The Pharos of Alpha Omega Alpha Honor Medical Society

Summer 2015

“Be Worthy to Serve the Suffering”

Alpha Omega Alpha Honor Medical Society
Founded by William W. Root in 1902

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The good physician knows his patients through and through, and his knowledge is bought dearly. Time, sympathy, and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient. —Francis W. Peabody

The Winter 2015 issue of The Pharos featured an article titled, “The Electronic Health Record: Are We the Tools of Our Tools?” by K. Patrick Ober and William B. Applegate (pp. 8–14). In it, the authors described their institution’s and physicians’ experiences with electronic health record (EHR) systems, discussed the general state of EHRs and how they are used today, related the problems they have experienced with EHRs, and made recommendations for changing how we use them to reestablish the primacy of the doctor-patient relationship.

Their article hit a nerve. We and the authors received many comments on the article, two of which can be seen in Letters to the Editor on page 43. They were, as one might predict, almost uniformly in agreement that EHRs fall far short of what physician and patients need.

My own first experience with EHRs was in the 1990s in a university ambulatory care internal medicine practice. I looked forward to the coming implementation with anticipation, since I felt that EHRs would improve patient care, leading to more efficiency and safety. I was disappointed, as many of us were. Twenty years later, we are still disappointed.

It is important to emphasize that medical records have existed since the beginning of the profession of medicine. Some of the first medical case histories frequently used in teaching were written by Hippocrates in the fifth century BC. The clinical medical record appeared in the nineteenth century in Europe in major teaching hospitals, and was soon adopted in the United States. The modern medical record was developed in the twentieth century—data about each patient, including clinical data, was recorded, organized, often in a standardized format, and stored. Improvements in medical records continued during and after World War II in step with advances and progress in medicine. Complete and accurate medical records enabled physician and institutions to better care for and treat patients and improve the safety and quality of care.

In the 1960s, Dr. Lawrence Weed developed the problem-oriented system, the SOAP system for organizing medical records in follow up visits in the hospital and office. At roughly the same time, work began in developing an electronic medical record system to manage the increasing volumes of paper records. Adoption began in the 1990s and continues to today.

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**Editorial**

**The tragedy of the electronic health record**

Richard L. Byyny, MD, FACP

The good physician knows his patients through and through, and his knowledge is bought dearly. Time, sympathy, and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient. —Francis W. Peabody

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Regardless of the format and storage of the clinical record,
there are essential elements of the medical record that are fundamental to clinical reasoning and the care of the patient, including: chief complaint, medical history and other patient information, physical examination, assessment and clinical reasoning, diagnosis or differential diagnoses, diagnostic plan, treatment and therapy, and proposed follow up.

What doctors have long been told remains true: “Listen to your patients, they are telling you the diagnosis.” Listening to the patient, followed by reflection, takes time but is a key part of the doctor-patient relationship and the care of the patient. The importance of listening in eliciting the medical history is highlighted in Kathryn Montgomery’s book How Doctors Think: Clinical Judgment and the Practice of Medicine.

Despite all the prohibitions against “anecdotal knowledge” in medicine, case narration is the principal means of thinking and remembering—of knowing—in medicine. The interpretive reasoning required to understand symptoms and signs and to reach a diagnosis is represented in all its situated and circumstantial uncertainty in narrative.

During the acquisition of the history, active clinical reasoning is constantly occurring: generation of hypotheses, clinical reasoning, questions, information acquisition, further hypotheses, and more clinical reasoning as a conscious active process. The physician takes the patient’s story, logically organizes it, and records it in the medical record. The chronological narrative and sequence is then used to infer causality. This becomes the basis for medical cognition—the physician uses medical and scientific knowledge and applies it to the history and examination to reach a diagnosis and develop a plan. In addition, the process of taking the history and retelling the story contributes to the doctor-patient relationship and the care of the patient. This also leads to better patient understanding of their illness.

Progress notes as well are often organized chronologically, with the narrative provided by the patient about the interval symptoms and suffering—combined with observations about what has happened in the interval from nurses and others, pertinent examination findings, test results and their interpretations, and information from consultations—resulting in an assessment based on clinical reasoning about the progress of the patient’s condition.

A medical record—whether paper or digital—must preserve the information that the physician carefully and thoughtfully elicits from the patient in a form that, above all, facilitates clinical reasoning. Current EHRs do not.

Current EHRs have, in many cases, resulted in serious negative or harmful unintended consequences, foremost of which are disrupting the doctor-patient relationship and interfering with quality patient care. It is not just that the technology is new and still needs to be widely implemented and used. We are well beyond that phase, and adverse effects on patient care are well documented.

While the bad outweighs the good, the few positives of the use of EHRs include:

- The availability of a legible medical record during a visit.
- Improved tracking of guideline compliance and markers of disease control over time.
- Better communication with patients and between providers by facilitating access to other providers’ notes and through patient messaging applications.
- Increased billing and revenue generation and generation of relative value units (RVUs).
- Access to patient information when on call.
- Administrative documentation.

On the other hand, a 2013 RAND Corporation report performed at the request of the AMA, Factors Affecting Physician Professional Satisfaction and Their Implications for Patient Care, Health Systems, and Health Policy, reported this:

We found that EHR usability represents a relatively new, unique, and vexing challenge to physician professional satisfaction. Few other service industries are exposed to universal and substantial incentives to adopt such a specific, highly regulated form of technology, which has, as our findings suggest, not yet matured.

The RAND study also reported that, unfortunately, physicians’ experiences with EHR functionality did not improve over time. Even more distressing, the more functions the system gained, the more complex it became, and the harder it was for physicians to use it, worsening their ability to care for patients. Typical attributes of EHRs that make patient care harder for physicians are:

- Data entry is time consuming, inefficient, and difficult to navigate.
- Multiple user interfaces do not match the clinical workflow, resulting in non-intuitive order entry.
- Finding and entering information in the EHR interferes with the doctor-patient relationship, interposing a computer between doctor and patient.
- Health information exchange and interoperability are inefficient and insufficient.
- Constant automatic alerts are both distracting and result in information overload.
- The EHR’s meaningful use criteria and the most important elements of patient care do not match.
- The high cost of acquiring the EHR and the cost of ongoing maintenance and support are financial risks with no reimbursement.
- EHRs require physicians to perform clerical tasks that decrease their clinical care and efficiency.
- Template-based notes degrade the quality of clinical documentation and care.

RAND’s conclusion: “Better EHR usability should be an
industry priority and a precondition for EHR certification.\textsuperscript{6}

The Institute of Medicine (IOM) in its 2011 report, Health IT and Patient Safety: Building Safer Systems for Better Care,\textsuperscript{7} concluded that poorly designed EHRs had introduced new safety risks, including dosing errors, failures to detect life-threatening illnesses, delayed treatments, and data losses, some of which had led to serious injuries or deaths. The IOM recommended adopting “quality management principles that included systems that are user-friendly, mandatory reporting of adverse events, and creating an agency to report system safety problems and make recommendations for change.”\textsuperscript{7} However, there is still no requirement to report safety or other problems.

EHR vendors have resisted listing or reporting requirements, citing contractual clauses that prevent sharing. This has prevented widespread awareness about safety problems or dangerous conditions specific to certain EHRs.

It is not just that the current technologies are new and take time to implement and learn to use. That is an impediment, but we are beyond that phase. Our continuing negative experiences and adverse effects on our care of patients are now well documented.

The Joint Commission in a 2008 report, Safely Implementing Health Information and Converging Technologies,\textsuperscript{8} specified strategies to prevent patient harm related to EHRs:

- Have an interdisciplinary team examine workflow processes for risks and inefficiencies and resolve these issues prior to implementation.
- Continuously monitor for problems during introduction of new technology and address any issues as quickly as possible.
- Develop a graduated system of safety alerts in the new technology that helps clinicians determine urgency and relevancy, and decide which alerts need to be hard stops.
- Require departmental or pharmacy review and sign off on computerized physician drug-order entries that are outside the usual parameters.
- Continually monitor and report errors and near misses or close calls caused by technology through manual or automated surveillance techniques.
- Conduct a root-cause analysis following system errors; consider reporting significant issues to well-recognized external reporting systems.\textsuperscript{9}

Implementation and use of EHRs adversely affect most of the practice of medicine, including medical education, clinical reasoning, physical examination, and the doctor-patient interactions of rapport, empathy, respect, compassion. Physicians are distressed, dismayed, and dissatisfied—an indication of how much the use of EHRs has undermined the doctor-patient relationship. EHRs have failed to make patient care better, more efficient, or more satisfying for the patient or the doctor; and they have not improved safety.

This should not be surprising, since the EHRs were designed by programmers, not physicians or patients. EHRs require physicians to perform computer tasks not directly relevant to the care of patients, instead of making it easier to do what they need to do. The technology should be “invisible,” helping instead of hindering the physician.

EHRs appear to have been designed with the initial and ongoing erroneous assumption that all patients are “average,” and that their complaints, symptoms, illnesses, and suffering can fit into fixed templates, boxes, and algorithms. But individual patients are unique, and the best care for a patient cannot fit a multifaceted patient into a one-size-fits-all box. We must address this problem—and soon.

It is dismaying to recognize that current EHRs cannot be easily used in a situation like a clinical visit, something for which they were putatively designed. Two current approaches to solving this problem are both flawed in that they require additional funding of uncompensated time.

In one, the physician spends her entire time with the patient in a traditional clinical interaction, after which she dictates or types the information into the EHR on uncompensated time.

In another, each physician is assigned a medical scribe, a trained but unlicensed helper who enters information into the EHR or chart at the direction of the physician. The scribe’s responsibility is to observe the physician-patient interaction and reliably record the history, physical exam, conversation, diagnoses, assessment, plan, and orders. The physician later reviews and edits the record. Scribes also respond to messages to physicians, locate information for the physician to review, and research information and questions for the physician. Scribe salaries are generally not billable.

Other possibilities include the use of voice recognition and recording software or smart pens, which physicians may use during the clinical visit. Such transcripts need careful review and editing, again uncompensated.

All these are mere band-aids, designed as workarounds to the primary problem, which is that EHRs are badly designed for the job they are meant to do.

If we were designing an EHR from scratch, how would we start? First: involve physicians and the other members of the health care team, the people who use EHRs. Begin with a comprehensive, chronological task analysis, mapping and timing every step of a wide variety of clinical encounters. Then work with engineers, programmers, and—especially—end users to establish human interface guidelines for the EHR that will assure that using it is logical, efficient, and user friendly.

The IOM report pointed out that:

Creating safer systems begins with user centered design principles and includes adequate testing and quality assurance assessments conducted in actual or simulated clinical environments, or both. Designers and users of health IT should work together to develop, implement, optimize,
and maintain health IT products. For most end users, an effective health IT product will provide easy retrieval of accurate, timely, and reliable data; incorporate simple and intuitive data displays; and yield evidence at the point of care to inform decisions. Among other improvements, the product will

- enhance workflow, perhaps by automating mundane tasks or streamlining work, without increasing physical or cognitive workloads;
- allow easy transfer of information to and from other organizations and providers; and
- cause no unanticipated downtime.9

Today’s EHRs impede workflow, are a roadblock to easy information transfer, and can cause significant downtime because of the need for specialized technical assistance. The EHR has unintentionally become more important than the patient.

Current EHRs are based on proprietary software whose source code is a closely guarded secret, owned by companies who place major restrictions on their use or modification, and are extremely expensive to license. What if those most interested in improving health and the care of the patient could collaboratively develop a robust, easily usable, accessible, searchable, and affordable EHR for the physician and patient? One solution to our current problem could be the development of open source EHR software that would be widely available and could continuously be developed and improved. Such a solution requires the partnership of physicians and other health care workers with engineers and programmers, and a passionate commitment to improving the sad state of EHR.

