



AUA

Association of University Anesthesiologists

Update

Winter 2012

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Jeffrey Apfelbaum, M.D. Awarded ASA Distinguished Service Award (DSA) and Delivers Rovenstine Lecture at 2012 Meeting

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AUA member Jeff Apfelbaum, M.D. wins the “double crown” of anesthesiology, being awarded the DSA and then delivering the Rovenstine Lecture on “Safety in Numbers: The Genesis, Development, and Future of ASA Practice Parameters.” His presentation was an overview of how ASA writes guidelines, describing the rigorous methods that are used by ASA in developing and promulgating practice parameters. He started by describing the rationale for such publications as grounded in patient outcomes and safety goals. The four types of practice parameters ASA publishes are 1) Standards, 2) Guidelines, 3) Practice Advisories and 4) Statements with, respectively, progressively lower levels of evidentiary support for the continuum of these practice-supporting publications:

- Standards: Minimum requirements for safe practice. Up to now these have not undergone rigorous scrutiny but were consensus-based and current ones were prior to current processes. Future standards can be expected to have undergone rigorous evidence-based evaluation.
- Guidelines: Recommendations for safe practice.
- Practice Advisory: Systematically developed reports that are intended to assist decision-making in areas of patient care where scientific evidence is insufficient to develop an evidence-based model.
- Statements: Represent opinions, beliefs and best medical judgment of ASA leadership and/or the ASA House of Delegates.

He indicated that the Institute of Medicine gives credit to the profession of anesthesiology for these publications in contributing to the impressive gains in patient safety that have arisen in recent decades. The importance and usefulness to anesthesia practitioners of these publications is supported by Dr. Apfelbaum’s observation that of the over 900,000 webpage hits for the ASA website, the Standards and Guidelines were the next most common hit over just a three-month period from June-August 2012. Moreover, of the top 50 articles viewed online in *Anesthesiology* since 2009, 15 were publications on standards and guidelines. He was emphatic that the process for creating these publications is by the members and for the members with most of the work done on a voluntary basis.

Dr. Apfelbaum outlined the rigorous process by which standards and guidelines are written. It starts with ensuring that the task force has a balanced composition, including academics, private practitioners, subspecialists and methodology experts. Every effort is then made to evaluate published evidence in



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Health Services Research Session Held at 2012 ASA

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On October 13, 2012, from 1:30 to 4:30 p.m., a meeting of investigators in health services research in anesthesiology took place at the Renaissance Washington, D.C. Downtown Hotel. The meeting was sponsored by the AUA, in partnership with the Perelman School of Medicine at the University of Pennsylvania, the Society of Academic Anesthesiology Associations, the International Anesthesia Research Society and the Foundation for Anesthesia Education and Research. The meeting was by invitation only and was organized and moderated by AUA President Lee A. Fleisher, M.D.

It began with presentations on sources of funding for perioperative health services research by Carolyn A. Clancy, M.D., Director of the U.S. Agency for Healthcare Research and Quality, and Joseph Selby, M.D., M.P.H., the Executive Director of the U.S. Patient-Centered Outcomes Research Institute. Dr. Clancy and Dr. Selby discussed the funding structures and priorities of their respective organizations, and highlighted specific opportunities where academic anesthesiology departments could apply for competitive funding for health services research projects.

The second portion of the meeting included a panel discussion of career development pathways in perioperative health services research, presented by Hannah Wunsch, M.D., M.Sc., Herbert Irving Assistant Professor of Anesthesiology at the College of Physicians and Surgeons of Columbia University, Mark D. Neuman, M.D., M.Sc., Assistant Professor of Anesthesiology & Critical Care of the Perelman School of Medicine at the University of Pennsylvania, and Laurent Glance, M.D., Professor of Anesthesiology and Vice-Chair for Research at the University of Rochester. The speakers, all of whom were either current or past recipients of career development grants (K Awards) from either the National Institutes of Health or the Agency for Health Care Quality and Research, discussed their

distinct pathways to careers in health services research, and their experiences in applying for funding as a new investigator. Dr. Glance, who has also received funding for multiple federal R01 grants for perioperative health services research, discussed his transition from an early-career investigator to a senior research and his process of securing independent research funding.

