THE PERIODIC TABLE OF ELEMENTS

En route to becoming a health professional, the academic preparation of many students will involve enrolling in a course in chemistry. A typical classroom usually features a wall display of the Periodic Table of Elements. Its presence is the result of the work of Dmitri Mendeleev who published it 150 years ago. A show of remarkable prescience on his part, one of its impressive characteristics was the inclusion of gaps waiting to be filled by new elements yet to be discovered that are based on properties he predicted. When initially formulated, the Table contained only 63 elements. Currently, there are 118 of them.

Most elements are found in nature (the number is subject to debate) while others were discovered in laboratories and nuclear accelerators. It is possible that some students enrolled in chemistry offerings at the University of California, Berkeley may have a deeper appreciation of the discovery process because 16 elements were synthesized or discovered on that campus, including Berkelium, Californium, Lawrencium, which honors Professor Ernest Lawrence who invented the cyclotron, and Seaborgium after Berkeley professor Glenn Seaborg.

This brief history of achievements in the physical sciences may serve as a segue into developments that occur in the sphere of health care. Public policy continues to be dominated by discussions regarding how best to achieve accessibility, affordability, and accountability in the provision of health care services. Just as chemical elements are grouped together in the Periodic Table on the basis of shared common properties, it is possible to examine comparable proposals aimed at enhancing accessibility, for example, while recognizing that significant gaps continue to occur between the provision of health care and the attainment of improved health status at both individual and community levels.

One definition of chemistry holds that it is concerned with the transformation of substances and all the energies associated with these transformations. Health care can be transformative either by preventing disease or by halting ill health in its tracks. The term mutability has some relevance in this regard. Race and ethnicity represent an immutable human characteristic. Age is another one, for an 80-year old patient cannot be transformed into a 20-year old individual. Unfortunately, interventions in health care that produce salubrious outcomes for members of one racial/ethnic or age group do not always prove to be as effective with other groups.

Social determinants hugely affect who gains and who loses in the acquisition of high quality health care services. While portions of human existence may be mutable in theory, it remains insurmountably challenging to overcome the effects of poverty, discrimination, joblessness, insufficient formal education, a low level of health literacy, loneliness, and residence in turbulent neighborhoods ravaged by pollution and violence. Such conditions often prove to be highly refractory to generating positive alterations, but change they must if the aims of health care are to be realized. Meanwhile, an understanding both of chemistry and health may be enriched by reading The Periodic Table by Primo Levi, an author who composed a poetic link between the disparate worlds of physical and human nature.
In my message in the November 2017 issue, I indicated that I will be asking some of you to send a photo and answer a series of “fun” questions to be shared with our membership so that we can continue our collegiality through our newsletter. The 10th of many profiles and the second in 2019 is presented as follows:

Name and Title: **Gregory Frazer**, Dean and Professor, Covey College of Allied Health Professions

*Place of birth:* Evansville, Indiana

*University:* University of South Alabama

*How long have you been in your position?* 3rd year at USA; 19th year as a dean

*What is the value of ASAHP?* ASAHP is the preeminent organization for peer administrators and educators that enables collaboration and sharing among those committed to educational and professional excellence.

*Your philosophy on education in seven words:* Skills and knowledge enable opportunity, achievement and success.

*If I could teach in another field, which one and why?* Medicine because I have witnessed the dramatic impact of the delivery of care all over the world.

*Before I retire I want to:* Establish an international learning opportunity in every program I’m responsible for.

*In college, I was known for:* Being the fraternity social chairman.

*What music is playing in my car/office?* Luther Vandross

*The last book I read for fun was:* ”Honoring the Trust” by William Massy

*My favorite trip was:* Machu Picchu

*If I could travel anywhere it would be:* Santorini, Greece

*Four people I’d take to coffee or have a glass of wine with:* Confucius, Rosa Parks, President Obama, and Herb Kelleher

*The best advice I ever received was:* “Never forget where you came from and those who helped you be where you are today”

*My hobby is:* Racquetball

*My passion is:* Photography

*My pet peeve is:* Dirty car

*A perfect day is:* Professionally, its graduation. Personally, a sunny day on the beach with family and friends.

