The Gene: An Intimate History
Siddhartha Mukherjee
Scribner, May 17, 2016, 608 pages
Reviewed by David A. Bennahum, MD (AΩA, University of New Mexico, 1984, Faculty)

This is a remarkable book written with elegance and in a personal, autobiographical style. The author opens with a prologue that tells the history of psychosis in at least three members of his father’s generation. He relates their stories and the tragic, violent history of the 1947 Partition of India, a political, but also an hallucinatory division of the nation into Hindu and Muslim states. After an introspection on the nature of hereditary mental illness in his own family, he turns to a 2009 Swedish study:

In 2009, Swedish researchers published an enormous international study, involving thousands of families and tens of thousands of men and women. By analyzing families that possessed intergenerational histories of mental illness, the study found striking evidence that bipolar disease and schizophrenia shared a genetic link….In 2012, several further studies corroborated these initial findings….I read two of these studies on a winter morning on the subway in New York, a few months after returning from Calcutta….The study provided a strange interior solace—answering some of the questions that had so haunted my father and grandmother. But it also provoked a volley of new questions: If (my cousin) Moni’s illness was genetic, then why had his father and sister been spared? What “triggers” had unveiled these predispositions? How much of Jagu’s or Moni’s illness arose from “nature” (i.e., genes that predispose to mental illness) versus “nurture” (environmental triggers such as upheaval, discord and trauma)? Might my father carry the susceptibility? Was I a carrier as well? What if I could know the precise nature of this genetic flaw? Would I test myself, or my two daughters? Would I inform them of the results? What if only one of them turned out to carry that mark? p8

On a trip with his father to Calcutta they visit the family home returning to their tragedy of inherited mental illness:

We climbed to the balcony on the roof….Dusk was falling so quickly that it seemed you could almost sense the curvature of the earth arching away from the sun. My Father (who had lost three brothers to mental illness) looked out toward the lights of the station. A train whistled in the distance like a desolate bird. He knew I was writing about heredity. “Genes,” he said, frowning. “Is there a Bengali word?” I asked. He searched his inner lexicon….“Abhed,” he offered. I had never heard him use the term. It means “indivisible” or “impenetrable,” but it is also used to loosely connote “identity”….A flaw in identity; a genetic illness; a blemish that cannot be separated from the self—the same phrase served all meanings. He had made peace with its indivisibility. p91

The author turns to the search for the mechanisms of heredity that were gradually teased out between 1890 and 1970. He reminds us that Aristotle had understood that the transmission of heredity was the transmission of information. He then takes the reader on the search for the genetic code that controls the cell. “In the 1890s, a German Embryologist working with sea urchins in Naples, Theodore Boveri, had proposed that genes resided in chromosomes…in the nucleus of cells.” p92

In 1905, biologist Nettie Stevens demonstrated that maleness in worms depended on the Y chromosome. In the same decade Thomas Morgan began his life long study of fruit flies at Columbia University, and at the laboratories at Woods Hole. Morgan asked, “How were genes organized on chromosomes? Were they strung along chromosomal filaments—like pearls on a string? Did every gene have a unique chromosomal ‘address?’ Did genes overlap? Was one gene physically or chemically linked to another?” p93

The author reminds the reader of the Hemophilia B gene that Queen Victoria appears to have acquired by chance mutation, and then transmitted to her daughter Alice, who transmitted it in turn to her daughter...
Alexandra the future czarina of Russia, whose son Alexei had Hemophilia B with catastrophic consequences for himself and the Romanov Court, the Russian Revolution and the Russian people. He also tells the story of Rosalind Franklin, Maurice Wilkins, James Watson, Francis Crick, and the race to describe and explain the structure of DNA:

Like Pythagoras’s triangle, like the cave paintings at Lascaux, like the Pyramids at Giza, like the image of a fragile blue planet seen from outer space, the double helix of DNA is an iconic image, etched permanently into human history and memory.\(^{136}\)

The author continues with a detailed discussion of the human genome, the latest experiments on gene replacement, and the hope for treatment of genetic disease:

Our genome has negotiated a fragile balance between counterpoised forces, pairing strand with opposing strand, mixing past and future, pitting memory against desire. It is the most human of all things that we possess. Its stewardship may be the ultimate test of knowledge and discernment for our species.\(^ {195}\)

This is a worthwhile book that is rich in insights, graced by wonderful language, informed by a deep erudition in science, philosophy, literature, and history. It is worth every readers’ time and effort, and sets a standard in writing about the history of science.

