state “...the next generation of epidemiologists will need a set of skills that goes beyond the training currently being delivered. We should seek out innovative and creative ways of delivering epidemiologic training to keep pace with these trends... and extend the venues in which training occurs.”

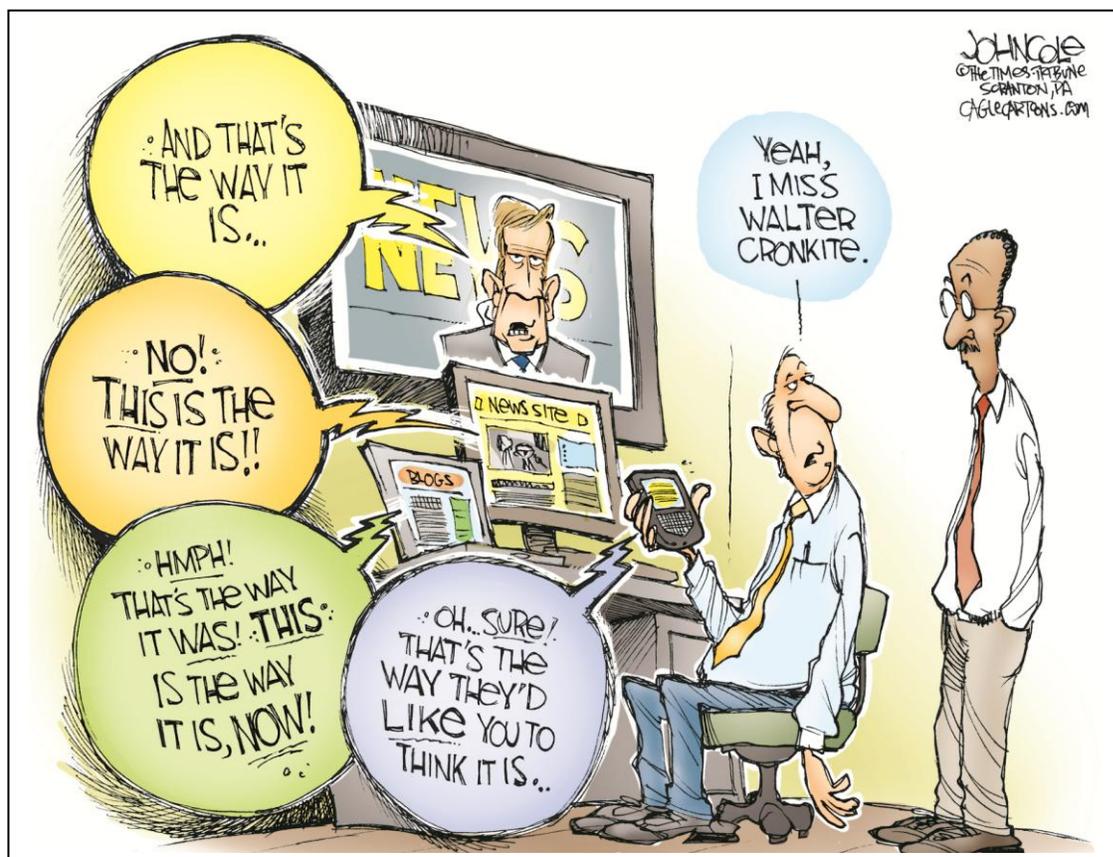
The issues raised by this report should be of interest to a large number of our readers who are in a position to comment both on the adequacy or inadequacy of past and current

training and the needs for the future.

We invite readers to comment and help spark a discussion of the issues. Your comments will be added online following the article and will be part of any discussion thread which emerges. A full accounting of the published article can be found at *Annals of Epidemiology* 25 (2015) 458-465.

The co-authors are Ross Brownson, Jonathan Samet, Gilbert Chavez (Ca Dept of Health), Megan Davies (NC Dept of Health and Human Services), Sandro Galea (Boston University), Robert Hiatt (Univ of Ca San Francisco), Carlton Hornung (University of Louisville), Muin Khoury (CDC & NIH), Denise Koo (CDC), Vickie Mays (UCLA), Patrick Remington (Univ of Wisconsin), and Laura Yarber. ■

“We should seek out innovative and creative ways of delivering epidemiologic training...”