*Cats or dogs?* DOGS

*E-book or hardback?* Hardback

*Beach or mountains?* Beach

*I wish I could:* Share my passion for my work with all of my colleagues.

*Only my friends know I:* See what a challenge golf is to play.

*My favorite saying is:* “Fair is a playground term” as in “this policy isn’t fair.”
OPEN SEASON FOR LEGISLATION

The 1st Session of the 116th Congress is off to a brisk start. Given the fact that 2020 will involve an election to determine who will occupy the White House beginning in 2021, Congressional activity can be assessed within that context. Several Capitol Hill Democrats already have announced officially that they are in the race to decide which of them will be that party’s representative in the November election next year. A portion of the appeal of these candidates to voters will rest on legislative proposals that they endorse. Another venue where Congressional officials can operate effectively is as participants in hearings that highlight either defects in current Administration policies or alternative courses of action to adopt, which they espouse.

During his State of the Union Address to Congress on February 5, President Donald Trump served up a menu of examples of bipartisan cooperation that produced meaningful results, while also identifying areas where a reduction in partisan wrangling could lead to even more dramatic improvements in addressing topics of great importance to the nation’s welfare. Clearly, politics will provide a backdrop for what unfolds or fails to materialize between now and next year’s election. Not too surprisingly, the party in power always wants to be in the position of boasting of its enormous achievements, thereby furnishing a rationale why its leadership should be retained. The party out of power cannot be expected to cooperate in the passage of legislation that will burnish their opponents’ claims. Instead, it will redound more to their advantage to focus on the inadequacies of the other party and illustrate to voters in compelling terms why they would be better equipped to achieve more positive results once elected.

The President reminded his listeners on that occasion that both parties in the previous two years had come together: to pass unprecedented legislation to confront the opioid crisis, produce a sweeping new Farm Bill, and achieve historic Veterans Administration reforms. He said that as recently as only weeks ago, Democrats and Republicans united for groundbreaking criminal justice reform. Working closely with both groups, the Administration was able to sign the First Step Act into law, legislation that reformed previous sentencing laws that wrongly and disproportionately have harmed the African-American community. The Act gives non-violent offenders the chance to re-enter society as productive, law-abiding citizens.

Assuming that same cooperative spirit can prevail in the current session of Congress, then it may be possible to pass an infrastructure bill, including investments in cutting edge industries of the future. Along with proposing a nationwide paid family leave so that every new parent has the chance to bond with newborn children, the President identified the following objectives pertaining to health: (1) increase investments in HIV prevention programs, such as the Ryan White HIV/AIDS Program, and direct funding to launch new programs through community health centers to provide preventive medication to high-risk individuals, (2) allocate more than $500 million over the next 10 years to fund research for childhood cancer, (3) lower the cost of healthcare and prescription drugs and protect patients with pre-existing conditions, and (4) expand efforts to reduce “surprise billing” where patients are billed for care that is much more expensive than anticipated or is not covered by their insurance.

It is unclear whether any of these initiatives will see the light of day prior to November 2020. What is certain is that the 116th Congress will be worth monitoring to see what eventually unfolds.

2019-2020 ASSOCIATION CALENDAR OF EVENTS

February 2019—Institutional Profile Survey Launched

February 2019—Higher Logic Communication Tool Provided to Institutional Members

October 16-18, 2019—ASAHP Annual Conference in Charleston, SC

October 26-30, 2020—ASAHP Annual Conference in Long Beach, CA
HEALTH REFORM DEVELOPMENTS

Although other aspects of health reform occasionally crop up, the Affordable Care Act continues to represent the centerpiece of efforts to transform the delivery of health care, reduce costs, and increase the number of individuals who have an adequate amount of insurance coverage. As the years have gone by, Republicans through legislation introduced in Congress and in law suits filed by Attorneys General in several states have been successful in making some changes, such as eliminating the individual mandate, but they have not been able to repeal and replace this law.