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**The Amazing Language of Medicine: Understanding Medical Terms and Their Backstories**

Robert B. Taylor, MD
Springer, February 3, 2017, 238 pages

**Reviewed by Ira Rezak, MD**

Medical doctors are primarily thought of as healers, even though many may prefer to perceive of themselves as scientists, administrators, teachers, or humanitarians. For centuries, doctors have earned well justified reputations as being both learned and skilled in diverse fields of knowledge.

Dr. Robert B. Taylor, Emeritus Professor of Family Medicine at the Oregon Health and Science University in Portland, has published 30 books on various aspects of medical practice. His most recent, The Amazing Language of Medicine: Understanding Medical Terms and Their Backstories, is an etymological, philological, and historical work that entertainingly elucidates esoteric origins of selected medical vocabulary with- out the constraints, bulk, or boredom of traditional medical dictionaries. Like Isidore of Seville, the medieval scholar who penned the encyclopedic volume Etymologiae or Origines, Taylor has ranged far and wide and tapped varied sources in the course of compiling this instructive work illuminating the provenance of medical terminology.

Richly illustrated on almost every page, this work is meant to broaden the perspective of practicing physicians, many of whom will not have had the inclination or opportunity to consider the lexical background of the terms they use daily. Derivations are described based on mythological associations (Mercury—a god before becoming a metal); imaginative comparisons based on appearances (Coccyx—from the Greek for a Cuckoo bird’s bill, which it resembles); and functions (bulimia—from the Greek for urgently eating like an ox). He describes words and terms that are borrowed from other languages (Hashish—from the Arabic for powdered hay or hemp); specific geographic locations (Clap—from a medieval red-light district in Paris); and onomatopoeia
(Quack—by analogy to the duck-like sounds of a medical huckster).

Another category consists of eponymous terms named either after physicians who discovered diseases (Addison’s, Hansen’s, and various Paget’s diseases); anatomic features (Baker’s cysts, Henle’s loops, Cooper’s ligament); diagnostic tests (Wasserman, Roentgen, Papanicolaou); and diagnostic physical signs (McBurney’s, Blumberg’s, Dunphy).

Eponymy is not confined to physician’s names, patients (Lou Gehrig, Stephen Christmas, Helen Lane) have diseases and cell types named for them, as do fantasy characters (Peter Pan, Popeye, Baron Munchausen). The author draws special attention to Tashima’s syndrome, named for Charles K. Tashima who in 1965 described “a condition in which a physician searches for a new sign, disease or symptom to which his name can be attached.”

Taylor defines a “nonce word” as a neologism, which he also terms an “authorism,” a word specially devised for a singular textual situation, but which does not catch on, and hence, has no afterlife. This he distinguishes from those neologisms that are both attributable to a specific author, and having been adopted by others, go on to persist as standard words or expressions. He cites the 17th century English physician Sir Thomas Brown as the originator of such words as “suicide, ambidextrous and locomotion;” Carl Jung rather than Sigmund Freud as the initiator of the notion of a psychological problem as a “complex;” and Percy Bysshe Shelly as the first to use the terms “heartless,” “optimistic,” and “national anthem.”

More modern neologisms, ranging from “fascinoma” (unascrbibed as to authorship) and “iPatient” which first appeared in the New England Journal of Medicine in 2008 in an article by Abraham Verghese (AΩA, James H. Quillen College of Medicine, 1989, Faculty), are also noted.

Many busy and highly focused physicians could do with a bit of distraction, and relaxation, from their daily studies and routines, and Taylor’s Amazing Language of Medicine, might be just the right medicine to refresh and rejuvenate one’s workaday practice while expanding one’s understanding of medical history in a significant way.

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East West Street: On the Origins of “Genocide” and “Crimes Against Humanity”

Philippe Sands
Vintage, July 11, 2017, 464 pages
Reviewed by David Bennahum (AΩA, University of New Mexico, 1984, Faculty)

Most physicians, and society at large, expect that health care professionals are guided by, and remain true to, a code of ethics. Students in medical schools around the world are often introduced to the ethics of medicine through reading and discussion of the Hippocratic Oath, the Oath of Thomas Percival, the Oath of Geneva, and the Prayer of Maimonides, as well as to the particular ethics of their community and religion. Yet, medicine as a profession has contributed not only to ethical practice, but also to eugenics, genocide, and crimes against humanity.