The recent report from the American Medical Informatics Association, Report of the AMIA EHR 2020 Task Force on the Status and Future Direction of EHRs, makes the following recommendations for EHRs:

- Simplify and speed documentation—decrease data entry burden for the clinician; separate data entry from data reporting; enable learning and research at the point of care.
- Refocus regulation—improve data exchange and interoperability; reduce re-entering data; prioritizing patient outcomes over new functional measures.
- Vendors should use public standards-based application programming interfaces and data standards that enable EHRs to become openly available to innovators, physicians, researchers and patient to improve the systems.
- Promote the integrations of EHRs into the full social context of care.
- Improve the designs of interfaces so that they support and build upon how people think and work.

It is possible, of course, that development of an EHR that improves the clinical interaction cannot be done. The interaction of physician and patient, the primary reason for a clinical visit, is distinct in both its objective and its importance from the interaction of physician and computer. Perhaps the best we can expect is an EHR that does not degrade the experience by imposing itself between the doctor and the patient with its repeated requests for attention.

The medical profession is at a critical crossroad, and EHR is an urgent issue requiring rapid and effective action. The EHR is here to stay, but must and can be developed to serve the doctor and the patient.

Physician leadership and involvement are critical. The doctor-patient relationship and care of the patient, not the computer, are primary. But the effective use of computers and EHRs has the potential to serve medicine and the care of the patient with major improvements.

References

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By winter she already leans forward in her stroller to watch staccato hops of coal black Labradors in mid-yelp behind their invisible fence.

Spring puddles receive two-foot splish-splashes, intrepid princess waving a magic wand; a wayward twig that casts out my troubles for the day.

The summer heat skids bike wheels into softened asphalt as she spins out in her tomboyishness, climbs a tree to see her future; I watch mine pass in present.

There is too much hand-holding this fall from one cul-du-sac to another; gigglers too giggly to know dad watches the death of his season, years that are no more.

Aaron McGuffin, MD

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For a year, I can’t read the file. Twice, I open it. But my fingers won’t turn the pages heavy with grief. Why must I read the words, anyway? Because my father loved animals: turtles, Dalmatians, birds. Because he held me in the crook of his arm when I was born. Because I am of his body and he is of mine. Because he was lost to me. Maybe in these records I’ll find him. The third time, I open the file.

II. Riverside County Regional Medical Center, February 17, 2000
Clinic Note:
A 56-year-old male with psychiatric features. The doctors don’t write that he was a father of a son, Jeremy, and a daughter, Dara. Psychiatry wants dementia work up. Patient refuses to answer any questions, stating “information is in the chart” and nothing more. Before my father was a patient, he was a psychologist, who tried to heal people. He could not heal himself. Medications: Neurontin 400 mg, Paxil 30 mg, Megace 400 mg, Colace 100 q day. He could not heal our grief. Patient is unkempt. Once, he carried a black plastic comb for his beard. Sitting with hands crossed, no eye contact. Non-communicative. Once, he read hundreds of books: Shakespeare, Winnicott, Freud. Combative. Once, he saved a moth from the windshield of our car.

III. Los Alamitos Medical Center, February 26, 2000
Internal Medicine Consultation:
Patient does not smoke or use alcohol. My father smoked a pipe twice a year and drank one glass of wine a day for his heart. The chief complaint: the patient hit another resident very hard in the face. This doctor doesn’t know the patient.
The patient sat in a rocking chair with his month-old daughter on his lap. He is resistant to care and verbally abusive, using obscene language. My father didn’t let us swear, though he liked to say goddammit. On the day of admission, the patient assaulted another resident in the room. He began getting angry over small things, like leaving his reading glasses at an apple orchard. He will not say a single word. He began to believe he was being pursued by creditors, landlords, my mother. The patient won’t take a deep breath. Take a deep breath, Dad. Signed, A.L.N., MD

IV. Los Alamitos Medical Center, March 1, 2000
Neurologic Consultation:
The patient is a 56-year-old Caucasian man with a long history of psychiatric disorder. Per chart, he was admitted because he was chasing and hitting people and this has been a recurrent behavioral problem for him. My father used to play a game where he chased us through the house, roaring like a lion. Seems there is a component of depression in the patient’s behavior. Then he stopped playing games. He moved his clothes and books into a room of our house. Per chart… patient has an education of 11th grade. My father had a PhD. Patient persists to have his eyes closed. Surely to escape. I would have wanted to escape. Impressions and recommendations: patient can benefit from dopamine antagonists i.e. Haldol as well as SSRIs for movement disorder as well as his dysthymic/depressive mood. My father never drank more than one glass of wine a day for his heart.

V. Los Alamitos Medical Center, March 16, 2000
Discharge Summary:
Date of admission: 2/26/00
Date of discharge: 3/16/00
Mr. Barnat is a 56-year-old white male. Never do they write that he was a father, who said prayers on Friday nights and learned Spanish. Reason for admission: assaultiveness, refusal to take medications and being resistant to care. Mainly, I was ashamed of him. Patient was uncooperative and remained so throughout his hospitalization. But no longer. There was an indication that he has had many prior hospitalizations. This patient was my father. Mental status examination: at the time of admission, the patient seemed to be about his stated age. He was young, not yet 60. He was unkempt. He couldn't help that he stopped caring for himself. Attempts were made to draw the patient out of isolation, this was partially successful. If I could have, I'd have sat with him, read Whitman, Dickinson, Frost. Mood was mildly depressed. Gait was steady. Insight and judgment were fair. I'd have asked him a question. What would he have answered?

VI. County of Orange Certificate of Death, February 4, 2003
I didn't know the last time I spoke to my father would be the last time I spoke to my father. What I have is a certificate: PhD Psychology, Divorced Pneumonia, Dementia Anaheim General Hospital State of California What I have are pages of who he became, reminding me who he was. Place of final disposition: At sea off the coast of Orange County. Here.

Dara Barnat, PhD

Dr. Barnat’s poetry, translations, and essays have appeared in The Cortland Review, Poet Lore, Ha’aretz, Lilith, Los Angeles Review of Books, Walt Whitman Quarterly Review, and elsewhere. Her collection of poems, In the Absence, is being published by WordTech/Turning Point in 2016. She holds a PhD from Tel Aviv University and currently teaches at York College and Queens College in New York. More information may be found on her web site: darabarnat.com. Her e-mail address is databarnat@gmail.com. Photograph courtesy of the author.
Illustrations by Jim M'Guinness
I gave my mother a record album for her Christmas gift when I was in the ninth grade. Having previously watched her swoon when Nat King Cole’s “That Sunday, That Summer” played on the radio, I had high expectations for the joy that my thoughtful offering would generate. As she slid off the bright red ribbon and peeled back the festive wrapping paper, I was rewarded with a tender hug and a kiss on the cheek before she turned to the stereo. Watching in anticipation, I swallowed the lump in my throat—the palpable expression that it is truly more blessed to give than to receive.

What happened next has been lodged in my hippocampus for the last fifty years. She started to cry while listening to her favorite song. It didn’t seem like such a good gift after all!

“What’s wrong, Mom? Why are you crying?” I asked. Forcing a smile she responded, “Nothing is wrong dear. These are happy tears.” She went on to say that it was a beautiful summer Sunday afternoon when my father asked for her hand in marriage and the song “just brought back all those good memories.”

Attempts to understand the lacrimal physiology of happy tears lay dormant until I caught myself shedding them the day I accompanied my daughter on her college tours. I was following her as she walked with a group of applicants through the beautiful tree-lined sidewalks of a campus on a crisp fall morning. The well-maintained old red brick buildings trimmed with white shutters and the early fall colors triggered flashbacks to my own wonderful college years on a similarly beautiful campus. I found myself becoming tearful, conscious only of how special it was that I could be in a position to offer our daughter her next life experience in such lovely surroundings. Yep, these were definitely happy tears.

During a conversation with my older brother the next month, I mentioned that I had choked up with such pleasant memories related to my daughter’s impending college experience. Ken is three years my senior and at the time had recently been through similar strolls in life raising his two daughters. He responded, “Don, you might have been able to recall happy memories that day, but those weren’t your only memories, and those definitely weren’t happy tears.” I remember that his conclusions annoyed me and that I openly rejected them, countering that he couldn’t possibly know what I was thinking. Our conversation ended with our agreeing to disagree, but he had planted a seed. On the one hand I found it bothersome that he would cast an undesired shadow over the trip with my daughter and on the other hand he encouraged me to look in the mirror and ask the very reasonable question, why would a happy man be tearful? Before long I was exploring the ambivalence that comes with letting your only daughter go off to college. My field of vision broadened, so I could see the more somber side of having your daughter leave home. In the end, Ken had given me a gift! By the time my wife and I moved our daughter into a college dorm the next year, I was able to share the full range of emotions with my departing “little” girl.

My mother probably didn’t have a clue why she was crying on Christmas morning and I don’t think her explanation was
Happy tears

meant to spare me sadness or redeem my gift. She was just doing the best she could. “That Sunday, That Summer” took her back to wonderful mountaintop experiences in her courtship that had only more recently become juxtaposed to feelings that were anything but joyful. It would be two more years before we both would understand how her alcohol dependence and strained marriage could generate tears in response to her favorite song.

Mrs. Downing came to see me again last week. She is a sturdy seventy-four-year-old woman with shoulder-length straight gray hair who is working through the challenges of longstanding diabetes complicated by severe peripheral vascular disease. Recovering from multiple toe amputations earlier this year, she travels through our clinic hallways in a wheelchair. Linda has always risen to meet the challenge, whether urosepsis in the ICU or being in and out of the operating room for multiple vascular procedures. Neither hypotension nor post-operative pain has ever completely extinguished her smile, and her deep crow’s feet stand as evidence. Her early adulthood years trained her for this. She grew up in southwest Virginia and was married at the age of eighteen to a “man who liked other women.” Twelve years later she divorced him, launching her into single parent hood with two sons and two daughters to support. Linda worked long, hot, and hard hours in the local textile factory, while maintaining her other full-time job at home, never to marry again.

This day, Linda’s wheelchair is parked directly in front of me, and Lisa and Theresa, her two attentive daughters who always accompany her, are seated several feet to her left on the exam room couch. As Linda reviews her current glucose numbers and highlights her podiatric progress I notice that Lisa and Theresa are both busy taking notes. At one point, Theresa hands her mother the diabetic log to show her that some of sugar levels are actually a little bit better than she is reporting to me. “Thank you, dear,” Linda adds with her indelible smile.

The three of us help Linda get up on the exam table, and after the exam the trio guides her back into the wheelchair. Lisa carefully re-positions one of Linda’s shoes that had slipped off. As I summarize my findings and outline our next steps together Theresa leans forward, busily taking down each of my instructions. Lisa seems just as deeply engaged, but she settles back in her seat, just smiling at her mom. After my concluding remarks, both daughters pose questions. “When should we bring Mama back? Does her insulin dose need any adjustment?” they ask.

Seeking eye contact with all three, my main focus is on Linda. I tell them how pleased I am that things are going well. My pleasure, however, goes far beyond what I see in Linda’s healed foot wounds and controlled sugars. I am deeply moved by the depth, detail, and precision of her daughters’ caring. If love is a verb and not a noun, they are the operational definition! Wanting to express my feelings, I begin, “Linda, as we finish up today, I want to say what a privilege it is for me to work with a family like yours. It is so heartwarming to see children caring so much for their mother!” Turning my attention to Lisa and Theresa I conclude, “It is an honor for me to help you care for your Mom.”