As discussed below, with the passage of time it is relatively easy to lose sight of some of ACA’s elements. An example is the so-called “Cadillac tax.” Originally scheduled for implementation in 2018, postponements have occurred. More recently involving a separate matter, the U.S. Department of Labor in June 2018 was successful in having a rule finalized to expand the ability of employers to join together to offer health coverage through Association Health Plans, which provide short-term limited insurance coverage that may be less adequate in comparison to consumer protections in the ACA. Opposition by Democrats continues to be expressed to making these plans available. Meanwhile, the U.S. Senate maintains an interest in supporting primary care to lower health costs and improve patient outcomes.

The Cadillac Tax As A Means Of Offsetting Health Care Costs
The Cadillac tax is a provision in the ACA that affects high-cost employment-based health plans. It consists of a non-deductible 40% excise tax imposed on the portion of health coverage costs that exceed $10,200 for single coverage and $27,500 for family coverage. Initially scheduled to become effective last year, it since has been delayed twice and presently is scheduled to take effect in 2022. By that year, the amounts will change to $11,200 for single coverage and $30,150 for family coverage. The original plan was to generate tax revenues that could help mitigate increasing health care costs and assist in financing other ACA provisions. If and when it ever becomes operational, nothing can be known until then regarding whether this tax can lead to the achievement of financial objectives.

Short-Term Association Health Plans And State Regulations
The Commonwealth Fund has issued concerns that short-term policies may be deceptively marketed, with some sellers leading consumers to believe they are buying a comprehensive policy when they are not. Efforts by the states to regulate these plans may be undermined by a loophole that limits their ability to perform basic consumer protection functions because many short-term plans are being sold through out-of-state associations that are exempt from state regulation. These entities are able to file insurance products for approval in one state and then sell the same policies in other states that have exempted policies, such as benefit mandates. In those jurisdictions, the association is then regulated by the state of approval, rather than the state in which the coverage is purchased.

How Primary Care Can Affect Health Care Costs And Outcomes
The U.S. Senate Health, Education, Labor, and Pensions (HELP) Committee held a hearing on February 5, 2019 in Washington, DC to discuss the role of primary care in influencing health care costs and patient outcomes. Individuals offering testimony included:

◆ **Tracy Watts**, a Senior Partner and U.S. Healthcare Reform Leader at Mercer. Her remarks focused on ways employers are working to improve employee health and manage healthcare costs through onsite clinics and other innovative strategies.
◆ **Katherine Bennett**, Assistant Professor of Medicine and Program Director of the Geriatric Medicine Fellowship at the University of Washington, described Project ECHO, the Extension for Community Health Outcomes, an effort launched in more than 160 locations in the U.S. to address complex conditions, such as HIV, tuberculosis, and mental illness.
◆ **Sapna Kripalani**, Assistant Professor of Medicine at Vanderbilt University Medical Center, provided an example of the value of primary care for an obese patient with complex conditions involving diabetes, hypertension, seizure disorder, and bipolar disorder.
DEVELOPMENTS IN HIGHER EDUCATION

The start of the 116th Congress in January 2019 is the first one in which the House and Senate are controlled by different parties since the 113th Congress (2013-2015). A long overdue reauthorization of the Higher Education Act may be one piece of major legislation that could be addressed this year. If so, the following kinds of changes might be considered in the context of making some needed improvements: simplifying the federal student aid application, creating a new income-based repayment plan for borrowers, building a new accountability system for colleges based on whether borrowers actually are repaying their loans, expanding competency-based education programs, requiring colleges to use clearer language in letters telling students about the aid they’re receiving, and collecting better data on how much students borrow and how much they earn after graduation. Other possibilities include allowing incarcerated individuals to access Pell Grants and making grants available for shorter academic programs.