Extreme anti-Semitism and racism led to the horrors of the Nazi regime and the Holocaust, but the groundwork was laid in the pseudoscience of eugenics.

The monk Gregor Mendel’s mid-19th century discovery of genetics as the basis of heredity in plants was little known, and pretty much forgotten, until 1900. That infections were the basis for many diseases was unproven and not widely understood or accepted prior to 1892. In the absence of that knowledge eugenics was first proposed by Charles Darwin’s cousin, Sir Francis Galton (1822–1911) who initially suggested that “good” breeding would lead to a healthier and more intelligent population, and later to the idea that one could breed out perceived human defects.

In the United States in the 19th century, fear of
immigration; of the newly freed slaves and black migration; of poverty in the new industrial economy; and of poorly understood criminality, drunkenness and degeneracy created fertile soil for eugenics.

Eugenics institutes and journals appeared in the U.S. and Europe. They were followed by laws that blocked the immigration of Asians, and later Eastern Europeans, to America, as well as involuntary sterilization laws sustained by the U.S. Supreme Court in the famous decision, Buck vs. Bell, written in 1927 by Chief Justice Oliver Wendell Holmes Jr. As Holmes wrote in his majority opinion, “Three generations of imbeciles is enough.”

The Nazis would later point to American sterilization laws as a justification for their own actions.

In Germany, eugenics led to a racial hygiene movement espoused by Drs. Wilhelm Schallmayer and Alfred Plotz who wrote about “Rassenhygiene”—a new Germany that would be cleansed of the pollution of inferior races, particularly the Jews, but also the Roma and the Slavic races such as the Poles.

Hitler, while in prison in 1923 for the failed Munich Coup, read and was influenced by Principles of Human Heredity and Race Hygiene, by Bauer, Fischer and Lenz, and wrote about these ideas in Mein Kampf. In 1920, Binding and Hoche, professors of law and psychology, respectively, published The Sanctioning of the Destruction of Lives Unworthy to be Lived. The Nazi state created by Hitler and his followers was intensely biological and medical, emphasizing racial pollution and the need to cleanse out, as though with an antiseptic, polluting races. Eugenics would be the basis for the racial laws, the degradation, humiliation, and finally the destruction of the Jews of Europe.

In East West Street, by English barrister and human rights lawyer Philippe Sands, the origins of the concepts of crimes against humanity and genocide are explored. Intrigued by these terms, the author sets out to discover how they originated. The author is the child of Holocaust survivors from an area in Eastern Europe known as Galicia, that at one time or another comprised parts of Poland, the Ukraine, the Austro Hungarian Empire, Russia and Belarus. The story centers on the town of Lemberg, also known as Lwów, Lvov, or L'viv in southeast Poland, where between the wars there was an excellent university, a large Jewish population, and a rich cultural life.

Sands explores the lives of four people and their families:

1. His large family and what happened to them during the Holocaust.
2. Hersch Lauterpacht, professor of international law at Cambridge who was born in Zolkiew in 1897, a small town near Lemberg, and who originated the term crimes against humanity.
3. Rafael Lemkin, born in Ozerisko near Białystok in 1900, who as a lawyer and prosecutor coined the term genocide, found refuge in America after WWII where he campaigned for international laws forbidding genocide; 49 members of his family died in the Holocaust.
4. Hans Frank, Hitler’s personal lawyer and Governor General of Poland, who was directly responsible for the mass killings of Jews, Poles, Gypsies, Russian prisoners of war, and any one else caught up or deported to Nazi occupied Poland between 1939 and 1945.

The author locates Hans Frank’s son, Niklas, who turns out to be a warm and honest man who opens up to Sands about his father’s nefarious history. Hans Frank was a man who was well educated, lectured internationally on criminal law, loved classical music and played the piano, and had appropriated for himself from a Polish museum the exquisite portrait of Cecilia Gallerani painted by Leonardo da Vinci, also known as Lady with an Ermine.

Frank was proud to be identified as a war criminal by the New York Times. Early in 1943, he announced at an official meeting, “I have the honor of being number one.” The words were recorded in the daily diary without embarrassment. Even as the war turned against the Germans, he still believed that the Third Reich would last a thousand years, with no need to show restraint in relation to the treatment of the Poles and the Jews or the words he had spoken of them. “They must go,” he told his cabinet. “I will therefore, on principle, approach Jewish affairs in expectation that the Jews will disappear.” ...