The room quickly goes silent. All eye contact is lost, and it only takes a moment for both daughters to reach for the tissue on my desk. With subliminal flashbacks of a ninth grade Christmas morning and an older brother’s conclusions about my college tours, I am paralyzed with indecision. A series of rapid-fire ideas flooded my head: Should I ask them what they are thinking? Would that be a violation of their privacy? Should I apologize for making them cry? Would it be right to finish the visit like this? I had just given them a ringing endorsement of how wonderful they are, and it all ended with happy tears?

Theresa is the first to break that silence, closing her notebook and rising to her feet with a half-smile, she says, “That was a really sweet thing to say. Thank you very much, Dr. Steinweg.” I smile in return as I watch her begin to unlock the wheels of Linda’s wheelchair. Just plain old happy tears, I thought.

Lisa remains seated as she collects herself. Wiping her tears and fumbling through her belongings, she adds, “Thank you for saying that. I guess this is the first time I have ever thought about all we have been doing for Mama. We are just doing what seems right. After all, Mama was the one that did so much for us after Daddy left.”

Linda is looking at her girls with a new wrinkle I had not seen before in her courageous smile. She adds, “I probably don’t tell you often enough how thankful I am for you both.” Theresa sits back down and reaches over to hold her mother’s hand. It is a sweet, tender moment.

Happy tears. Often more than meets the eye.

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2015 Medical Student Service Leadership Project Awards

Alpha Omega Alpha is committed to preparing future leaders in medicine and health care. Leadership is about making a positive difference, and is learned through education, observation, and experience, and working with leader mentors. Service leadership may develop an excellent opportunity for students to develop as servant leaders. The most effective leaders are well grounded in and committed to positive professional values.

ΩΩΑ developed this award to support leadership development for medical students through mentoring, observation, and service learning.

The award provides $5000 for the first year, $3000 for the second year, $1000 for the third year. Second and third year funding are contingent on acceptable interim reports.

The winners of this year’s award are:

East Tennessee State University James H. Quillen College of Medicine—Emerging Leaders In Medicine

Left to right: Jeremiah Gaddy (Class of 2015), James “Jay” Johnston (Class of 2017, QCOM student leader), Eric Lederer (Class of 2015), and ΩΩΑ councilor Reid Blackwelder, MD.

Student team leader Eric Lederer (ΩΩΑ, East Tennessee State University, 2014); student team members Jeremiah Gaddy (ΩΩΑ, East Tennessee State University, 2014), Cornelius Powell, and Jay Johnston; mentor leader Theresa Lura, MD (ΩΩΑ, East Tennessee State University, 1997, Alumnus); and mentor Kenneth Olive, MD (ΩΩΑ, East Tennessee State University, 1992, Faculty).

U.S. Air Force General W. L. Creech once stated, “The first duty of a leader is to create more leaders.” It is in this spirit that East Tennessee State University’s (ETSU) Emerging Leaders in Medicine (ELM) program was founded. This four-year longitudinal course will provide guidance and leadership education for medical students interested in developing and improving their leadership ability. The program is guided by the notion that leadership is not necessarily an innate trait, but rather something that can and should be learned.

The program is broken into the following seven components:

1. Community service
2. Simulation lab scenarios focused on leadership and teamwork
3. Multidisciplinary education involving interaction with students and professors from the ETSU Colleges of Pharmacy, Nursing, Public Health, and Psychology
4. Online leadership modules emphasizing leadership in medicine
5. Leadership lunches with guest speakers
6. Leadership journal club
7. Fourth-year elective in leadership development

The first three years will consist of both didactic and experiential learning. The didactic sessions will include online leadership modules, guest lecturers, and journal club participation, which will cover topics ranging from team member and patient communication to character traits common to successful leaders. The information and skills learned in these didactic sessions will be reinforced through experiential learning involving community service, simulation lab scenarios, multidisciplinary collaboration, and an end-of-year leadership retreat. This will create opportunities for students to practice and hone strong leadership techniques and characteristics.

Fourth-year medical students will solidify the skills and knowledge they have acquired over their medical training by taking a fourth-year elective in Leadership Development that will provide mentorship and oversight for junior members.

All activities will be overseen by ΩΩΑ medical students, ΩΩΑ faculty, and the ETSU student interest group Developing Leadership in Future Physicians.

Medical College of Georgia at Georgia Regents University—Medical Ethics: Pathway to Leadership in Medicine

Student leader Matthew Jones (ΩΩΑ, Medical College of Georgia, 2014); student members Brice Hwang, Brian Sullivan, Lacey Williams, Connor Sweetnam, Travis Welsh, and Blake Vander Wood; mentor leader William Strong, MD (ΩΩΑ, Medical College of Georgia, 1978, Faculty); and mentor Greer Falls, MD (ΩΩΑ, Medical College of Georgia, 1995, Faculty).

Physicians face ethical challenges throughout all stages of their training and careers. Development of a mature understanding of medical ethics will be critical for physicians to lead in those tough clinical situations. Through the Medical Ethics: Pathway to Leadership in Medicine (PLM) at Georgia Regents University (GRU), students will gain ethical reasoning and leadership skills, and thereby enrich the GRU community through greater student engagement in medical ethics. Most importantly, the program will produce leaders with the ethical
foundation to be optimally prepared to handle ethical challenges in their future practice.

**Pathway to Leadership in Medicine Curriculum**—The PLM will provide medical students an interactive study of medical ethics and will promote leadership development during its four-year track. The program’s goals are to develop leaders in medicine through experiential learning of medical ethics, create and implement an interactive ethics curriculum, and strengthen student participation in ethics processes at GRU. PLM will be a four-year elective that includes interactive seminars and a Student Ethics Committee (SEC) during the first two years of medical school, and a student-driven project focused on integrating leadership skills and knowledge of ethics during the third and fourth years.

**Student Ethics Committee**—Beginning in the second year of the program, students will become members of the Student Ethics Committee. The SEC will serve to engage students in practical applications of medical ethics, and to provide a professional service to the GRU medical community. Members of the SEC will shadow GRU medical ethics committee members during their hospital rounds, and make policy recommendations to improve hospital practices and ethical education for all health profession students.

**Mentorship**—In addition to the medical ethics curriculum and Student Ethics Committee, the program will emphasize mentorship to develop leadership skills. Student-to-student mentorship will pair new students with older peers to enable approachable conversations about the challenges of their classes and about medical ethics. Faculty-to-student mentorship will facilitate a more formal advising relationship for the students as they develop as student leaders over the course of their education.

Upon successful completion of each of the program components, students will receive a distinction in Leadership in Ethics. The program will equip graduating PLM participants with years of leadership experience, a fundamental knowledge of medical ethics, and real-world exposure to ethical dilemmas.

**University of California, Davis, School of Medicine—Inter-Professional Community Health Leaders Program**

Student leaders Philip Summers (ΩΩA, University of California, Davis, 2013) and Trevor Cline; student members Jessica Rhodes (ΩΩA, University of California, Davis, 2015), Angela Rodgers, Leona Shum, Crister Brady, Jeremy Johnson, Melody Tran, Marielle Bolano, Kara Brodie, Karla Martinez-Tavera, and Ian Kim; and mentor leader Thomas Nesbitt MD, MPH (University of California, Davis, 1991, Alumnus).

Meeting the needs of a community, especially those that are underserved, requires not only capable, dedicated clinicians, but also competent systemic leadership. To address this need, we are developing a student-led, longitudinal, health professional educational track that will provide student activists with the skills to become agents of change for community health systems.

The Inter-Professional Community Health Leaders Program at UC Davis will be a two-year program combining a skill-based leadership course with a community-based service learning project. Our mission is to empower program participants with the insights and practical skills necessary to become leaders who can bring forth systemic, community-based health care solutions for underserved communities in California.

The program will integrate with the core curricula of the Schools of Medicine and Nursing at UC Davis, while establishing sustainable relationships and long-term educational and service opportunities with a variety of community partner organizations. The program will be managed by a group of twelve students, who will be responsible for establishing the program, solidifying relationships with community partners and faculty mentors, developing the didactic curriculum, and creating positions in community organizations for student placement. ΩΩA faculty and senior students will be recruited to assist in curriculum development and as community project mentors to provide formative feedback on proposals and progress reports.

We plan to employ the Community Based Participatory Approach to Curriculum Development to include local expertise at every level of the program, ensure equal and mutual sharing of knowledge and power, and empower the community to guide the development of its future physician and nurse leaders. The program will include:

- **Didactics:** Six months of curriculum developed by students, faculty, and community leaders, including approximately twenty interactive, discussion-based lectures, focused on developing leadership skills and perspectives essential to systemic improvements in community health. Topics will include an
introduction to local communities, health system, and social resources, and in-depth examinations of specific target populations, their unique health issues, and the organizations that address their needs.

• Community Placement: Participants will immerse themselves in a two-year internship with a local community-based organization. Opportunities will range from experience in health policy, health care and non-profit administration, health law, community organizing and advocacy, preventive medicine, community health education, and will include addressing the needs of specific communities including mental health, addiction, women’s health, pediatrics/adolescent health, elder health, and undocumented residents.

• Presentations: Participants will submit a final report summarizing their project and give an annual presentation for UC Davis faculty, students, community members, and the AΩA chapter.

We will spend the 2015 through 2016 fiscal year developing the program to solidify our three tiered leadership structure between student leaders, faculty mentors, and community leaders, and create our curriculum and community internships. We will enroll our first pilot cohort of five to ten medical and nursing students in 2016 for the 2016 through 2017 fiscal year. Based on the feedback we receive from our pilot cohort of 2016/2017, we hope to improve and perhaps even expand the program as it is institutionalized and given permanent funding.

Louisiana State University School of Medicine in New Orleans—LSUHSC InterProfessional Student Alliance (IPSA)

Student leader Katelyn Fusilier (AΩA, Louisiana State University School of Medicine in New Orleans, 2014); student members Katherine Howe, Jacob Quinton, Temple Barkate (AΩA, Louisiana State University School of Medicine in New Orleans, 2015), Morgan Walker (AΩA, Louisiana State University School of Medicine in New Orleans, 2015), Joann Tran, and Brittani Dyess; mentor leader Robin English, MD (AΩA, Louisiana State University School of Medicine in New Orleans, 1999, Resident); mentors Demetrius Porche, DNS, PhD, and Sandra Andrieu, PhD.

Louisiana State University Health Sciences Center in New Orleans (LSUHSC-NO) recognizes that interprofessional training and collaboration are necessary to develop future health care leaders. In response to local health disparities, LSUHSC-NO students developed three community service projects that address some of the city’s most challenging public health issues: child obesity and malnutrition, STIs and youth pregnancy, and medical management of diabetes. Each project is run and staffed by student volunteers from various health professional programs, including LSUHSC-NO Schools of Medicine, Nursing, Allied Health, Public Health, and Dentistry. While each project was successfully implemented on its own, there was no overarching organization to unite the existing service projects, foster the development of new projects, or develop effective student leaders. As such, the InterProfessional Student Alliance (IPSA) was formed to meet those needs. The mission of IPSA is to address health disparities in the greater New Orleans area through interprofessional teams of LSUHSC-NO students serving local underserved communities. The purpose of IPSA is to function as a student-run initiative “incubator,” providing interprofessional leadership development and faculty support to service projects. This mission and purpose drive us toward the following objectives:

1. Increase the number of health-related services to underserved communities in the greater New Orleans area.
2. Improve leadership skills among student leaders at LSUHSC-NO.
3. Increase the number of opportunities for LSUHSC-NO students to work in interprofessional teams.
4. Increase the number of opportunities for students in different health professions schools at LSUHSC-NO to communicate with one another and coordinate service projects.