Jonathan Samet Reflects On Training In Epidemiology

[Ed. In response to the recent publication of the article “Charting a future for epidemiologic training” in the *Annals of Epidemiology*, we asked a few of the 15 co-authors of the article to answer questions about the topic of training. Published below are detailed comments and insights from Jonathan Samet, Professor of Epidemiology at the University of Southern California and a lead author who has been one of the most thoughtful and outspoken leaders in the field about training and how to bring about improvements.]

"We are not nimble..."

Samet Comments

I am just back from a two-day retreat with my department talking about the future – and how to prepare for it.

- 40 years have now passed since I started my training in epidemiology at the HSPH. Of course, what we are doing now, could not have been anticipated then. What will epidemiologists be doing 40 years from now? Most critically, we need to prepare epidemiologists for a career that spans increasingly rapid change – particularly for those who are primarily in research. In my opinion, a very strong grounding in quantitative methods will be critical.
- One problem inherent to academia is the pace at which we refresh the composition of research groups and our research technology. We are not nimble and are challenged to keep up with the emerging technologies and associated opportunities.

- Much of what we teach is about research approaches of the past and not the present and the future. For example, will the concept underlying the new million-person “precision medicine” cohort replace models of the past, particularly the various fixed and proprietary cohorts?
- Our educational enterprise is staid and we are not keeping up – but other disciplines are with courses in “big data”, data exploration, and prediction, for example.
- We can also do a better job of incorporating new technologies into the classroom, in part to meet the expectations of today’s students and to give more hands-on experience.
- On the epi/policy front, I don’t see much advance from our field collectively – epidemiology remains highly relevant and the findings of epidemiological research are often under attack from the “doubt creators” – but this general area – epi/policy – is poorly addressed by the academic enterprise.
- One other thought – the rise of clinical/translational research, driven in part by the Clinical Translational Science Awards. A whole new training realm and community has evolved, largely separate from academic epidemiology. ■

"...this general area – epi/policy – is poorly addressed by the academic enterprise."

Scientists Call For Moratorium On Oil Sands Development

Action Is Reminiscent Of Call By Epidemiologists To Cease Use Of Asbestos

Is A Conceptual Shift Towards Greater Engagement Taking Place Among Epidemiologists?

“Based on evidence raised across our many disciplines, we offer a unified voice calling for a moratorium on new oil sands projects. No new oil sands or related infrastructure projects should proceed unless consistent with an implemented plan to rapidly reduce carbon pollution, safeguard biodiversity, protect human health, and respect treaty rights.”

This is how a recent statement by more than 100 North American natural and social scientists makes the case that continued oil sands development is inconsistent with proclaimed goals to mitigate climate change.

According to a related article in National Geographic on June 10, ‘Many scientists, particularly in the United States, worry about being labeled as environmentalists or activists by politicians, business lobbyists, or interest groups and losing their scientific credibility.’ It adds, “the declaration by a diverse group of ecologists, economists, climate researchers, and other academics is the most recent example of a tidal shift at universities across North America.”

Asbestos Statement

The oil sands statement is reminiscent of one calling for a ban on the use of

asbestos issued by an international group of epidemiologists in 2012.

In that report, the International Joint Policy Committee of the Societies of Epidemiology (IJPC-SE) stated that “A rigorous review of the epidemiologic evidence confirms that all types of asbestos fibre are causally implicated in the development of various diseases and premature death... Therefore, the Joint Policy Committee of the Societies of Epidemiology (JPC-SE), comprising epidemiologists from around the world calls for a global ban on the mining, use, and export of all forms of asbestos...”

Pew Survey

A 2014 Pew survey reportedly found that 87% of 3,748 scientists agreed with the statement “scientists should take an active role in public policy debates about issues related to science and technology.”

Balancing Act

There are many examples of changing attitudes highlighted in the National Geographic article. According to Danish epidemiologist [Philippe Grandjean](#), “If academics hide in ivory towers, society doesn’t

“...the declaration by a diverse group of ecologists, economists, climate researchers, and other academics is the most recent example of a tidal shift at universities across North America.”

"If academics hide in ivory towers, society doesn't benefit from public investment in research institutions."