“We cannot shoot these three and a half million Jews; we cannot kill them with poison,” he explained. “But we can proceed with the necessary steps that somehow or other will lead to their successful extermination.” These words too were recorded in his diary.⁹²⁴⁶

In the course of his research, the author discovers that both Lemkin and Lauterpacht studied criminal law at Lemberg with Professor Juliusz Makarewicz, although a few years apart. After the war, when the call for an international trial of the perpetrators of the Nazi killing machine led to the first Nuremberg trial, both Lemkin and Lauterpacht proposed that the Holocaust required new international crimes to be defined.

Why is this book relevant to medicine? While it was
Reviews and reflections

Hitler and his most senior advisors who conceived of the eradication of the Jewish people, as well as certain other groups such as homosexuals and the Roma, it was medical professionals who designed the camps; supervised the design and building of the gas chambers and crematoria; and chose the victims as they came off the trains directing the young and healthy to work, and the very young, the old, and the sick directly to their deaths.

This book is a thorough accounting of the origins of the Holocaust, genocide, and crimes against humanity. It is often harrowing, always compelling, and most readers will come away with a better understanding of the enormity of the crimes committed, their tragic impact on individuals caught up in the whirlwind of the Holocaust, and their survivors. And, an appreciation of how medicine and medical ethics must never be complicit in such crimes.

Suggested Readings


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Against Empathy: The Case for Rational Compassion

Paul Bloom
Ecco, December 6, 2016, 304 pages

Reviewed by Jack Coulehan, MD (AΩA, University of Pittsburgh, 1969)

Against Empathy is not a title likely to warm the hearts of most readers of The Pharos. Empathy is a core element in medical practice. We teach our students and residents that an empathic relationship with patients builds trust, promotes satisfaction, enhances accuracy in diagnosis, and increases effectiveness of treatment. Empathy is a sine qua non for contemporary practice models like narrative medicine, and patient-centered care. So who among us can be against empathy?

Paul Bloom, a Yale psychologist and expert in child development, has accepted the challenge. His provocative title turns out to be misleading, since the empathy he argues against is of the affective variety, not the cognitive form that concerns us in medicine. In fact, the book’s title is doubly misleading because Bloom acknowledges the positive value of affective empathy in family life and close relationships. He argues that an excess of affective empathy can lead us to make irrational, unjust, and even immoral life decisions.

First, definitions. Affective empathy is the ability to sense another’s feelings and internalize them, often called emotional contagion. This capacity develops in infancy; for example, an infant might respond to her mother’s anxiety with agitation and crying.

Cognitive empathy, or perspective-taking, develops later in childhood. This is the ability to understand, at least to some extent, what another person is thinking or feeling by careful observation and listening. Bloom recognizes that cognitive empathy, the sense in which most physicians use the word, is not only indispensible for medical practice, but for most other human relationships as well. Neuroimaging studies show that these two capacities light up different parts of the brain.

Strictly speaking, the old adage, “to walk a mile in another’s moccasins,” applies only to affective empathy,
in which you literally internalize others’ experience, and emotional distance collapses.

One example that Bloom presents is the shooting in 2012 of 20 children and six adults at Sandy Hook Elementary School in Connecticut:

Why did this give rise to such a powerful reaction? It was a mass shooting, and over the last thirty years in the United States, these have caused hundreds of deaths. This is horrible, but the toll from these mass shootings equals about one tenth of 1 percent of American homicides, a statistical non-event.

The media gave faces and stories to these children, hence inviting our empathic response, while most homicide victims are unknown to us, and therefore, largely ignored.

Another example is the case of Willie Horton, a prisoner released in 1987 pursuant to the Massachusetts prison furlough program, who subsequently committed rape. His release was considered a “humiliating mistake” on the part of Governor Michael Dukakis, and became a major factor damaging his presidential campaign. The program was actually a dramatic success because it reduced recidivism, and convicts released on furlough committed fewer crimes than peers who completed their sentences. The lurid story of rape, generating affective empathy for the victim, outweighed the demonstrable fact that Dukakis’ furlough initiative actually decreased the crime rate.