Medical students in IPSA develop as leaders while concurrently collaborating with other health professions students throughout their four years of study. More specifically, IPSA members will work with interprofessional community health and health care delivery service projects, develop community health and health care delivery service projects of their own, attend leadership development workshops (outlined below), and serve as mentors to the IPSA members who come behind them.

Over the next three years, IPSA will offer eight workshops to all LSUHSC students with a focus on critical concepts of service leadership, management, and community advocacy skills. These workshops include:

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Each workshop will start by introducing the topic through a case study highlighting the role of health disparities in New Orleans. Students will then participate in small group activities such as discussion sessions, role plays, and/or individual mentorship to allow students to apply what they’ve learned to their particular service project. The leadership skills expounded and practiced during the workshops will be put to immediate use in the IPSA-approved service projects. In this way, students will become comfortable exercising these skills before they arrive to the workforce.

The AΩA Medical Student Service Leadership Award allows IPSA to increase its resources to facilitate interprofessional education in two ways: 1) provide students with opportunities to be involved with additional community service projects, and 2) implement a series of leadership development workshops that teach leadership skills applicable to team-based collaborative practice. The result will be higher-quality leaders and service projects at LSUHSC-NO, and better interprofessional health care teams, patient outcomes, and community health in Louisiana’s future.

**Mayo Medical School—Mayo Medical School Leadership Development through Community-Generated Action Plans**

Student leader Jessica Saw; student members Alexander Ginsburg, Leah Schmelkin, and Adeel Zuhair; and mentor leader and AΩA Association Chair Judith Kaur, MD (AΩA, University of Colorado, 1979).

Mayo Medical School (MMS) Leadership Development through Community-Generated Action Plans (C-GAPs) is a student-led program that will train medical students to facilitate community-engaged projects with the goal of improving health.

The program will prepare medical students for community engagement through a two-part learning process involving:

1. A didactic classroom curriculum to teach students theories and methods of community engagement.

2. An experiential curriculum in which students will work with an underserved community to develop and implement a plan of action, which we will refer to as a Community-Generated Action Plan (C-GAP).

As such, the project will allow students to transfer leadership skills from the classroom to underserved communities. The initial hands-on project will use the topic of food and nutrition as a vehicle for developing a community-engaged project with low-income residents of Rochester, Minnesota. Subsequent projects will be developed each year in consultation with Rochester community members.

**Didactic Curriculum: Leadership Education Program in Medical School**

To train medical students in the techniques of community-engaged project development, MMS Leadership Development through C-GAPs will develop a didactic curriculum for first-year medical students. The curriculum will introduce students to the importance of community engagement, present examples of successful participatory processes, and teach strategies for engagement. The participatory techniques that students will be taught include, but are not limited to: town hall meetings, public achievement, focus groups, design charrettes, qualitative interviews, survey design, and health commons model.

The didactic curriculum will also incorporate speakers who have successfully facilitated community-engaged projects and can speak to their own work as well as to the benefits and challenges they see in participating in community-engaged endeavors. In addition, panels of Rochester community members will provide medical students with a better understanding of community perspectives on public engagement.
Experiential Curriculum: Community Service Project

Following the didactic curriculum there will be an experiential curriculum that transfers learned principles to a community service project focused on healthy living. For the first year, the project will serve as hands-on training for students to develop and implement a C-GAP to address barriers to healthy eating facing low-income residents of Rochester.

There are two phases to the community project. The first phase will be a community-generated needs analysis, utilizing public engagement techniques learned during didactic sessions. Students will lead the community in a multi-stage public participation process to delineate barriers to healthy eating, solicit community-generated solutions, and document these findings into a formalized C-GAP.

The second phase will be implementation of the C-GAP with the community. While the specific interventions cannot be identified before the community-based process occurs, issues of cost, proximity to grocers, time to prepare meals, and cooking skills are among the barriers to healthy eating that other communities have addressed.

Uniformed Services University of the Health Sciences
F. Edward Hébert School of Medicine—Bethesda Cares H.O.M.E. Team Project

Student leader Mark Prats (AΩΑ, Uniformed Services University, 2014); student members Tiffany Chang, Holly Berkleys, and Kristin Wertin; and mentor leader Mark Stephens, MD (AΩΑ, Case Western Reserve University, 1993).

For the past three years, students at the Uniformed Services University (USU) have partnered with local organization Bethesda Cares to improve the lives of the hundreds of homeless individuals in Montgomery County. The relationship initially involved students conducting health vulnerability surveys on a biannual basis. Since then, the relationship has grown, students now counsel clients at the Bethesda Cares office, and conduct home visits to check on the health of medically vulnerable individuals recently placed in permanent housing. Moving forward, the H.O.M.E. Team hopes to expand student involvement in the medical care of those who remain homeless. The funds from the AΩΑ Medical Student Service Leadership Award will be used to acquire medical supplies and medications to treat acute and chronic ailments as students and their physician mentors take their medical skills to homeless camps in the region. In addition to these direct medical care experiences, students will participate in a student developed leadership curriculum. This curriculum will complement the strong leadership curriculum already established at USU, with the aim of cultivating skills necessary to inspire others in our communities to take action in addressing the homelessness issue.

As the nation’s Leadership Academy for Military Physicians, USU provides its students with an extensive leadership curriculum. Throughout their four years at USU, students are pushed to expand their skills in communication, team building, and problem solving. The leadership curriculum culminates in a simulated deployment during which students, in teams of roughly twenty, establish and run a forward field hospital for seventy-two continuous hours. During the grueling three-day experience, students rotate through various leadership positions each with its own set of task to be performed while the overarching mission to provide medical care to incoming casualties is completed. While in these leadership positions, students are observed and graded by designated faculty as well as by their peers, providing the students with feedback regarding their strengths and areas for improvement as leaders. Every four-hour rotation ends with a student-run group debriefing session, allowing students to discuss strategies to improve operations within the unit.

The student leaders of the Bethesda Cares H.O.M.E. Team Project have developed eleven activities focused on pushing student participants to identify and cultivate the skills needed to inspire action. These activities will take place on a monthly basis throughout the school year, using various media forms to stimulate discussion amongst the students. Skills gained
during these sessions will build on each other, with early activities focused on attributes shared by leaders who have made significant impacts on the students’ lives. Later sessions will focus on the power of effective message communication by looking at techniques used by today’s most powerful brands and grassroots organizations. As students move through the year, the student leadership and staff of Bethesda Cares will identify ways for students to apply their new skills to further the mission of Bethesda Cares.

**Ponce School of Medicine and Health Sciences—Ponce School of Medicine Leadership Conference**

Student leader Elisa Quiroz; student members Jennifer Claudio (AΩA, Ponce School of Medicine, 2014), Maria Eugenia Mulcro, and Angie Paz; mentor leader Miguel Magraner, MD (AΩA, Ponce School of Medicine, 1999, Alumnus); and mentor Pedro Castaing Lespier, MD.

As we are well into the twenty-first century, the Puerto Rican community continues to suffer from a relentless socioeconomic crisis. The statistics are horrific, while programs geared toward educating the island’s low-income residents are nearly unheard of. The dire economic situation in Puerto Rico has made philanthropy a rare entity. In addition, universities struggle to provide students with resources that even a community college on the mainland is able to offer. Lack of education is a recurring theme that has led to violence, drug abuse, and extreme poverty. As is the case in many inner cities on the mainland, the poorest of the poor have become marginalized with little or no access to many services.

In 1950, a young nun founded a small clinic in one of the poorest neighborhoods in southern Puerto Rico in order to provide medical care and preventive services to the most marginalized citizens. Her work continued throughout the latter part of the century—and continues long after her death in August of 2000. With over forty initiatives, the Sister Isolina Ferré Centers (CSIF) provide a wide range of services, including alternative education and tutoring, among many others. Sister Isolina Ferré was truly a visionary and was able to make significant strides in the advancement of the Puerto Rican community, but the island is still in dire need of community service initiatives.

Through leadership training and community service, this project will provide the skills and inspiration to young minority physicians to join the effort of ending racial disparities, a dire issue throughout the United States. Being role models for young people will help the medical students practice their leadership skills in an environment that is in great need of such an intervention. The project is divided into two components, both of which are geared toward developing leadership and professionalism in minority youth.

**Ponce Health Sciences University Global Leadership Conference**—Through a series of activities and workshops, participating students will develop leadership skills and identify ways in which they can apply these skills as professionals. The local Alpha Omega Alpha chapter will lead an activity in which participants compete in various areas of professional development in a fast-paced challenge. An emotional intelligence workshop will be offered through Ponce Health Sciences University’s Psychiatry Department, and a guest motivational speaker will give a talk on public speaking and leadership. The director of the local Sister Isolina Center will speak about the history of the centers and also give an orientation for the youth project. Students with an interest in global health and minority issues will be recruited from around the country to participate alongside to local students.

**Youth in Action Program**—The idea behind the community project is to provide the young people in local impoverished neighborhoods with the skills and confidence to become leaders in their own communities. Rather than developing interventions that we consider right for their neighborhoods, we will motivate them to take action and assist them in carrying out their own ideas. In collaboration with the local Sister Isolina Ferré Center, medical students will lead groups of young adults in the design of small projects that fulfill the needs that they identify within their community. A partnership agreement has been developed with the local Sister Isolina Ferré Center, and participants’ work will later be given credit toward their high-school equivalency.
The book review editors request that books for potential review be approved by the editors before the reviews are written. Reader interest and space are always considerations in this section and unsolicited reviews may be rejected. Contact Dr. Bennahum at dbennahum@salud.unm.edu and Dr. Coulehan at john.coulehan@stonybrookmedicine.edu.

Fall from Grace: A Physician’s Retrospective on the Past Fifty Years of Medicine and the Impact of Social Change

J. Joseph Marr, MD
iUniverse, Bloomington, Indiana, 2015

Reviewed by Norman H. Edelman, MD (ΑΩΑ, New York University, 1961)

What do doctors really want? . . . It’s the autonomy, stupid.

D r. Marr’s monograph, Fall from Grace, is a passionate lament of the awful state he believes medicine has fallen into over the past half century. Certainly he is not alone. We all have colleagues, mostly senior, who decry our current state of affairs and advise their progeny to stay away from the profession. But what, exactly, is the problem? Physicians continue to earn among the top few percent of society. Our work hours are generally less than the expected, and we certainly remain a respected profession—and for the most part we still have the satisfaction of helping people in need. Dr. Marr thinks that the cause of the dysphoria is the destruction of the doctor-patient relationship, but he devoices almost no space to the patient experience. I think he is really lamenting the diminution of physicians’ autonomy. This, of course, is no small matter. Those who study professions point out that autonomy, both of the profession as an entity and of individuals in it, is the main goal of most organized professions, and that a high degree of autonomy is the hallmark of the most successful ones. Physicians have long succeeded in garnering substantial autonomy. Indeed, one can read the original Hippocratic Oath as a social contract to that end. First we point out that our legitimacy comes from the gods, not man. Then we say quite clearly that we intend to run our own show, carefully guarding the precious knowledge base, parsimoniously passing it on, and making our own rules of conduct. In return, we assure the public that we will do our best to heal them and refrain from unethical conduct.

The forces that Dr. Marr believes have led to the diminution of our autonomy (or as he would say, impairment of the doctor-patient relationship) are several. Most prominent is the profit motive. He blames for-profit providers and payers for getting between our patients and us. Also prominent on his list are technological advances such as the electronic medical record, the tort system, DRGs, RVUs, and independent nurse practitioners. Physicians are held harmless for their pursuit of high incomes, as he claims that their payments come to less than ten percent of the total cost of health care and therefore are not responsible for the high cost of the system.