The program concluded with a keynote speech by Arthur Kellermann, M.D.,



Mark Neuman, M.D., M.Sc.

"A listserv has been established in connection with the meeting to allow for continued exchanges regarding funding and career development opportunities in perioperative health services research."

M.P.H., the Paul O'Neill Alcoa Chair in Policy Analysis at the RAND Corporation. Dr. Kellermann's speech, titled "From Health Services Researcher to Policy Change Agent," focused on his experiences as a health services researcher and an emergency medicine physician in examining quality-of-care issues and

working to communicate findings to policymakers.

The presentations were followed by an active question-and-answer period from audience members, and a listserv has been established in connection with the meeting to allow for continued exchanges regarding funding and career development opportunities in perioperative health services research.

Post-election Challenges and Academic Anesthesiology

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Though most of us are still recovering from “election fever,” the challenges facing our nation will require the focused talents of all Americans. Several reports suggest that in order to avoid the looming fiscal cliff, President Barack Obama will propose a grand bargain that would reduce the deficit by \$4 trillion over 10 years, relying on a 3-to-1 mix of spending cuts and revenue increases. In predicting which programs will face the deepest cuts, lawmakers will likely target Social Security, Medicare and Medicaid – all programs that have (direct and indirect) ramifications on academic anesthesiology. Revenue increases will likely come from an increase in taxes and elimination of many deductions as well as loopholes.

Moreover, on December 31, 2012, the Bush-era tax cuts expire, as does a payroll tax cut enacted during the Obama Administration. Democrats are keen on preserving the Bush tax cuts only for low- and middle-income individuals (and families). In addition, \$1 trillion in automatic across-the-board

“It is important to keep in mind going forward, however, that since the Affordable Care Act (ACA) is now here to stay, its proposed Independent Payment Advisory Board will be authorized to put a brake on Medicare spending if Congress will not.”

budget cuts kick in next year as a result of Congress failing to reduce the budget deficit in 2011. These “sequestration” cuts include a 2 percent reduction in Medicare reimbursement for physicians and other health care providers. That 2 percent hit is on top of a 26.5 percent cut in Medicare pay scheduled for next year, triggered by the program’s sustainable growth rate (SGR) formula. Replacing the SGR formula with a Medicare reimbursement scheme more equitable to physicians (a “doc fix”) would easily cost around \$300 billion over the course of 10 years. Given the all-too-familiar experience with annual postponements of Medicare rate reductions, there is no reason to expect that this will not occur again as Congress is likely to head back for a lame duck session.

It is important to keep in mind going forward, however, that since the Affordable Care Act (ACA) is now here to stay, its proposed Independent Payment Advisory Board will be authorized to put a brake on Medicare spending if Congress will not. As a result, Medicare reimbursement rates may actually worsen in the future if an expedient solution to the SGR is not put in motion. Furthermore, states, health care organizations and

companies alike are grappling with other compliance issues related to the ACA’s requirements. Notably, businesses are being forced to take a hard look at how to handle the shift in health care benefits and the potential costs that are part of the law, which goes fully into effect in 14 months. Several reports indicate that many employers are examining the costs and benefits of shifting more of their workforce toward part-time employment in order to avoid many of the costs related to full-time employees. This may result in a dramatic increase in the number of Americans without health insurance.



Sadeq A. Quraishi, M.D.,
M.H.A.

Current Action Items Political Action Committee

The ASA’s Political Action Committee (ASAPAC) was instrumental in the support of 22 new members and 159 returning members of Congress. With ASAPAC help and with the support of anesthesiologists from across the country, our own Dr. Andy Harris (R-MD), an anesthesiologist and member of the House of Representatives, was successful in his re-election bid. The ASAPAC also helped three members of the GOP “Doc Caucus” return to Congress after facing tough challenges. Dr. Larry Bucshon (R-IN), Dr. Dan Benishek (R-MI), and Dr. Joe Heck (R-NV) all retained their seats in Congress. At this time, one ASAPAC key race with a physician candidate, Dr. Ami Bera (D-CA), is still too close to call. Although ASAPAC has a current win rate of almost 90 percent, it needs the support of all anesthesiologists to advocate effectively in Capitol Hill. Please continue to support ASAPAC and encourage your colleagues to join. One-hundred percent participation from academic anesthesiology will send a clear and loud message to Congress!