More than 104,000 responses recently were generated to comment on proposed Title IX rules by the U.S. Department of Education regarding how schools handle sexual assault allegations. Acknowledging that some would-be respondents may have experienced technical issues involving the website that could have preventing the submission of comments, the site was reopened for the single day of February 15, 2019. Examples of what the controversy entails also are described below:

Reducing Student College Debt
During the last four years, the U.S. Senate Committee on Health, Education Labor & Pensions (HELP) has held 27 hearings on the Higher Education Act. A concern expressed at many of these sessions is the problem of the significant burden of student debt. Approximately 43 million individuals, one in six adult Americans, have federal student loan debt and the federal student loan portfolio currently is approaching $1.5 trillion. A key aspect of the situation is applying for financial aid, a process that may be a suitable candidate for implementing some beneficial modifications.

One possible remedy is reducing the 108 questions to a much smaller number (e.g., 15-25) in the Free Application for Federal Student Aid (FAFSA) that 20 million families must fill out each year if they want a federal grant or loan to help pay for college. Not only does providing answers involve a significant amount of effort, a related issue is that some applicants may be intimidated by the complexity of the required information, making them wary of giving the Education Department data they already have provided to the IRS. Another impediment is that a verification process can suspend Pell Grant payments while a family has to resubmit tax information and wait for the government to check to ensure that the information is correct. To the extent that some students may be unable to attend college because of an inability to obtain financial aid, a solution involving the FAFSA is warranted.

Title IX Proposed Rule Involving Sexual Assault Allegations
Academic institutions are not equivalent to courts of law, yet they are responsible under Title IX to respond to allegations of sexual harassment, including sexual assault. Cases of this nature can be quite difficult to resolve because of differing accounts of what transpired and time lapses between when an event occurred and when it is reported. The challenge in such instances is to adopt processes to ensure that the parties involved are treated fairly and equitably. Depending on one’s perspective, the proposed rule consists of provisions that may be considered:

Helpful (e.g., requires institutions to provide both parties with reasonable time to prepare for any interview or disciplinary hearing).

Not Helpful (e.g., a requirement for a live hearing with cross-examination, which in effect is viewed as the same as legalistic, court-like processes that should not be the responsibility of educational institutions).

Lack Of Clarity (e.g., the term “due process” basically adds to an existing level of confusion).
QUICK STAT (SHORT, TIMELY, AND TOPICAL)

Record Number Of Novel Medical Devices Approved By The FDA In 2018
According to Scott Gottlieb, Commissioner of the U.S. Food & Drug Administration, a record 106 novel medical devices were approved in 2018, surpassing the 40-year approval record set in 2017, which was 99. Innovative new products that have come to market in 2018 as a result of an efficient, risk-based approach to total product life-cycle regulation include: expanded approval of an automated insulin dosing system to include patients with diabetes who are as young as age seven; the world’s smallest heart valve for newborns; the first blood test in the world to evaluate mild traumatic brain injury (“concussion”); the first mobile medical app to help treat substance abuse disorders; technologies using artificial intelligence to detect diabetic retinopathy in adults with diabetes and for aiding providers in the detection of wrist fractures. Additional approvals included the first artificial iris in the U.S. and permitted marketing of a new prescription medical device that measures eye movement as an aid in the diagnosis of concussion.

Nearly One-Quarter Of Antibiotic Prescriptions Filled Are Unnecessary
Of the 15.5 million antibiotic prescriptions filled in 2016 by a population of 19.2 million privately insured children and adults under age 65, nearly one-quarter were unnecessary, according to a study funded by the Agency for Healthcare Research and Quality (AHRQ). Published on January 17, 2019 in the journal *BMJ*, the results indicate that an additional 36% of antibiotic prescriptions in 2016 were only "potentially appropriate." The analysis provides the most comprehensive estimates to date of inappropriate prescribing of antibiotics among individuals with private, employer-sponsored insurance. Appropriate antibiotic prescribing means that the medication is recommended for the patient's condition. Researchers conducted a combined analysis of a U.S. medical claims database and the 2016 version of an international system for categorizing diseases (ICD-10-CM). The analysis provides the most comprehensive estimates to date of inappropriate prescribing of antibiotics among individuals with private, employer-sponsored insurance.