There is much in this monograph that I take issue with. Let’s begin with facts. According to the federal government, physician costs accounted for seventeen percent of the total cost of health care in 2013. An analysis by health economists suggests that a substantial portion of the difference between health care costs in the United States and several of the wealthier European countries is due to relatively higher physician payments in the United States, most notably to specialists. The broad-based lambasting of for-profit entities seems a bit simplistic to me, as it implies that not-for-profits do not have similar concerns about efficacy, efficiency, and the bottom line, and thus they do not intrude in the individual practice of medicine. That’s not been my experience. In addition, with regard to providers, only eighteen percent of hospitals are for-profit, hardly a major force. The reality is that health care in the United States is an almost three trillion dollar enterprise, with federal and state taxes footing about half the bill. Physicians do not receive the bulk of the funds, but we do drive expenditures. Thus, our tax-averse society is unlikely to leave us to our own devices.

Dr. Marr’s treatment of non-physician clinicians highlights his concern about physicians’ loss of control. He liberally praises physician assistants, but is rather cool to nurse practitioners. The difference, of course, is that the PAs are happy to accept direct physician supervision, but NPs have sought to be independent practitioners in the delivery of primary care. Dr. Marr cites this as evidence of inferior care being provided to patients. But there is no evidence for this assertion. Many studies, including a controlled trial, have shown that NP and physician care are equivalent in outcomes and patient satisfaction with one exception: the NPs spend twenty-five percent more time with each patient.

When I was three-quarters through the monograph I was not feeling very enthusiastic about it. However, the last chapter substantially improved my opinion. In it, Dr. Marr makes three
important points. First, he accepts the fact that many of the forces changing medical practice are not peculiar to the profession, but manifestations of our changing society as a whole. One example is the explosion of technology, which when used in medical diagnosis tends to come between patient and doctor. Next, and more important, he validates the title of his work. Every definition of “fall from grace” I have found includes culpability of the fallen. Thus, he admits that the medical profession may have brought some of these changes upon itself. To me it’s more than some. Had U.S. physicians endorsed a single-payer system when physicians in most other wealthy countries were doing so, there would be no for-profit payers. If organized medicine had not supported a de facto freeze on the production of MDs for twenty-five years and the initiation of the still-operative freeze on federal support for GME, the market forces that caused proliferation of non-physician clinicians would have been substantially less strong.

Finally, and most importantly, Dr. Marr urges physicians, singly and through their organizations, to take action to regain the respect and confidence of the public which he sees as greatly diminished. He makes no specific suggestions—but I have one. It is time to say to our society that we value and accept the legitimacy of its input in the governance of our profession. One way to start would be to recognize that specialty mix and relative compensation between specialties is a valid public concern, and invite meaningful participation by representatives of the public in the bodies convened by our professional societies that play key roles in their determination: the Accreditation Council for Graduate Medical Education (ACGME) and the AMA/Specialty Society Relative Value Scale Update Committee (RUC).

My bottom line: I suggest you read this monograph. If you agree with Dr. Marr you will enjoy the passionate presentation of his views. If you disagree, his opinionated style will allow you to enjoy criticizing it. In either case, it is likely to be thought provoking and thus worth your while.

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Behold Our Moral Body: Psychiatry, Duns Scotus, and Neuroscience
Sally K. Severino, MD (AΩA, University of New Mexico, 1997)
Reviewed by Timothy Graham, PhD, FRHistSoc

This book seeks to bring together the insights of present-day science and medieval philosophy to explain the foundations of human moral behavior. The author is a retired academic psychiatrist who was the first female president of the American College of Psychoanalysts; she is also an associate of the Felician Sisters, affiliates of the Franciscan order within Roman Catholicism. The seven chapters of the book introduce key recent discoveries from behavioral science, psychiatry, and neurology, comparing these discoveries with concepts central to the moral philosophy of John Duns Scotus (ca. 1266–1308), a Franciscan priest who taught in the universities of Oxford and Paris before spending the final year of his life as an instructor in the Franciscan college at Cologne. Known in his own time as “the Subtle Doctor” and described by Victorian poet Gerard Manley Hopkins as “of reality the rarest-veined unraveller,” Duns Scotus made a critical contribution to the understanding of the nature of human moral choice, going significantly beyond the thinking of his great predecessor, Thomas Aquinas. The goal of Severino's book is to argue that contemporary science is showing us “how the human body facilitates the moral behavior that earlier religious foresights describe.”

Central to her thesis are scientific findings that, in combination, present a powerful case for the human body being “prewired” to act in a moral fashion. Behavioral science, for example, has developed Attachment Theory to explain the early social and emotional development of humans. Relationships growing from attachments configure the nervous system in ways that coordinate our moral nature, while the science also demonstrates that there is an underlying predisposition for children to awaken specific moral propensities at fixed points within their development (chapter 2). Since the mid-1990s, neuroscience has demonstrated the existence of mirror neurons, located in specific anatomical
areas of the brain, that enable us to perceive and imitate others’ feelings and behaviors. Von Economo neurons, which awaken after birth and reach their peak at age four, allow humans to perceive how another’s mind will work in a particular situation; they facilitate empathetic response and intersubjective relationships (chapter 3). Human desire may be either self-centered, intended to benefit the individual subject, or directed toward the larger good; in the first case, it is mediated by the older dorsal vagal system, which responds to life threat and is present also in reptiles, but in the latter case it is associated with the newer ventral vagal system, which responds to social cues and is associated with mammals, and with the release of the hormone oxytocin, which is associated with loving bonding (chapter 4).

The experiments of Benjamin Libet in the 1980s and 1990s, conducted with electrodes applied to the skulls of his human subjects, established the contribution of nonconscious embodied processes to decision-making, thereby linking human free will to neurology. More recently (in 2010), behavioral neurologist Antonio Damasio has shown that those processes are not fixed but can be educated: the “educated cognitive unconscious” enables humans, through repeated practice, to make moral actions second nature. Neuroscience has also demonstrated that emotional awareness—particularly empathy, the ability to experience another’s state as if it were one’s own—together with rational evaluation, contributes to decisions of the will; physiologically, emotional awareness has been tied to the frontal lobes of the brain (chapter 5). Unameliorated stress, associated physiologically with the massive release of the hormones adrenaline and cortisol, and mediated via signals from the amygdala, contributes to poor decision-making and may lead to poor moral choices through its disruption of the innate urge to connect with others (chapter 6).

In each of her chapters, Severino explores how the scientific discoveries she presents are related to issues of the human condition implicit in the creation story of the book of Genesis and how they are adumbrated in the philosophical discernments of Duns Scotus: as she puts it, Scotus “intuitively accessed truths that science is currently rediscovering.” Scotus surpassed his predecessors and contemporaries in his exploration of free will, moral choice, and the means by which humans acquire knowledge. He emphasized that love, in addition to intellect, is vital for moral conduct, that moral living rests upon relationship as well as upon obligation. His theory of cognition identified two cognitive acts: abstraction, whereby the intellect forms mental concepts based upon sense perceptions, and intuition, which is not dependent upon the senses but provides direct awareness of the existence of an object. For Severino, these correspond to the neuroanatomical means by which humans understand the actions and emotions of their fellow humans; the immediate, nonconscious knowing of Scotus’s intuition parallels the non-conscious cognitive mechanisms that are underpinned by the autonomic nervous system. Perhaps Scotus’s best-known formulation is his distinction of desire into what he called affectio commodi (inclination toward/love of that which is useful to the subject) and affectio iustitiae (inclination toward/love of justice or that which will benefit the larger whole—though Severino misleadingly translates the phrase as “desire to love justly”). This distinction enabled Scotus to explore how humans can select between multiple options at the moment of choice and correlates well with the scientific distinction between the activity of the dorsal and the ventral vagal systems. Scotus also recognized that nonconscious as well as conscious processes entered into human choice and that the ability to choose rightly can become second nature; his thinking here foreshadows neuroscientific perceptions of the educable nonconscious embodied processes that promote intersubjectivity. Severino’s conclusion is that Scotus’s insights parallel the discoveries of psychology and neuroscience by presenting a basis for a morality of compassion, interconnectedness, global empathy and valuing . . . a morality of intersubjectivity.”

Severino acknowledges at the beginning of her book that she is not a Scotus scholar and must depend upon modern English translations and interpretations of his Latin treatises. Nevertheless, she has identified the critical elements in his moral thinking, and her juxtaposition of his insights with recent scientific discoveries is arresting. She notes that her book “brings together what the Scientific Revolution and the Age of Reason never should have separated: the disciplines of science and the intuitions of religion.” Her investigation of the parallels between these two worlds produces a thought-provoking work that repays a careful reading.

The Empathy Exams
Leslie Jamison
Graywolf Press, Minneapolis, Minnesota, 2014

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

Towards the end of the title essay in The Empathy Exams, Leslie Jamison writes, “Empathy isn’t something that just happens to us—a meteor shower of synapses firing across the brain—it’s also a choice we make: to pay attention, to extend ourselves.” Empathy is a skill. It takes work. The author is reflecting on her experience as a medical actor, or
standardized patient. In the essay she presents a typical patient case description for a psychiatry module, a young woman whose “seizures” developed shortly after her brother had drowned a year earlier. Jamison, the actor, “became” this patient being interviewed by a medical student. Afterward, she would score the interaction using a checklist that included items like, “Voiced empathy for my situation/problem.” Thus, the exercise was concerned not only with eliciting bits of medical information, but also with the student’s affective and interpersonal skills; in other words, an empathy exam.

The author reflects, in particular, on the performative or verbal aspects of empathy in this context. “It's not enough for someone to have a sympathetic manner or use a caring tone,” she writes. P3 In fact, students received a higher score if they responded verbally to the patient’s affect, and said the right words, in addition to appearing attentive and concerned. Jamison’s entire collection of essays might be conceived as a successful attempt to respond verbally to the reader, to express her own growth in empathic understanding through a wide array of life experiences.

“Devil’s Bait,” another essay, describes the author’s interviews of a number of patients self-diagnosed with Morgellons disease, a poorly understood condition in which sufferers report that thread-like disease, a poorly understood condition in which sufferers report that thread-like fibers emerge from lesions in their skin. These patients experience persistent sensations of crawling and stinging, leading them to believe they are infected with parasites. Medical evaluation reveals no evidence of infestation, although patients may have some nonspecific dermatitis or self-induced skin damage. The “threads” usually consist of cotton fibers or other common materials. Most physicians consider Morgellons disease a “delusional parasitosis.” Jamison interviewed several attendees at a patient-organized Morgellons conference and, though she doubted their self-diagnoses, she had no doubts about their reality of the pain and suffering.

The author makes two particularly pertinent points about her experience at the conference. First, the impact of hearing personal stories is often more compelling than knowing the facts. One day, after taking a shower, she begins to feel crawly sensations around her neck and notice bits of debris on her skin. At the same time, she is quite aware that she doesn’t have an infestation. I think most of us have experienced this sort of “sensory contagion” at one time or another in our lives. This is especially true of medical students learning about diseases for the first time. Secondly, the author wonders about the possible negative effects of developing too much empathy. With regard to Morgellons support groups and conferences, she asks, “When does empathy actually reinforce the pain it wants to console?” I think in this case Jamison confuses empathy (i.e., attempting to understand another’s emotional experience) with identification (i.e., identifying with another’s experience, including their belief system). Only the former is therapeutic.

In another place Jamison writes, “... empathy is always perched precariously between gift and invasion.” P6 This is an elegant, but somewhat misleading, statement. Certainly empathy is a gift, in the sense of being a great benefit. It’s what makes friendship, love, and compassion possible. However, as the author herself states, empathy requires attention and effort; it doesn’t drop from the blue. The “invasion” part also has the potential to mislead. Yes, if I attempted to deeply empathize with each casual acquaintance, I’d become unpopular very quickly. However, in the medical context, empathic “invasion” is an important tool for achieving accurate diagnosis and therapy.