- Oil Sands continue on page 14

Epidemiology's Policy Voice Gaining New Members

"...joining a group which is seeking to be thoughtful at the nexus of research and policy"

The International Joint Policy Committee of the Societies of Epidemiology (IJPC-SE), described as the "policy voice for epidemiological societies", has so far added six new members in 2015. There is "clear interest" in joining a group which is seeking to be "thoughtful at the nexus of research and policy", according to Colin Soskolne, professor emeritus at the University of Alberta and current chair of the IJPC-SE.

Over the past few months, the Royal Society of Public Health, the International Society for Children's Health and the Environment, the Italian Association of Epidemiology, the German Society for Epidemiology, the Japan Epidemiological Association, and the Romanian Society of Epidemiology have been added to the ranks of member societies/associations. Also known as the Joint Policy Committee (JPC), it now stands at 19 member organizations. Perhaps the most outstanding accomplishment of the group so far has been its position statement on asbestos launched in 2012 and which has been widely endorsed all over the world.

"...the IJPC-SE is playing a positive and meaningful role in serving the public good."

According to Kathleen Ruff, an asbestos activist who contributed to the development of the statement, The JPC Position Statement on Asbestos was an important act of collaboration and leadership by societies of epidemiology in calling for national and international policy to be based on the scientific evidence. While the asbestos industry spends millions of dollars on marketing and political lobbying, they are losing the battle of credibility, thanks to

organizations such as the IJPC-SE speaking up to defend epidemiologic evidence and public health policy. More organizations have since joined the IJPC-SE, in part, I believe, because they see that the IJPC-SE is playing a positive and meaningful role in serving the public good."

Challenges

The JPC has faced many organizational challenges since its inception in 2006 as a forum for discussing policy aspects of epidemiological research and practice, not the least of which is finding a convenient time for meetings by conference call in which Society representatives in different time zones can participate. Various policy documents have been approved through an inclusive iterative process. In July, the JPC anticipates registration in the USA as a Non-Profit 501(c)(3) corporation. Its website and core structure are foundational for its further development and growth (see www.ijpc-se.org), according to Soskolne.

However, agreement about the value and mission of the IJPC-SE is apparently not universal. The Society for Epidemiologic Research, the Society for Pediatric Epidemiology Research, and the American Heart Association Council on Epidemiology and Prevention have recently withdrawn their membership, citing a lack of volunteers to represent the societies on the Joint Committee.

Cause Of Explosive MERS CoV Outbreak in South Korea Still A Mystery

An explosive outbreak of MERS CoV is taking place in South Korea and the reasons for the rapid spread in just one month are still a mystery, according to the World Health Organization. As of June 12, a total of 126 cases, including 11 deaths, have been reported beginning on May 10-11. One of these was a case reported from China. The median age of cases is 56 years and only 7.9% have been documented in health professionals.