Join ASAPAC:
www.asahq.org/ASAPAC

Research Funding

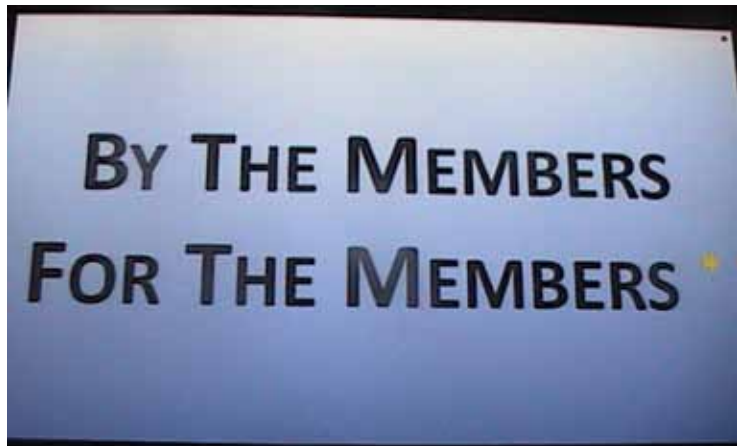
The Federation of American Societies for Experimental Biology (FASEB) is leading a major effort to advocate against devastating cuts facing the nation’s research agencies. Unless Congress acts before the end of the year, under sequestration, the National Institutes of Health (NIH) will lose \$2.8 billion and will likely fund 25 percent fewer grants. The National Science Foundation (NSF) could also be cut by nearly \$600 million.

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Jeffrey Apfelbaum, M.D. Awarded ASA Distinguished Service Award (DSA) and Delivers Rovenstine Lecture at 2012 Meeting

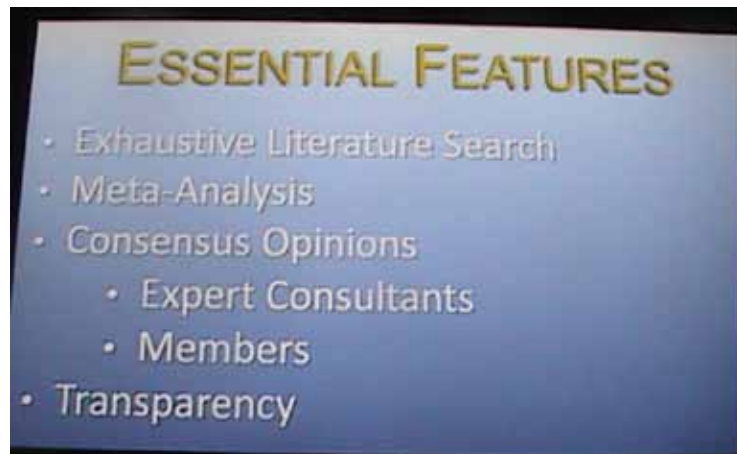
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a manner that is systematic, standardized and transparent. This requires significant ASA resources; on average, each new practice parameter costs \$250,000 and takes one to three years to develop.



He then reviewed the chronology of ASA's standards and guideline publications and then provided a detailed description of the processes for eliminating bias and evaluating the literature.

He ended the oration with a discussion of future directions. This included the notion of an increased role of national registries to improve care with a suggestion that they might have a role in the process of developing future standards, guidelines, practice parameters and statements from ASA. Overall, he presented (and will publish in *Anesthesiology*) a document on writing standards, guidelines, practice parameters and statements, possibly setting the standard for other professional societies endeavoring to provide the same service.