In a long essay entitled “Grand Unified Theory of Female Pain,” Jamison presents an array of thirteen “wounds” suffered by women. She acknowledges Susan Sontag’s critique of metaphor: by turning “the wounded woman into a kind of goddess, romanticized her illness and idealized her suffering” her society normalizes female pain. “It’s to be expected. Sometimes admired. Sometimes trivialized. She cites a 2001 study in which men who reported pain were more likely to receive strong analgesics than were women. Women, however, were more likely to receive sedatives, as if they were exaggerating or dramatizing their pain because of anxiety. Among the thirteen “wounds” Jamison discusses in her “Grand Unified Theory” are anorexia, obsession, self-mutilation, rape, and psychological assault, along with other conflicts and invasions. Each vignette brings her (and the reader) close to the subject’s experience, her coping and conceptualization of the pain.

Those of us interested in teaching literature to medical students often make the claim that careful reading of poetry, novels, short stories, and personal essays can help the student develop a deeper understanding of others and, hence, improve their ability to empathize with patients. The Empathy Exams offers an excellent example of this process. Beginning in the artificial, but safe, environment of a standardized patient program, the reader sits on Leslie Jamison’s shoulder as, episode by episode, she deepens her understanding of herself and others. Meanwhile, readers, too, broaden their own life experience by connecting with the diverse and vulnerable characters they encounter. The bottom line: empathy is “a choice we make: to pay attention, to extend ourselves.” P23

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This informative and interesting book by the physician and medical historian Charles Bryan is mainly about pellagra in South Carolina in the pre-Goldberger era. *Asylum Doctor: James Woods Babcock and the Red Plague of Pellagra* is a detective story of sorts from which biomedical scholars and educators, and current public health students in particular, can derive both pleasure and scholarly insights regarding epidemiology and the snares of prejudice and research bias. The first eighty pages inform the reader about the development of the asylum movement for the mentally ill and the birth pangs of psychiatry in the United States. Ironically, especially in light of the fact that “asylum” is synonymous with “sanctuary,” the asylum in Columbia was the antithesis of a place of refuge.

The protagonist of this extensively documented, well-written, and thoughtfully organized book is Dr. James Wood Babcock, first superintendent of the South Carolina Asylum for the Insane. However, the central arc of the story follows not the life of a man but the zigzag course that led to the discovery that niacin deficiency was the cause of pellagra.

In the last decades of the nineteenth century pellagra had reached epidemic proportions in the Deep South. By the early 1900s, 7,000 pellagra deaths per year were being reported in the fifteen Southern states. Its increasing incidence was first recognized in state-run mental asylums and in rural areas. Why? Because that is where conditions were ripe for the emergence of pellagra: namely, poverty and a monotonous diet centered on corn but low in animal protein. While the governor and legislature of South Carolina had the wisdom to build the asylum in Columbia, the prevailing political climate at the time hewed to a philosophy of small government, low taxes, and bare-bones support for the poor and disabled or handicapped. One of the consequences of such a value system for patients at the asylum supervised by Dr. Babcock was a corn-based diet that contained little in the way of meat, dairy products, or vegetables that might have provided protein. One of the amino acids in proteins essential for health is tryptophan, which the body can metabolize to niacin; 1 mg of niacin can be derived from 60 mg of tryptophan.

At the time Babcock was documenting cases of pellagra, there were four main hypotheses regarding its cause. In 1810 Giovanni Battista Marzari speculated that a poverty-imposed monotonous corn diet lacked something necessary for good health and that pellagra might be a deficiency disease. Unfortunately, though Marzari was right on the mark, 130 years would pass before he was proven correct. At the turn of the twentieth century, two other paradigms dominated the pellagra field: the “spoiled corn” hypothesis and the gnat-borne parasite hypothesis. According to the spoiled corn hypothesis, improperly processed or stored corn permitted the growth of one or more pathogenic microorganisms or the production of toxins by a fungus. A strong proponent of the spoiled corn hypothesis was William Osler, one of the four founding fathers of the Johns Hopkins School of Medicine. The gnat hypothesis, tenaciously promoted by the British scientist Louis Sambon, postulated that a Simulium fly transmitted a pellagra-causing infectious agent, probably a parasite. The consistent observation by many investigators that fever was not associated with pellagra and that the disease was not communicable eventually disproved Professor Sambon’s theory.

In a sense, Marzari’s idea can be considered the “poverty” hypothesis: that is, pellagra was the result of preventable sociological circumstances associated with poverty—address the problem of poverty and provide the poor with a generous and varied diet and you eliminate pellagra. It is arguable that those who advocated for the spoiled corn or infectious disease hypothesis, politicians in particular, did so because to admit that government and civic society were insensitive to the poor would bring shame and humiliation on the state. In their eyes, pellagra wasn’t a human failure; that is, it was not the result of inadequate funding of the mental asylum or insensitivity to inhabitants of rural areas but, instead, to nasty microbes in spoiled corn.

Although Dr. Babcock did not solve the pellagra problem, he did make significant discoveries and publish thoughtful and useful findings. He is widely recognized and respected for having established the National Association for the Study of Pellagra, which kept the scourgé of pellagra in the public’s eye and promoted the search for its cause. He also convened numerous national and international conferences on the disease. Most significantly, he demonstrated that a varied diet could cure pellagra. On the clinical side, Babcock is credited with improving the treatment of black patients with pellagra.

The last third of *Asylum Doctor* is devoted to the scientifically rigorous, laboratory-centered search for the cause of pellagra, focused mainly on the careful and systematic studies of Dr. Joseph Goldberger, a physician in the U.S. Public Health Service. While it was through rigorous application of
the elements of the inductive method articulated by Francis Bacon in the early seventeenth century—namely observation, hypothesis, experimentation, and data analysis—that allowed Goldberger to prove that pellagra was caused by niacin deficiency, the contributions of other investigators were required to fully clarify the centuries-old mystery of this deficiency disorder. Notable among these is Conrad Elvehjem, a biochemist at the University of Wisconsin, who isolated and characterized the structure of niacin, established a pellagra model in dogs, and demonstrated that purified niacin (nicotinic acid) from brewer’s yeast cured pellagra. Noteworthy, too, is Sir Frederick Gowland Hopkins at Cambridge University, who isolated tryptophan from protein. It was subsequently shown that humans could metabolize tryptophan to niacin, thereby satisfying much of a human’s niacin requirement.

Dr. Bryan has done a masterful job of interweaving the saga of the conquest of pellagra with the fascinating and admirable biography of James Charles Babcock, who weathered twenty-five stormy years of caring for patients with pellagra at the state mental asylum in South Carolina, while passionately and relentlessly supporting and encouraging other physicians and scientists in their search for the cause and treatment of the red plague of pellagra. But the story isn’t complete. Questions remain for today’s young scientists in the health professions to contemplate: for example, why was pellagra much more prevalent in women?

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In my heyday
I was the linchpin of life,
a three vessel thoroughfare
role-playing the command
for go forth and multiply.
The ebb-and-flow
of a divine miracle,
the oxygen lorry
for a living being.
Until that final day.
My incubation,
triumphant
poured out
like a priceless piñata
precipitated into daylight.
The blinding snip
of surgical shears
as we separate.
Cold clamps of conclusion.
Lack of acknowledgment.
Humiliation worsened
by days of dangle,
the center of attention.
Everyone waiting
for me to fall off
so that it is finished;
a blind pouch
of disgrace;
life-giver to
lint trap.

Aaron McGuffin, MD

Dr. McGuffin (AΩA, Marshall University, 2002) is Associate Professor of Pediatrics at the Marshall University Joan C. Edwards School of Medicine. He is a member of the editorial board of The Pharos. His address is: 1600 Medical Center Drive, Suite 3413, Huntington, West Virginia 25701. E-mail: aaron.mcguffin@marshall.edu.
Letters to the editor

Re “The Electronic Health Record”

Last year circumstances required me to become an employee of a hospital that uses the EPIC electronic medical record system (EMR). After six months I have become fairly adept at entering the required data, but two problems, evident at the outset, now are glaring: first, in my thirty-nine years of private practice I never engaged in anything so cost-ineffective, to wit, it takes at least twice as long to see a patient because of the necessity for and time needed to enter data; second and more deeply rooted is my newly recognized and subsequently defined fallacy of logic implicit in EMR, i.e., *multa collatia, ergo multa informatio*, that is, “a lot of data must equal a lot of information” (I apologize to any Latin scholars).

I have only one disagreement with the superb essay by Dr. K. Patrick Ober in the Winter 2015 issue, having to do with the dictation of the office note. My first experience with a transcription device occurred in the Air Force in 1971, and I quickly learned that dictating my note in front of my patient was a practical and effective endeavor. First, the patient knew that I was paying attention; second, the patient could correct my note as I dictated it, and my transcriptionist and I could easily handle and note as I dictated it, and my transcriptionist knew how to spell.

One final thing: it was my habit to go out to the waiting room, greet my patient, and walk with her or him back to my consultation room. There is a wealth of clinical information to be gained by this exercise that I will not expound upon in this letter, but it was a challenge to figure out how to do this with EPIC since medical assistants are supposed to see the patient first in order to enter a lot of data and prepare the computer for the visit. Now, when possible, I let the assistant first have his or her way with the patient and then return my patient to the waiting room.

Intellectually, I have been and remain very much in favor of the concept of EMR; practically, however, our current EMR systems have a long way to go to become first, patient centered, and second, an improvement of and not a detriment to practice efficiency and the effective delivery of medical care.

Sidney R. Block, MD
(AΩA, Johns Hopkins University School of Medicine, 1967)
Northport, Maine

Drs. Ober and Applegate are to be applauded for their detailed report on the critical issues associated with the introduction of the EHR into American medicine (Winter 2015, pp 9–14). Our current and future physicians and their patients must bear the burden of the negative aspects of this poorly conceived and tested idea, put in place in the name of improved patient care and safety. What they did not report was its cost. It is actually the one hidden cost in American health care which is never discussed or reported when dollars associated with care are debated. The real cost/benefit of these systems, sold by a few major vendors making enormous profits, is not being assessed. The only known costs are to the users and their patients. Our profession and professional organizations need to force an open discussion of these issues before a permanent scar forever tarnishes our delivery system.

Gerald B. Healy, MD FACS
(AΩA, Boston University School of Medicine, 1995)
Boston, Massachusetts
The Alpha Omega Alpha David and Diane de Harter Visiting Professorship

Last year, University of Wisconsin School of Medicine and Public Health alum Dr. David deHarter and his wife Diane deHarter provided a very generous gift to Alpha Omega Alpha to establish an annual visiting professorship at our school. Our inaugural visiting professor was Dr. Leon Rosenberg, retired professor from Princeton University.

Dr. Rosenberg gave Department of Medicine Grand Rounds, entitled “Of Genes & Genomes: Personal Odyssey, Clinical Evolution.” This was followed by student presentations of their research in progress:

1. Jacob Goldberg, Howard Hughes Medical Institute (HHMI) research scholar program presented: “Description and Characterization of an Endogenous Antibody Associated with Better Outcome after Tumor-Reactive Monoclonal Antibody Therapy.”

2. Trista Stankowski-Drengler, who is a new AΩA inductee and a Shapiro-ICTR (Institute for Clinical and Translational Research) Student Research Fellow presented: “All-Cause Mortality is Decreased in Women Undergoing Annual Mammography Screening before Breast Cancer Diagnosis.”

3. Jon Stefely, MSTP (Medical Student Training Program—MD/PhD) student presented: “Mitochondrial ADCK3 Employs an Atypical Protein Kinase-Like Fold to Enable Coenzyme Q Biosynthesis.”