These cases weigh against empathy insofar as it distorts our thinking. We are simply unable to have empathy for the millions of suffering people whose stories we don’t know, and therefore, those we do know have an unfair advantage.

Bloom supports his argument about the “dark side” of empathy by presenting results of numerous fascinating studies. There appears to be little question that affective empathy, which the author deems similar to philosopher Adam Smith’s “sympathy,” can cause serious errors of judgment. These frequently lead to additional suffering, as when a well-publicized little girl jumps to the top of a transplant list, thus pushing back other, perhaps more needy, candidates.

Bloom also contends that kindness and compassion have no intrinsic relationship to affective empathy. He quotes Peter Singer and Olga Klimecki in distinguishing between the two capacities:

In contrast to empathy, compassion does not mean shar-

ing the suffering of the other; rather, it is characterized by feelings of warmth, concern and care for the other, as well as a strong motivation to improve the other’s well-being. Compassion is feeling for and not with the other.

Bloom considers “feeling for” a rational function, while “feeling with” is vulnerable to irrationality. Likewise, he presents reasonably strong—and surprising—evidence that there is little correlation between empathy scores and capacity for violence. Highly empathic people are just as likely to perform violent or cruel acts as those who score lower.

Against Empathy is a fascinating book written for a lay audience. Bloom summarizes a multitude of provocative studies in an engaging, popular style. It’s a fun book to read.

However, methinks he doth protest too much. First of all, he excludes cognitive empathy from consideration, and acknowledges that affective empathy lies at the core of close human relationships. He is concerned only with excess and distortion, as when identification with another’s feelings causes us to make irrational or immoral decisions that lead to adverse consequences. He is not so much against empathy as against an immature overreliance on affective empathy. Even in this limited sphere, the solution must require a positive program of enhancing rationality (e.g. moral reasoning, probability, and risk/benefit analysis), as well as the negative program of suppressing affective empathy. It takes two to tango.

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what’s left out

In what’s left out, his second collection of short stories, emergency medicine physician Jay Baruch has done it again—challenged and disquieted us with 13 stories that
are utterly original, frequently provocative, often avant-garde, and occasionally set in “unfamiliar and unsettling moral universes.”

The collection opens with “Satellites,” with an aging woman who has just been advised that her husband may not survive complicated heart valve surgery. As she and her son try to negotiate their way out of the huge hospital parking garage, the son must come to terms with his mother’s advancing dementia for which she has compensated so well, until the stress of the current situation. Both speak deep-seated truths. With incredulity, she quotes the surgeon’s parting words—so unrealistic when viewed from the family’s perspective—“Get some sleep?…I’m expected to go home and close my eyes?” All this while her son realizes that he has missed the autumn years of his parents’ lives, and that:

His kids, when they grow up, will probably flee him and his wife and come back east, and he wouldn’t blame them. When you’re young, life’s frustrations play out as a multiple-choice exam whose easy answer, though not always the correct one, is distance.

In sharp contrast, “Emotional Contagion” takes us into the unknown. The narrator and Jimmy are coworkers who have competed for the affections of the lovely Louisa, now deceased. They lament the loutish behavior of their younger teammates in the lab, and ponder the perils of losing grant funding if the drug research under way yields little in the way of results. The catch is that the narrator, Jimmy, and Louisa are lab rats destined, one way or another, for death and dissection at the hands of the exhausted grad student, Susan, and her boss, Dr. Ben Accomb.

Likely based on the report “Empathy and Pro-Social Behavior in Rats,” by Bartal, Decety, and Mason, published in Science, December 9, 2011, this is an unexpected, and highly creative exploration of the concept of emotional contagion, the ethics of animal research, and the potential for abuse of junior colleagues.

“Soft Landings” is the multi-layered first person narrative of Cape, a 25-year-old wannabe professional baseball player, struggling with lost dreams, the decline of his neighborhood, and a mother “swallowed up by depression.” New purpose comes to his life when Thistle, an elementary school classmate, recruits his help in the care of her grandmother, Annie, who now resides at the same wretched nursing home where Cape’s father died, demented and restrained after a devastating head injury.

As the young couple battles the problem of Annie’s increasing dementia, frequent falls, and subsequent head lacerations, Cape continues his quest for baseball fame only to end up with a concussion himself. The author slyly unveils Cape’s increasing sense of self beyond the baseball paradigm, and the growing bond between him and Thistle. Laced with baseball imagery, this is a gentle, at times heart-breaking, story of family, love, and loss in which the author explores the notion of “the best option for those without options.”