HEALTH TECHNOLOGY CORNER

Enhanced Toy Dog Robot Includes An Ability To Learn From Its Owners
According to the January 2019 issue of the journal *Science Robotics*, the return of Aibo, Sony’s toy dog first introduced nearly 20 years ago, is welcomed by many, and not just because of its new appearance, enhanced voice understanding, and its improved ability to learn from its owners. In the new addition, the robot has been developed with Sony’s increasing awareness of the role that robots can play in childhood learning or as a companion for the aged, particularly those with neurodegenerative diseases. Understanding the perception, interaction, and expectations of humans around the robot and developing robot behavior and personality that are context aware (not dependent on pre-scripted programs and with personalization and adaptation) are interesting topics in social robotics. The device was highlighted in the journal as one of 10 Robotic Technologies Of The Year.

Electrical Stimulation Of The Brain During Surgery Produces Immediate Laughter And Calm
Neuroscientists at Emory University School of Medicine have discovered a focal pathway in the brain of a patient that when electrically stimulated causes immediate laughter, followed by a sense of calm and happiness, even during awake brain surgery. The behavioral effects of direct electrical stimulation of the cingulum bundle, a white matter tract in the brain, were confirmed in two other epilepsy patients undergoing diagnostic monitoring. The findings were published on February 11, 2019 in the *Journal of Clinical Investigation*. The technique is viewed as a potentially transformative way to calm some patients during awake brain surgery, even for individuals who are not especially anxious. For optimal protection of critical brain functions during surgery, patients may need to be awake and not sedated, so that doctors can talk with them, assess their language skills, and detect impairments that may arise from resection. Outside of use during awake surgery, understanding how cingulum bundle stimulation works also could inform efforts to treat depression, anxiety disorders, or chronic pain more effectively via deep brain stimulation.
AVAILABLE RESOURCES ACCESSIBLE ELECTRONICALLY
Adoption Of A National System For Electronic Use And Exchange Of Health Information

The Office of the National Coordinator for Health Information Technology (ONC) has released its 2018 Report to Congress. As of 2015, 96% of nonfederal acute care hospitals and 78% of office-based physicians adopted certified health IT, however, hurdles to progress still remain. For example, many certified health IT products lack capabilities that allow for greater innovation in how health information can be securely accessed and easily shared with appropriate members of the care team. Such innovation is more common in other industries. Also, lack of transparent expectations for data sharing and burdensome experiences for health care providers limit the return on investment for health care providers and the value patients are able to gain from using certified health IT. Information not always is accessible across systems and by all end users, such as patients, health care providers, and payers, in the market in productive ways. For example, despite the individual right to access health information about themselves established by the HIPAA Privacy Rule, patients often lack access to their own health information, which hinders their ability to manage their health and shop for medical care at lower prices. Health care providers often lack access to patient data at the point of care, particularly when multiple health care providers maintain different pieces of data, own different systems, or use health IT solutions purchased from different developers. Also, payers often lack access to clinical data on groups of covered individuals to assess the value of services provided to their customers. The report can be obtained at https://www.healthit.gov/sites/default/files/page/2018-12/2018-HITECH-report-to-congress.pdf.

Current Status And Response To The Global Obesity Pandemic

On October 9, 2018, the Roundtable on Obesity Solutions, held a public workshop in Washington, DC entitled Current Status and Response to the Global Obesity Pandemic.” The workshop examined the status of the global obesity pandemic and explored approaches used to manage the problem in different settings around the world. The “Proceedings of a Workshop In Brief” highlights presentations that discussed the importance of understanding the obesity epidemic in global context and shared perspectives on the implications of obesity as a global problem for prevention and treatment efforts in the United States, with an emphasis on reducing disparities. A report was released on January 11, 2019. It can be obtained at https://www.nap.edu/catalog/25349/current-status-and-response-to-the-global-obesity-pandemic-proceedings.