Dr. Rosenberg then spoke informally to the new AΩA inductees and the Gold Humanism Honor Society students about his path to leadership, medical professionalism, and patient care.

Finally, Dr. Rosenberg was the keynote speaker at the AΩA induction banquet.

Top, Dr. Leon Rosenberg. Above, Jacob Goldberg, Trista Stankowski-Drengler, and Jon Stefely.
New member of the Pharos editorial board

We are pleased to announce the addition of another member to the Pharos editorial board:

Aaron McGuffin, MD

Aaron McGuffin (AΩA, Marshall University, 2002, Resident) is an Associate Professor of Pediatrics at Marshall University Joan C. Edwards School of Medicine in Huntington, West Virginia. He is a 1999 graduate of Marshall and a 2003 graduate of the school’s Medicine-Pediatric Residency Program. He has served in many roles over the past twelve years at Marshall, including as clinician, medical educator, and medical education dean. His most recent endeavor has involved applying web-based and mobile technology to medical education through an exciting curricular project entitled Universal Notes.

Dr. McGuffin’s love of poetry was developed as a child through influences from his mother, Rosemary, a beloved English teacher in high school and college. He has been published in several journals and local publications, and published his first book of poetry, Common Illness, in 2013. Dr. McGuffin draws inspiration for his writing primarily from his medical practice, his four children, and his deep faith. He is thrilled to join the Pharos editorial board as a poetry reviewer.

Medical Professionalism: Best Practices

In July 2013, Alpha Omega Alpha, with support from a President’s Grant from the Josiah Macy Jr. Foundation, sponsored a think tank on medical professionalism remediation best practices.

The two-day meeting was attended by more than a dozen scholars in medical professionalism remediation, and included presentations on aspects of medical professionalism and ways of looking at and dealing with lapses.

The result is the publication of an AΩA monograph, Medical Professionalism: Best Practices. The monograph is available on the AΩA web site both to read online and as a PDF download at http://alphaomegaalpha.org/medprof2015.html.

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- Chapter 2. The Problem with Professionalism. Catherine R. Lucey, MD.
- Chapter 3. Current Practices in Remediating Medical Students with Professionalism Lapses. Deborah Ziring, MD, Suely Grosseman, MD, PhD, and Dennis Novack, MD.
- Chapter 4. Review of Current Models for Remediation of Professionalism Lapses. Sheryl A. Pfeil, MD, and Douglas S. Paauw, MD.
- Chapter 7. Pursuing Professionalism (But not without an infrastructure). Gerald B. Hickson, MD, and William O. Cooper, MD, MPH.
- Chapter 9. Remediating Professional Lapses of Medical Students: Each School and Island? Richard Frankel, PhD.
- Chapter 10. Concluding Thoughts. George Thibault, MD.
- Chapter 11. Improving Professionalism in Medicine: What Have We Learned? Sheryl A. Pfeil, MD.
2015 Carolyn L. Kuckein Student Research Fellowships

In 1982, the board of directors of Alpha Omega Alpha established five student research fellowship awards to encourage and support student research. Since then, the awards have grown in number to more than fifty each year. The fellowship emphasizes a student-designed and -initiated project with an academic mentor. Recipients of the fellowship tell us that the awards have helped them to learn about the joys of scientific and scholarly discovery, and have increased their critical understanding of scholarship and research in health care and science. Many recipients of the fellowship have followed up their work as student-researchers to become physician-scientists.

Each student receives a $5000 award, with $1000 available for travel to a national meeting to present the research results. In 2004, the name of the fellowship program was changed to the Alpha Omega Alpha Carolyn L. Kuckein Student Research Fellowship awards in honor of Carolyn L. Kuckein, AΩA’s longtime administrator, who died in January 2004.

Evaluations of the fellowship proposals were made by the following reviewers: C. Bruce Alexander, MD; Thomas T. Andersen, PhD; Carola Arndt, MD; Robert G. Attnip, MD; Jeremiah Baroness, MD; Robert Beach, MD; Syamal K. Bhattacharya, PhD, CLD; Paul A. Bunn, MD; Tim Byers, MD, MPH; Ken Byrd, MD; Stephen Y. Chan, MD; Preston Church, MD; Harry Clarke, MD; Lynn M. Cleary, MD; Graciela De Jesus, MD; Daniel Foster, MD; Doug Fredrick, MD; Mark George, MD; Boyd Gillespie, MD; Richard F. Gillum, MD, MS; Charles Griffith II, MD, MSPH; Richard B. Gunderman, MD, PhD; Ranjan Gupta, MD; Eve Higinbotham, MD; Marc G. Jeschke, MD, PhD, FACS; Burk Jubelt, MD; Thomas Keane, MD; J. Michael Kelby, MD; Jeffrey Klein, MD; David McAneny, MD; Patricia G. Mburney, MD, MSCR; Mark J. Mendelsohn, MD; Lesley Motheral, MD; Douglas S. Pauw, MD; Thoru Pederson, PhD; Suzann Pershing, MD; Sheryl Pfeil, MD; Noah S. Philip, MD; Don W. Powell, MD; Paul B. Pritchard, MD; Steven P. Ringel, MD; Alan G. Robinson, MD; Griffin P. Rodgers, MD, MBA; Shashikumar Salgar, PhD; Richard M. Silver, MD; Wiley Souba, Jr., MD, ScD, MBA; Joseph Stains, PhD; Joseph W. Stubbs, MD, MACP; John Tooker, MD, MBA, MACP; Kenneth L. Tyler, MD; Gabriel T. Virella, MD, PhD; Graham Warren, MD; Alan G. Wasserman, MD; Gerald Weissmann, MD; John A. Zic, MD.

The recipients of the 2015 fellowships are:

Rahul Bhansali
Class of 2018, University of Illinois College of Medicine
Proteomic identification of novel targets of protein kinase DYRK1A in lymphocytes and their potential implications in acute lymphoblastic leukemia
Mentor John Crispino, PhD
Councilors Melvin Lopata, MD; Jessica Ryan Hanks, MD

Candace Borders
Class of 2018, University of California, Irvine, School of Medicine
Effect of Limb Overuse on Repair and Oligodendrocyte Progenitor Cell Activity after White Matter Stroke
Mentor S. Thomas Carmichael, MD, PhD
Councilors Ranjan Gupta, MD; Michael L. Berman, MD

Taylor Brooks
Class of 2018, University of Cincinnati College of Medicine
NK cell crosstalk with myeloid suppressor cells promotes chronic infection
Mentor Stephen Waggoner, PhD
Councilor Robert G. Luke, MD

Philip Chan
Class of 2016, Tufts University School of Medicine
The relationship between administered oxygen levels and arterial partial oxygen pressure to neurocognition in postoperative mechanically ventilated cardiac surgical patients
Mentor Balachundhar Subramaniam, MD
Councilor Amy L. Lee, MD

Jason Chien
Class of 2017, George Washington University School of Medicine
Glaucagon Diagnostic Capability of Macular Layer Volume and Thickness Using Spectral-Domain Optical Coherence Tomography
Mentor Sung Chul Park, MD
Councilor Alan G. Wasserman, MD

Lee Ann Chiang
Class of 2017, University of Miami Leonard M. Miller School of Medicine
Effect of fibrin matrices-containing growth factor cocktails on FDA approved human fetal neural stem cell engraftment in rat model of penetrating traumatic brain injury (PTBI)
Mentor Ross Bullock, MD, PhD
Councilor Alex J. Mechaber, MD

Noura Choudhury
Class of 2016, University of Chicago Division of the Biological Sciences The Pritzker School of Medicine
Quantitative analysis of T-cell receptor (TCR) diversity as a predictive marker for recurrence risk in muscle-invasive bladder cancer
Mentor Yusuke Nakamura, MD, PhD
Councilor Adam Cifu, MD

Brian Chung
Class of 2018, Loma Linda University School of Medicine
Robot Simulator Skills: Impact of Background Music on Learning Curve of Robot Surgical Skills
Mentor Duane Baldwin, MD
Councilor Danny Wongworawat, MD

Lawrence Chung
Class of 2017, University of California, Los Angeles David Geffen School of Medicine
Anti-EMP2 Antibody for the Treatment of Glioblastoma Multiforme
Mentors Isaac Yang, MD; Madhuri Wadehra, PhD
Councilor Neil H. Parker, MD

Daphney Clermont
Class of 2018, University of Florida College of Medicine
CRISPR/Cas-mediated modification of MEGF10 produces a novel model for the study of MEGF10 myopathy
Mentor Peter B. Kang, MD
Councilor Heather Harrell, MD
Taylor Conrad  
Class of 2016, Louisiana State University School of Medicine in Shreveport  
Mitochondrial Dysfunction in the Nephrotoxicity of Diglycolic Acid, the Toxic Metabolite of Diethylene Glycol  
Mentor Kenneth McMartin, PhD  
Councilor Jane Eggerstedt, MD

Michelle Corrado  
Class of 2018, Ohio State University College of Medicine  
Emergency Medical Services (EMS) transport versus private transport among injured children in the United States  
Mentor Huiyun Xiang, MD, MPH, PhD  
Councilor Sheryl Pfeil, MD

David Cron  
Class of 2018, University of Michigan Medical School  
Preoperative opioid use and healthcare utilization in abdominal surgery: a novel target for surgical quality improvement  
Mentors Michael J. Englesbe, MD; Chad M. Brummett, MD  
Councilor Sanjay Saint, MD, MPH

Prarthana Dalal  
Class of 2018, Northwestern University The Feinberg School of Medicine  
Characterizing the Role of IQGAP1 in Leukocyte Transmigration  
Mentor William A. Muller, MD, PhD  
Councilor John P. Flaherty, MD

Jason Davis  
Class of 2018, Indiana University School of Medicine  
Use of computed tomography (CT) imaging in the assessment of patient nutrition, frailty and risk related to end-stage liver, kidney and intestine failure  
Mentor Richard S. Mangus, MD, MS  
Councilor Richard B. Gunderman, MD, PhD

Ramita Dewan  
Class of 2018, University of Maryland School of Medicine  
High throughput genomic analysis of vestibular schwannomas in neurofibromatosis type 2  
Mentor Alexander Pemov, PhD  
Councilors Yvette Rooks, MD; Donna Parker, MD; Zaineb Makhzoumi, MD, MPH

Kaitlin Fitzpatrick  
Class of 2016, University of Massachusetts Medical School  
Effectiveness of semi-rigid Savary dilators vs. balloon dilators during esophageal dilation in the treatment of esophageal dysmotility  
Mentor David R. Cave, MD, PhD  
Councilor David A. Drachman, MD

Prakriti Gaba  
Class of 2017, Mayo Medical School  
Novel Percutaneous Epicardial Pacing and Defibrillation  
Mentor Samuel Asirvatham, MD  
Association Chair Carola Arndt, MD

Courtney Gaberino  
Class of 2018, Medical College of Wisconsin  
Toward Personalized Nasal Surgery Using Computational Fluid Dynamics  
Mentors Guillherme J. M. Garcia, PhD; John S. Rhee, MD, MPH  
Councilor Michael Lund, MD

Sarah Guess  
Class of 2018, Medical University of South Carolina College of Medicine  
Early Identification of Heterotopic Ossification following Extremity Blast Injury with a Biomarker Assay  
Mentor Vincent D. Pellegrini, Jr., MD  
Councilor Christopher G. Pelic, MD

Trudy Hong  
Class of 2017 University of Hawaii, John A. Burns School of Medicine  
The role of Six2 in frontonasal dysplasia and median facial clefts  
Mentors Scott Lozanoff, PhD; Benjamin Fogelgren, PhD  
Councilor Jill Omori, MD