Two stories in the collection are directly linked. In “Comfortable,” Lori, a nurse in the ICU, must respond to the director’s euphemistic order “[m]ake him comfortable” twice in the 48 hours preceding the first anniversary of her son’s death in a car crash caused by an intoxicated county judge. As that anniversary approaches, Lori shuts out friends who try to understand her grief, is harassed by the judge dealing with his own guilt, and finally realizes “she needed the hatred. Without it, she faced the full thrust of her grief, the severity of how much she missed her son.”

“The Telephone Pole” is set two years later. The judge who killed Lori’s son has met his own demise in another alcohol-fueled accident, this time wrapping his car around a telephone pole where other drunk drivers have also met their doom. What unfolds in this biting satire is an exploration of political corruption; “spinning” by the media; increasing accommodation to the self-destructive behavior of others; and a public responding with herd mentality. The story comes to a crashing end with the deaths of three teenage boys and the apparent compromise in values of the protagonist—an accident scene investigator—who originally worked toward truth but now speaks in half-truths in order to preserve his job. Here, Baruch pushes the boundaries of believability to the limit.
In “what’s left out,” the title story of the collection, we meet Dr. Max Reece, an emergency medicine physician who has just returned to work in a dismal treatment center. Two years earlier, a YouTube video of him ejecting a patient from the emergency department (ED) where he worked led to public humiliation and the loss of his job. Filled with personal uncertainty, he must care for Tamika, a poor, uninsured, 19-year-old asthma patient on the verge of respiratory arrest. Unable to trust Dr. Reece, a ferociously protective sister takes Tamika away, only to return and then call “Cousin” to the rescue. Cousin is a drug dealer from their housing project who also specializes in asthma care—after all, many people in the projects are so afflicted.

Cousin knows his stuff, and Tamika is spared the ventilator. “what’s left out” drives the story in jarring but haunting ways: the revocation of universal coverage for life-saving dialysis and asthma care; the omitted details of the situation in the ED at the time the YouTube video maligning Dr. Reece was recorded; the reason why Tamika’s sister rejects any notion of ventilator support for her; and the consideration of how the women might pay for services rendered, both by Dr. Reece and by Cousin. In this story, we see Baruch at his best.

“Fortunata” is a story that swirls bizarrely around a corrupt pharmaceutical company executive; his wife who is committed to serving inner city youth through her charity Kids Now; and their daughter, a college student learning in a medical ethics course about “landmark abuses of human subjects in clinical research” including that done by her father’s company. Pushing the envelope again, Baruch challenges us to consider the often dark side of clinical research, and our growing propensity to “medicalize” many aspects of life in order to justify medical/pharmaceutical intervention.

Filled with subtlety and nuance and the essence of the human condition, this new collection is the work of a master storyteller. These stories should be savored over time, and considered closely.

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More AΩA member books

The Gland Illusion: Early Attempts at Rejuvenation through Male Hormone Therapy, by John B. Nanninga, MD (AΩA, Northwestern University, 1996, Alumnus); McFarland, February 2017, 210 pages

A Chancellor’s Tale: Transforming Academic Medicine, by Ralph Snyderman, MD (AΩA, State University of New York, Downstate Medical Center, 1965), Foreward by Darrell G. Kirch, MD (AΩA, University of Colorado, 1976); Duke University Press Books, November 8, 2016, 336 pages

The Education of Doctor Montefiore, by Emmet Hirsch, MD (AΩA, Northwestern University, 1987); self-published, September 20, 2016, 294 pages


Science, Literature, and Humanity, The Making of a Physician, by Frank C. Wilson, MD (AΩA, University of North Carolina, 2007, Faculty); Chapel Hill Press, Inc., April 1, 2016, 226 pages

The Anti-Depressant Book: A Practical Guide For Teens And Young Adults To Overcome Depression And Stay Healthy, by Jacob Towery, MD (AΩA, University of Virginia, 2006); self-published, March 15, 2016, 310 pages

A Cancer in the Family: Take Control of Your Genetic Inheritance, by Theodora Ross, MD, PhD (AΩA, Washington University in St. Louis School of Medicine, 1993); Avery, February 2, 2016, 3014 pages