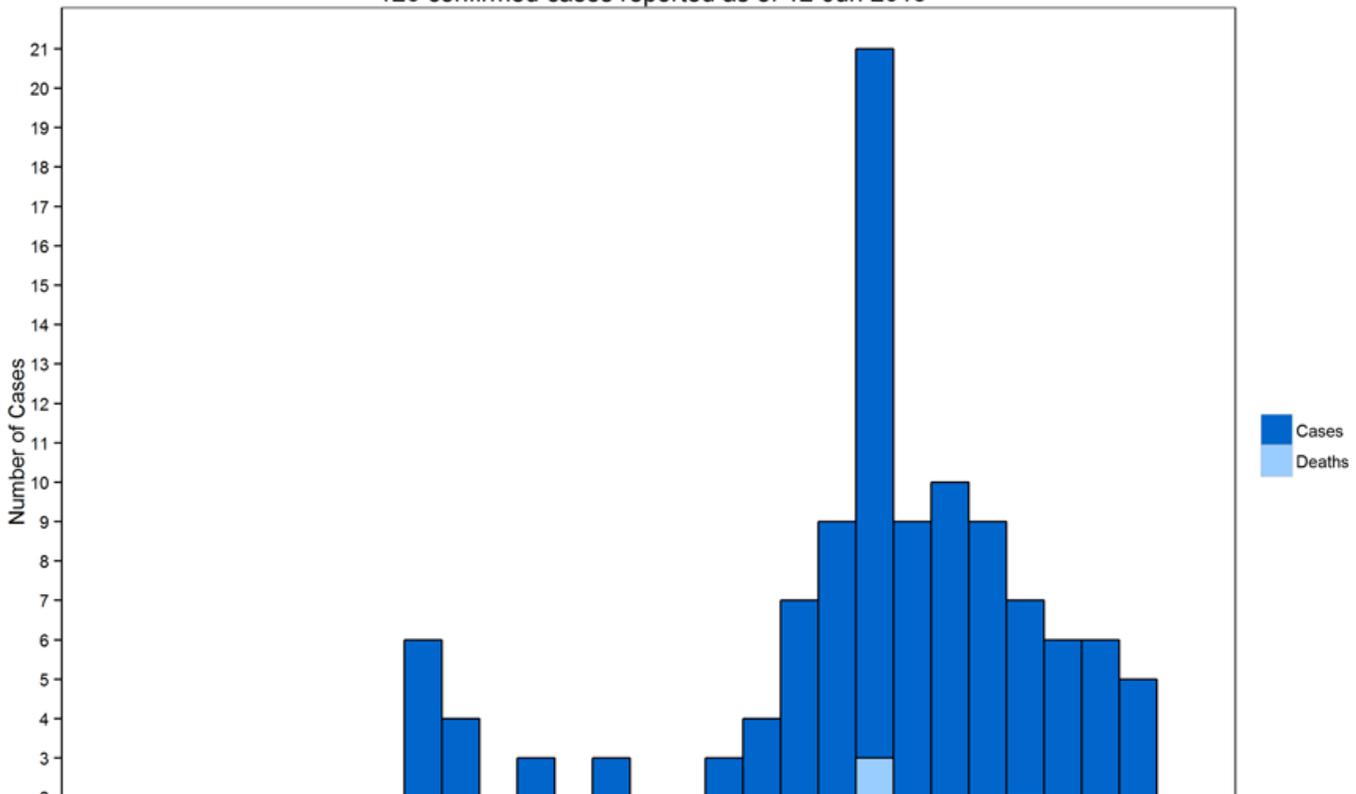
What is striking is that all cases have been linked to a single chain of transmission beginning with the index case who had a history of travel to the Middle East. All of the transmission appears to be linked to hospital

settings (44 different hospitals to date). Findings from genomic sequencing appear to have ruled out a change in the characteristics of the virus to explain the explosive spread. There is also no evidence of human-to-human transmission. Failures in infection control procedures could be the culprit here, but is that likely in so many different hospital settings all at once?

On June 13, additional cases were reported and WHO epidemiologist Keiji Fukuda told the press as reported in the NY Times that other potential reasons for the explosive spread are South Korean doctors' unfamiliarity with MERS, the country's "overcrowded" emergency rooms, the practice of "doctor shopping" for care at many different clinics, and the fact that hospital rooms here tend to be bustling with visitors.

The WHO epi curve is presented below.

MERS CoV confirmed cases and deaths in Republic of Korea and China
Estimated date of onset between 11-May and 10-Jun 2015
126 confirmed cases reported as of 12-Jun 2015



Montreal Epidemiologist Recognized For His Calculation

A precedent-setting calculation by the University of Montreal's Jack Siemiatycki on how much smoking is needed to double your risk of getting lung cancer was credited as reliable and convincing by a Canadian judge in a verdict awarding 15 billion dollars in damages to smokers, according to the Montreal Gazette. According to Siemiatycki, "my job in this case was to estimate where on the scale you have to be in order to get across the threshold of doubling the risk, and how many people in Quebec who get those diseases actually smoke that amount." The Gazette reports that five pack years is the critical dose, that is, one pack of 20 cigarettes a day over one year or 7300 cigarettes and spread over five years equating to 36,500 cigarettes smoked.