How Innovation Will Blur Traditional Health Care Boundaries

According to the firm Deloitte, by 2040, health care as known today will no longer exist. A shift will occur from “health care” to “health.” Disease never will be completely eliminated, but through science, data, and technology, it can be identified earlier, proactive interventions can be implemented, and its progression can be understood better. The future will be focused on wellness and managed by companies that assume new roles to drive value in the transformed health ecosystem. Driven by greater data connectivity; interoperable and open, secure platforms; and increasing consumer engagement, 10 archetypes are likely to emerge and will replace and redefine today’s traditional life sciences and health care roles to power the future of health. The 10 archetypes will fall into three distinct, but interconnected, categories: Data and platforms will be the foundational infrastructure that will generate the insights for decision making. Care enablement will be connectors, financers, and regulators that help make the industry’s “engine” run. Well-being and care delivery will be the most health-focused of the three groupings, consisting of care facilities and health communities, both virtual and physical. The report can be obtained at https://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/future-of-health.html?id=us:2em:3na:foh:awa:lshc:021019&ctr=textlink&sfid=0033000001OcSbrAAF.
IDENTIFICATION, EVALUATION, AND COMPARISON OF HEALTH DEVICES

The technology marketplace is a veritable paradise for entrepreneurs attracted to electronic devices that can be used by consumers to enhance their personal health status. For example, a patient who has undergone breast cancer surgery may want to engage in the use of wearable sensors and cloud-based apps so that upon returning home after being discharged from the clinical setting, this individual may want to provide daily information to the health care team about her conditions and successes experienced in self-care involving physical exercise, massage, and skin care.

An article published on February 14, 2019 in the journal *npj Digital Medicine* indicates that recent years have witnessed an explosion in the number of wearable sensing devices and associated apps that target a wide range of biomedical metrics, from actigraphy to glucose monitoring to lung function. It is estimated that the number of connected wearable devices worldwide will increase from 325 million in 2016 to 929 million by 2021. Similarly, the digital health consumer base is growing in tandem, and it is forecasted that by 2021, the number of individuals using remote monitoring programs will grow to 52 million globally. This increased availability and choice of sensors is accompanied by a great challenge to optimize the match between the sensor and a specific application context. A structured approach is needed first to refine the requirements for a specific application, and then to evaluate the available devices against those requirements.

Increased device availability is leading to greater research and commercial opportunity, but it also can create significant confusion, especially for professionals who are attempting to select appropriate technologies that meet the requirements of their specific application for a clinical trial, research study, or a digital health service. The authors posit that there are no standardized methods to help professionals identify, evaluate, and compare the numerous human performance devices available. Consequently, they describe a framework that provides a comprehensive tool to enable users to define their specific requirements, conduct a systematic Web search and complete a holistic desk-based evaluation, to determine whether one or more devices are fit for purpose and worthy of field testing.

PUTTING PATIENTS FIRST AND DISPARITIES RESEARCH

The Centers for Medicare & Medicaid Services (CMS) collaborated with a wide variety of partners to support work in all three areas of its path to equity: increasing the understanding and awareness of disparities and their causes, developing and disseminating solutions, and implementing sustainable actions. As a way of increasing understanding and awareness of disparities, CMS sponsored the February 2019 issue of the journal *Health Services Research*, with a goal of contributing to the discussion on health disparities and emphasizing the value of continuing research in this area. An aim is to underscore the importance of identifying groups of patients who do not benefit equally from the health system and also identifying root causes of such differences.

One study in the issue focused on inpatient care experiences that differ by preferred language within racial/ethnic groups. Six composite measures for seven languages (English, Spanish, Russian, Portuguese, Chinese, Vietnamese, and Other) within applicable subsets of five racial/ethnic groups (Hispanics, Asian/Pacific Islanders, American Indian/Alaska Natives, Blacks, and Whites) were compared. Within each racial/ethnic group, mean reported experiences for non-English-prefering patients were almost always worse than their English-prefering counterparts. Language differences were largest and most consistent for *Care Coordination*. Within-hospital differences by language were often larger than between-hospital differences and were largest for *Care Coordination*. Where between-hospital differences existed, non-English-prefering patients usually attended hospitals whose average patient experience scores for all patients were lower than the average scores for the hospitals of their English-prefering counterparts. The investigators concluded that efforts should be made to increase access to better hospitals for language minorities and improve care coordination and other facets of patient experience in hospitals with high proportions of non-English-prefering patients. A focus should be on cultural competence and language-appropriate services.