Pierce Janssen  
Class of 2018, Stony Brook University School of Medicine  
An ultrastructural immunogold examination of cerebral vasculature extracellular matrix proteins in a rat model of blast-induced mild traumatic brain injury  
Mentors Gregory Elder, MD; Miguel Gama Sosa, PhD  
Councilor Jack Fuhrer, MD

Nona Jiang  
Class of 2018, University of Virginia School of Medicine  
Systemic cytokines and neurocognitive development  
Mentors William A. Petri, Jr., MD, PhD; Charles A. Nelson III, PhD  
Councilor Mark J. Mendelsohn, MD

Travis Ladner  
Class of 2016, Vanderbilt University School of Medicine  
Using RNA Interference to Prevent Cerebral Vasospasm after Subarachnoid Hemorrhage: Improving Vessel Relaxation Through Heat Shock Protein 20 Upregulation  
Mentor Colleen Brophy, MD  
Councilor John A. Zic, MD

Ann Liu  
Class of 2016, Wake Forest School of Medicine of Wake Forest Baptist Medical Center  
Evaluation of Sexual Dysfunction Following Resection of Intramedullary Spinal Cord Tumors  
Mentor Chetan Bettegowda, MD  
Councilor K. Patrick Ober, MD

Boshen Liu  
Class of 2017, University of Mississippi School of Medicine  
Rapid Bone Density Screening of CT Images Using Color Enhanced Detection  
Mentor Andrew Smith, MD, PhD  
Councilor Omar Abdul-Rahman, MD

Andrew Mamalis  
Class of 2016, University of California, Davis, School of Medicine  
Red Light Emitting Diode Photomodulation of Skin Fibrosis  
Mentor Jared Jagdeo, MD; R. Rivkah Isseroff, MD  
Councilor Regina Gandour-Edwards, MD
Justin Markel  
Class of 2018, West Virginia University School of Medicine  
Trauma induced inflammation: The role of platelets and innate immune signaling  
Mentor Matthew D. Neal, MD  
Councilor Melanie Fisher, MD, MSc

Emily Martin Scott  
Class of 2018, University of Washington School of Medicine  
Molecular epidemiology and spatial analysis of respiratory syncytial virus (RSV) and human metapneumovirus (hMPV) transmission in rural Nepal  
Mentor Janet Englund, MD  
Councilor Douglas S. Pauw, MD

Ashley Mathew  
Class of 2018, Albany Medical College  
Forcing HIV’s Hand Against a Novel Antiviral State Established in Sulforaphane-Treated Macrophages  
Mentor Carlos M. C. de Noronha, ScD  
Councilor Neil Lempert, MD

Amol Mehta  
Class of 2018, Chicago Medical School at Rosalind Franklin University of Medicine & Science  
Direct Conversion of Resident Glia to Functional Inhibitory Neurons  
Mentor Daniel A. Peterson, PhD  
Councilor Michael J. Zdon, MD

Paul Montgomery  
Class of 2017, Oregon Health & Science University School of Medicine  
Short-Chain Fatty Acids and their effect on the pathogenesis of Ankylosing Spondylitis  
Mentor Daniel A. Peterson, PhD  
Councilor Michael J. Zdon, MD

Tarek Mouhieddine  
Class of 2016, American University of Beirut School of Medicine  
EBV infected B Lymphocyte Exosomes and Dendritic Cells: Differential Cytokine Profile in Multiple Sclerosis  
Mentor Samia J. Khoury, MD  
Councilor Ibrahim S. Salti, MD

Victor Ng  
Class of 2018, New York University School of Medicine  
The epigenetic role of TET2 mutations in myeloid malignancy  
Mentor Iannis Aifantis, PhD  
Councilor Linda Tewksbury, MD

Shannon Niedermeyer  
Class of 2016, University of Tennessee Health Science Center College of Medicine  
The Role of M-Related Proteins in New Generation Group A Streptococcal Vaccines  
Mentor James T. Rosenbaum, MD  
Councilor Michele Mass, MD

Kristina Nikolova  
Class of 2018, Drexel University College of Medicine  
The Effects of Beta Amyloid Peptide on Glutamate Metabolism during Induced Senescence of Astrocytes  
Mentor Claudio Torres, PhD  
Councilor Kathleen Ryan, MD

Angela Nolin  
Class of 2018, Boston University School of Medicine  
Albumin reabsorption in the renal proximal tubule inhibits mitophagy, leading to mitochondrial damage, increased ROS production and tubular cell damage  
Mentor Andrea Havasi, MD  
Councilor David McAneny, MD

Hardik Parikh  
Class of 2016, Rutgers New Jersey Medical School  
Rebuilding an Ablated Trabecular Meshworking Using Stem Cells  
Mentors Nils A. Loewen, MD; Neelakshi Bhagat, MD  
Councilor Robert A. Schwartz, MD, MPH

Kevin Qin  
Class of 2018, The University of Toledo College of Medicine  
Role of Raf kinase inhibitory protein in MCF-7 breast cancer cell proliferation and mitotic progression  
Mentor Kam C. Yeung, PhD  
Councilor Donna Woodson, MD

Saned Raouf  
Class of 2017, University of Colorado School of Medicine  
Estimating the impact of indoor residual spraying of insecticide using a novel health facility-based malaria surveillance program in Uganda  
Mentor Grant Dorsey, MD, PhD  
Councilor James Beck, MD

Dioval Remonde  
Class of 2017, The Brody School of Medicine at East Carolina University  
Characterization of Patient-Derived Xenograft Models to Evaluate Clinical and Therapeutic Responses of Glioblastoma Multiforme  
Mentor Jann N. Sarkaria, MD  
Councilor Danielle S. Walsh, MD

Charles Riccio  
Class of 2016, University of Louisville School of Medicine  
The Sensitive Breast: Evaluation of Nerve Density to Different Regions of the Breast and Nipple  
Mentor Bradon Wilhemi, MD  
Councilor Daniel Danzl, MD

Alexandra Rosenberg  
Class of 2016, Duke University School of Medicine  
Assessing the Therapeutic Potential of Epothilone D and an Apolipoprotein E mimetic peptide in a Marine Model of Chronic Traumatic Encephalopathy  
Mentors Daniel Laskowitz, MD; Hana Dawson, PhD  
Councilor Edward Buckley, MD

Brad St. Martin  
Class of 2017, University of Kentucky College of Medicine  
Quantifying the relationship of distance to care on clinical outcomes for HIV patients  
Mentors Moises Huaman Joo, MD, MSc; Alice Thornton, MD  
Councilor Charles Griffith III, MD, MSPH

Ranjodh Singh  
Class of 2017, Weill Cornell Medical College  
Molecularly-Defined Combinatorial Targeted Therapy in a Diffuse Intrinsic Pontine Glioma Mouse Model Using Convection-Enhanced Delivery  
Mentor Mark M. Souweidane, MD  
Councilor O. Wayne Isom, MD
Saurabh Sinha
Class of 2016, Rutgers Robert Wood Johnson Medical School
Electroencephalographic Studies of Changes in Dorsal Anterior Cingulate Cortex Function in Addiction Treated with Repetitive Transcranial Magnetic Stimulation
Mentor Sameer A. Sheth, MD, PhD
Councilor Geza Kiss, MD
Jacqueline Tin
Class of 2017, State University of New York Downstate Medical Center College of Medicine
The relationship between cerebrovascular reactivity and cognitive dysfunction in adult patients with sickle cell anemia
Mentors Jason Lazar, MD; Louis Salciccioli, MD
Councilor Douglas R. Lazzaro, MD
Timothy Tiutan
Class of 2016, University of Arizona College of Medicine
Combined Therapy Targeting Anti-Apoptotic BCL2 and MCL1 Proteins In High-Risk Diffuse Large B-Cell Lymphoma
Mentor Jonathan Schatz, MD
Councilor Joseph S. Alpert, MD
Amy Ton
Class of 2018, University of California, San Francisco, School of Medicine
Neuronal regulation of heterotopic ossification in FOP using human iPS cells
Mentor Edward Hsiao, MD, PhD
Councilor Lee Atkinson-McEvoy, MD
Brian Tsui
Class of 2017, Case Western Reserve University School of Medicine
PSMA Targeted Photodynamic Therapy for Prostate Cancer
Mentor James Basilion, PhD
Councilor James E. Arnold, MD
Adam Verhoef
Class of 2018, University of Iowa Roy J. and Lucille A. Carver College of Medicine
Molecular Methods for Diagnosing Asymptomatic Leishmaniasis
Mentors Mary Wilson, PhD; Selma Jeronimo, MD, PhD
Councilor Christopher Cooper, MD
Yu Wang
Class of 2016, Johns Hopkins University School of Medicine
Healthcare Utilization and Awareness of Eye Disease by Persons with Diabetes Mellitus in Medicine and Ophthalmology Clinics
Mentor Neil M. Bressler, MD
Councilor Charles W. Flexner, MD
Kaeli Yuen
Class of 2018, Keck School of Medicine of the University of Southern California
Offline Testing of an Automated Clinical Decision Support (CDS) System for Patients with Multiple Complex Chronic Conditions
Mentor Mary K. Goldstein, MD
Councilor Eric Hsieh, MD
Andrew Zhang
Class of 2018, University of Minnesota Medical School
The Role of Cell to Extracellular Matrix Interactions in a Spatiotemporal 3D Environment for Endothelial Cell Differentiation of Human Induced Pluripotent Stem Cells
Mentor Jianyi Jay Zhang, MD, PhD
Councilor Charles Billington, MD

2015 Helen H. Glaser Student Essay Awards
The thirty-third annual Alpha Omega Alpha Helen H. Glaser Student Essay Awards were made in May. This year’s winners are:

First prize: “Shakespeare’s Macbeth: An Insight into Politics, Religion, and the King’s Touch in Reformation England,” by Fleta Bray, Class of 2016 at the University of Miami Leonard M. Miller School of Medicine.

Second prize: “Art in a Time of Chronic Illness: the Effects of Systemic Sclerosis as Seen through the Works of Paul Klee,” by Grace Prince, Class of 2015 at the University of Virginia School of Medicine.

Third prize: “In an Instant,” by Maya Armstrong, Class of 2018 at the Ohio State University College of Medicine.

Honorable mention: “From Medical Student to Midwife: The Day I Delivered My Daughter on Our Bedroom Floor,” by Kevin Lowder, Class of 2016 at Texas Tech University Health Sciences Center Paul L. Foster School of Medicine.


Winning essays will be published in future issues of The Pharos.

2015 Pharos Poetry Competition winners
The Pharos Poetry Competition awards were made in April. This year’s winners are:

First Prize: “Confessions,” by Jennifer Hu, Class of 2018 at the University of Rochester School of Medicine and Dentistry.

Second Prize: “Kyrie,” by Alyse Marie Carlson, Class of 2016 at the University of Iowa Roy J. and Lucille A. Carver College of Medicine.

Third Prize: “Sestina for a Father,” by Ting Gou, Class of 2017 at Howard University College of Medicine.

Honorable mention: “No Words,” by Brittney Jones, Class of 2015 at the University of Michigan Medical School.

Honorable mention: “Patient Belongings,” by Michael Yee, Class of 2015 at the University of Michigan Medical School.

Honorable mention: “A Forensic Pathologist’s Villanelle” by Catherine Perez, Class of 2018 at the University of Illinois College of Medicine.


Winning poems will be published in future issues of The Pharos.
Pharos Art Director Jim M’Guinness created A Pictorial History of Medical Care for The Pharos in 1973, when it was published as a black and white drawing on the Spring 1973 cover. We recently republished the art in color on the Winter 2015 cover of The Pharos, and we are now offering it for purchase. Choose from:

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