The article in the Gazette is available at:
<https://tinyurl.com/nqaquxb>

Harvard Epidemiologist Reports Significantly More Cancers Can Be Prevented By Implementing Achievable Levels of Air Pollution Control

"Now imagine someone saying 'We have a cure for lung cancer and breast cancer, but we will not use it because it will cost people money'. That's how Harvard University professor of environmental epidemiology Joel Schwartz told Harvard Magazine he would make the case for lowering the Environmental Protection Agency's standards for particulate-matter pollution. In his study of Medicare health outcome data and small particle pollution levels in every zip code in New England, Schwartz found that each 10 micrograms per cubic meter increase in particulate matter concentration led

to a 7.52% increase in mortality in New England.

To understand the potential impact of this level of risk, Schwartz told the magazine, "Cancer is probably the cause of 20 percent of all deaths in New England. So that means, if we get rid of air pollution, it would be as good as curing a third of cancers." The current EPA standard is 12 micrograms which EPA estimates will be met by most counties in 2020. Schwartz wants it reduced to 10 knowing there is no established safe level and areas in compliance with a higher standard lack incentives to continue lowering the level with current laws.

The article can be read at:
<https://tinyurl.com/pr9kpk>

Epidemiologists Called "A Secret Weapon"

In Game of Thrones, the popular HBO series, the Seven Kingdoms is the realm that controls most of Westeros, a continent located in the far west of the known world where most of the action takes place. According to an Indiana University blogger, "what many citizens of the fictional Seven Kingdoms really need these days is an epidemiologist."

Why is that? An infectious disease called greyscale that leaves its victims' flesh stiff and dead is back and there are many unanswered questions about the disease including how to treat it effectively. According to the blogger, here in the real world we have a "secret weapon" that the characters in Game of Thrones don't have: epidemiologists.

If you're are an epidemiologist, when was the

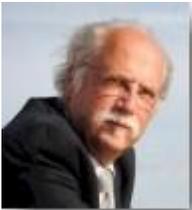
Notes on People



Died: David Sackett, professor emeritus at McMaster University, on May 13 at age 80. He was called “the father of evidence-based medicine”. In a Globe and Mail obituary, Brian Haynes, a former student and a professor of clinical epidemiology and biostatistics at McMaster said “David pioneered the approach of bringing public health methods to clinical care. He insisted that sound evidence guides practice for the sake of the patient.” Readers who wish to read more details about Sackett’s interesting life and productive career can read a set of written answers provided by Sackett to questions he received from friends and colleagues after they learned of his diagnosis--metastatic cholangiocarcinoma (cancer of the bile ducts). The 103 page document is available online at: <https://tinyurl.com/q5sd9yc>



Retiring: Polly Marchbanks, epidemiologist at the Centers for Disease Control and Prevention, on June 30, 2015, after 30 years of distinguished public service. She was a leader in multiple research and practice areas at CDC over the years. Marchbanks serves as an editor of the American Journal of Epidemiology and is a former president of the Society for Epidemiologic Research (SER). She initiated the first Epidemiology Late-Breaker Session at the SER annual meeting, and chaired the session for 22 years. Her message to colleagues at CDC upon retirement offered the following assessment. “Looking back over the past 30 years, I am deeply grateful for the opportunity CDC gives us to make a difference in the lives of people. I hope you will never underestimate the importance of your work, your contributions, and the unique part that you play in promoting health throughout the United States and the world.” Readers who wish to send her a note may do so at pollymarchbanks@bellsouth.net □



Hired: Siiri Bennett, a senior research scientist and medical data consultant in the Department of Biostatistics at the University of Washington in Seattle as state epidemiologist in Maine beginning July 20, 2015. According to press reports, Maine has lacked a state epidemiologist since May 2014.



Honored: Nancy Glynn, with the Margaret Gloninger Service Award for her volunteer work by the University of Pittsburgh School of Public Health. Glynn is assistant professor and director of the master’s program in the Department of Epidemiology. She helped establish Epi Gives Back, a group that offers volunteer opportunities for students and faculty.



Appointed: Jeff Duchin, as Health Officer for the Seattle King County Health Department, effective immediately. Duchin has been serving at the Interim Health Officer since January and as the Chief of the Communicable Disease Epidemiology and Immunization Section.

Africans Enthusiastic About New CDC

Our recent article reporting on the creation of an African version of the US CDC prompted an outburst of comment from our readers. Here are excerpts from some of the letters and comments we received.

This is novel and welcome. Highly commendable. The initiative should be implemented to the best standards possible. It will surely benefit mankind.

Sylvanus Welle

sylvelle2002@yahoo.com

I am really excited about this post and what US CDC is planning to do... It will be great to be updated on this so we can assist in whatever way we can.

Tom Aba Daniel

dtomaba@gmail.com

This couldn't have come at a better time than now. It is a welcome development which will strengthen the health systems in African countries.

Ejoh, Ojong Ojong

ohjays2003@yahoo.com

This is wonderful idea and this partnership will go a long way in strengthening the health system in Nigeria and other African countries especially now that West Africa and the world are trying hard to control the outbreak of EBOLA epidemics.

Odo Chukwuemeka

aodo@afenet.net

This is a very good idea for CDC to establish the Surveillance Emergency Operation Centres in West African Countries in strengthening surveillance system and outbreak investigation activities for immediate control measures in place and data generated for immediate public health actions. SEOCs recruited should be based on public health experiences of personnel and field epidemiologists as earlier mentioned to reduce and minimize field errors. The officers at these centres should have proper understanding in respect of surveillance activities, outbreak investigation, vaccines preventable diseases, and the non-communicable diseases in our environment. A unit can also be created in this SEOCs to handle non-communicable diseases because most of these diseases are reemerging in the society such diabetes, cancer, heart diseases and hypertension etc.

Ayanleke Halimatu Bolatito

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This is a laudable innovation. The creation of an African CDC will strengthen public health systems in Africa and build capacities for public health emergency preparedness among practitioners...I am therefore optimistic that the African CDC with a coordinating center in Addis Ababa, Ethiopia, will be a blessing to Africans and together we will fight our common enemy - "emerging and re-emerging public health diseases"

Olawuyi Kayode Abraham

abkay2008@yahoo.com

-Letters to the Editor continued from page 12

It's good and welcome development to African epidemiological capacity in surveillance and outbreak response.

Hamzat Umar Muhammad
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It's indeed a welcome development for Africans, a great opportunity. Let us harness the potentials.

Dr. A.S.Umar
drjuma72@yahoo.com

A wonderful and revolutionary idea, highly welcomed.

IBRAHIM MOHAMMED KAITA
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As an offshoot of lessons learnt in the recent EVD outbreak, African CDC should be designed as 4 subregional operational Epi-centres coordinated by a regional Epi-centre. Each subregional operational centre obtains information/data from African countries within its subregion, analyses interprets with dashboard mechanism, provides support for informed decisionmaking through data, alerts the coordination centre and feedback/feed forward in managing outbreaks of events or disaster in the subregion. It also informs the coordination Epi-centre when need for deployment of rapid response team/force arises. The coordination Epi-centre plans and harnesses all resources (including the lab component & lab network for final characterization of agents involved) for response and rehabilitation in the affected communities. This model would graciously alleviate the challenges encountered during outbreaks and facilitate response to

consequently and tremendously reduce morbidity and mortality caused by the outbreak. Hence, it is a laudable concept.

Badaru Sikiru Olanrewaju
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■

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Current Initiative

A current initiative of the JPC is to create a position statement on conflict-of-interest and disclosure. The need to address conflict-of-interest and disclosure issues more forthrightly was brought about by high-profile failures of epidemiologists to fulfill norms and expectations in these areas. According to the Committee, "We bring this topic forward to encourage discussion with a view to thoughtful consideration about what, if anything, we should, can and/or need to do in order to conform to ethical norms that will advance epidemiology at the research-policy interface." This statement is being eagerly anticipated by several IJPC-SE member-organizations as a value-added benefit of membership Soskolne told the Monitor.

Readers who share the Committee's beliefs about the importance of being actively involved at the interface of research and policy or action are encouraged to join the Committee by bringing particular expertise and/or encouraging their national or international specialty epidemiology societies to seek membership in the IJPC-SE. According to Soskolne, several membership categories have been created to accommodate different levels of interest and engagement (see pages 5-7 in the Founding Bylaws at: <https://tinyurl.com/pav8wgs> To get more information, contact Colin Soskolne at colin.soskolne@ualberta.ca ■

benefit from public investment in research institutions.”

This view is echoed by Ken Lertzman of Simon Fraser University who says “There are an awful of of people who don’t want to be stuck in the ivory tower. It’s something we talk about a lot with our students – how to make the most difference while maintaining credibility.”

The opposite view “scientists should focus on establishing sound scientific facts and stay out of public policy debates” was supported by only 13% of scientists in the Pew survey.

Views of Epidemiologists

The percentage of epidemiologists who hold these opposing views today is unknown but may be higher than 13% if judged by the relatively longstanding and recently reinforced “hands-off” policies toward discussions of policy issues in research articles published in *Epidemiology*. However, recent calls for epidemiologists to become more consequential in their research and practice may be a reflection of the national trend towards greater engagement (See quick reader survey this issue to give your perspective).

The authors of the recent report on “Charting a future for epidemiologic training” appear to have taken a clear stand by noting that society is exerting greater pressure to apply what is being learned in research and calling for the development of the capacity to translate science into action in different venues, especially in the form of policy action. (See related article, this issue). ■

last time you were called a secret weapon? Read the article to learn how Tom Duszynski, a faculty member in the Department of Epidemiology at Indiana University School of Public Health, says an epidemiologist would proceed to unravel the mystery disease and save the day.

Book Notes

Fatal Isolation is the title of a new book by historian Richard Keller reviewed in Science (May 22, 2015) The book is a social autopsy credited with using new approaches to better understand the causes of the 15,000 heat wave deaths in France in 2003. In what the review calls a masterful synthesis of contributing causes, Keller overturns the widely held portrayal of the typical victim in the heat wave as a lonely elderly person. With intensive shoe-leather investigations, the book explains how mapping disease in vertical space (buildings from top to bottom) and not only in the traditional horizontal space (different buildings) led to the observation that victims tended to live in the lower rent apartments of popular buildings that had historically been servants quarters. “The heat wave produced death by urban design that was decades, not days, in the making”, says the review. ■

READER POLL

Please see the next page for a single question reader poll.

Reader Poll

Please help us by answering the question below. Clicking the link will take you to the poll platform where your response will automatically be tallied.

A recent PEW survey asked 3,748 scientists if they agreed with the following statements. We seek to obtain information more directly relevant for readers of the Epidemiology Monitor. Please answer the following question:

Which of these statements comes closer to your own view, even if neither is exactly right?

- Scientists should take an active role in public policy debates about issues related to science and technology
- Scientists should focus on establishing sound scientific facts and stay out of public policy debates
- No answer

Respond: <https://tinyurl.com/onhun72>

Thank you. We will report the results in an upcoming issue.

NIH/NIEHS Epidemiology Postdoctoral Fellowships

The NIH/NIEHS Epidemiology Branch is seeking talented motivated individuals with *doctoral* degrees and epidemiology training and experience to participate in ongoing research programs. Several large multi-outcome cohort studies, and a large Repository of biological and environmental samples from completed and ongoing studies offer opportunities for a wide range of add-on studies and analyses: <http://tinyurl.com/p7negpw>

The NIEHS is located in Research Triangle Park, North Carolina near the University of North Carolina at Chapel Hill, North Carolina State University and Duke University, with opportunities for interactions and collaborations. Salary and benefits are highly competitive; commensurate with experience and accomplishments. Initial appointments are 2 years with additional years possible depending on productivity and availability of funds.

Submit the following to epifellowships@niehs.nih.gov:

- Letter describing areas of research interest
- Curriculum vitae with bibliography
- Copies of 1-2 recent publications
- Contact information for 3 individuals serving as references

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Qualifications:

- Doctorate Degree in Epidemiology, or related field, required.
- Minimum of seven (7) years related research experience in the field of Epidemiology, required.
- Thorough knowledge of epidemiological methods, data management and statistical analysis involving large administrative claims data bases, required.
- Strong written and oral communication skills, required.
- Occupational Epidemiology experience preferred.
- History of Grant Funding preferred

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David Geffen
School of Medicine

Professor and Chair to Transform the Department of Biomathematics

The University of California Los Angeles invites applicants to lead a new initiative in biomedical informatics and computational medicine. As Professor and Chair, the candidate will lead a transformation and renaming of the Department of Biomathematics, housed in the David Geffen School of Medicine (DGSOM), in the areas of Clinical Informatics, Bioinformatics, and Mathematical Biology. Reporting to the Dean of the DGSOM, the Chair will provide vision, leadership, and strategic direction in meeting the research, education, and service missions of the transformed Department. Responsibilities include overall management, academic planning, budget, personnel, resource allocation, and program development.

This recruitment is based on the comprehensive work of a multidisciplinary task force convened to create a vision for the future of biomedical informatics in the DGSOM. The principal recommendations include the following: (1) Establish a new department that builds upon the current Department of Biomathematics and includes three divisions (Clinical Informatics, Bioinformatics, and Mathematical Biology); (2) Foster a coherent Departmental culture and leverage strengths of departments and institutes outside DGSOM on the main UCLA campus; (3) Catalyze translational informatics research and training; (4) Ensure active collaboration between informatics leadership in the Health System with faculty in the new Department.

The current Department of Biomathematics has a rich and long history in mathematical and computational biology. Research interests include mathematical and statistical genetics, mathematical physiology, theoretical biophysics, evolutionary and systems biology, molecular and medical imaging, oncology, and clinical pharmacology. The educational mission includes training of undergraduate, masters, graduate, and postdoctoral students. The Department's Statistical Biomath Consulting Clinic provides assistance to biotech companies, physicians conducting clinical trials and operations research, and students working on theses and post-doctoral research.

Candidates must have an M.D. and/or Ph.D. degree, an outstanding record of leadership and research excellence, and a demonstrated commitment to education. It is also highly desired that the candidate have a proven track record of management in academia, national leadership in professional organizations, national recognition for scholarship, ability to recruit the new faculty that will be needed for this Department, and documented experience and expertise in mentoring junior faculty.

Confidential review of applications, nominations and expressions of interest will begin immediately and continue until an appointment is made. Compensation for the position is highly competitive. The DGSOM has a strong commitment to the achievement of excellence and diversity among its faculty and staff. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Electronic submission of materials is preferred. **Please submit your curriculum vitae to Cody Futch, Vice President of Academic Recruiting at Merritt Hawkins** at ucla@merrithawkins.com. Candidate inquiries will be strictly confidential until you have given permission to submit your application to the search committee.

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age or protected veteran status. For the complete University of California nondiscrimination and affirmative action policy see: UC Nondiscrimination and Affirmative Action Policy.

**CANCER EPIDEMIOLOGIST
ASSISTANT / ASSOCIATE PROFESSOR**

The Division of Preventive Medicine, Department of Medicine, at Brigham and Women's Hospital and Harvard Medical School seeks an Assistant or Associate Professor level scientist in cancer epidemiology. Applicants should possess a PhD and/or MD degree and have several years of relevant experience. Opportunities exist for collaboration with an active research group and access to large cohorts and blood/DNA repositories. Preference will be given to individuals who have demonstrated the ability to obtain grant support for their research. Applicants should have well documented commitment to epidemiologic research, and expertise in biomarker research (genomics, metabolomics, or epigenetics) is particularly sought. Appointment at the level of Assistant or Associate Professor and compensation will be commensurate with experience and institutional policies.

Please send CV, a description of research goals and accomplishments, a summary of current and past grant support, names of at least three references, and representative reprints of 3-5 original reports by November 1, 2015 to:

Chair, Cancer Epidemiology Search Committee
Division of Preventive Medicine
Brigham and Women's Hospital/Harvard Medical School
900 Commonwealth Avenue
Boston, MA 02215-1204

Email: jmanson@rics.bwh.harvard.edu

Phone: 617-278-0855

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- Bachelor's degree in a field directly related to research or data analysis (e.g., biostatistics or epidemiology) Master's degree preferred.
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- An understanding of univariate and multivariate statistical procedures, including generalized linear modeling and survival analysis
- Proficiency in the use of statistical analysis software (e.g., SPSS, SQL, Stata, R)
- Experience designing databases, working with large databases (>100,000,000 records), or using data in a variety of formats
- Experience using geographic information systems (GIS) and working with surveillance data

FOR FURTHER INFORMATION CONTACT**ROGER J. ZOOROB, MD, MPH, FAFAP**

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