Post-election Challenges and Academic Anesthesiology

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Write to Congress to oppose these cuts: capwiz.com/faseb/issues/alert/?alertid=62032501

FASEB has also released additional factsheets describing the amount of NIH funding in congressional districts across the country and examples of how research conducted at local institutions has improved health, increased innovation, strengthened the economy and trained the next generation of scientists. In addition, FASEB is sponsoring a contest offering \$25,000 in prize money for the most creative exhibits, events and other public outreach activities that highlight the value of federally funded research.

FASEB Fact Sheets:

www.faseb.org/Policy-and-Government-Affairs/Advocacy-on-Capitol-Hill/Advocacy-Resources-for-Scientists.aspx

FASEB Contest:

www.wizehive.com/contests/faseb-stand-up-for-science-contest

2013 is likely to be a year that will require significant involvement from physicians to play an active role in shaping the future of our health care system. Please take the time and be proactive about being an advocate for our profession, for our patients and for a better nation. We will try to keep you updated on action items as they emerge, but for more timely updates on items that need input, please join the ASA's Grassroots network: grassroots.asahq.org

SAB Report: The Big Questions for Anesthesiology

Pamela Flood, M.D.

Academic anesthesiologists often complain about difficult, recalcitrant, and uncaring funding agencies. At a recent meeting, in response to these cries, a sage icon in our field, Ted Eger, rejoined, "I know the problem. We have made anesthesia too safe."

Ted is correct. Gone are the days when the public rightfully dreaded undergoing anesthesia, fearing they would never wake up. In the 1940's, 1 person per thousand died under anesthesia. With major advances in monitoring and pharmacology, by the 1970s, the incidence of death from general anesthesia had dropped to 1 per ten-thousand and has now dropped to 1 per hundred-thousand.¹ Society is willing to accept these odds.

The public good is best served by investing in unmet medical needs. People still die from diabetes, cancer, and heart disease. The deaths from automobile accidents, prescription drug abuse, and suicide are staggering. Malnutrition, violence, and lack of access to health care remain global medical problems. Against this background, is there a pressing societal need to understand the differences between pressure-controlled and volume-controlled ventilation? Is any patient better off once we have nailed down the etiology of fentanyl-induced cough? Has anesthesia research reached the end of the road?

No, we are just getting started!

This is the beginning of a new age of anesthesia research. We see patients at a point in time characterized by an information cusp. Our patients present to us with (ideally) a complete medical history, updated and comprehensive laboratory values, complete genetic background

(provided our institutions facilitate collection of perioperative blood for genetic analysis), and physiologic data. We are present at an inflection point in the patient's medical history. We are thus positioned to measure the risk factors that drive outcome, participate in the assignment of patients to different treatments, and track the outcome of interventions following the immediate perioperative course. Our position as perioperative physicians permits us to ask and answer questions about why patients die from diabetes, cancer, and heart disease. We can apply our knowledge about patient safety, for which our profession is justifiably proud, to reduce death from automobile accidents, prescription drug abuse, and suicide. Our role in healthcare economics can help guide global efforts to address malnutrition, violence, and lack of access to health care. Our broad clinical perspective can inform our basic science investigations. We can address important problems.

However, it starts by seeing ourselves for who we truly are. We are not "just anesthesiologists" pushing drugs in an operating room, physicians whose questions are limited to eclectic perioperative concerns. We are anesthesiologists, physicians

with multidisciplinary skills. We are physicians perfectly positioned to assume a broad role in medical research. We are physicians who have made, are making, and will make profound contributions to clinical and basic medical science.

What are the big questions? A question that has recently received considerable attention is the risk of anesthetic drugs at the extremes of life. Nearly all general anesthetic agents have been shown to have long lasting effects on learning and memory when young animals are exposed during a critical period of development. This was first shown by Jevtovic-Todorovic.² In experiments replicated in many animal models, following prolonged exposure to a general anesthetic during the phase of development during which synaptogenesis occurs, the brains of young animals demonstrate apoptosis, particularly in the hippocampal areas. These histologic findings are accompanied by lasting deficits in memory, learning, and behavioral paradigms. Since human development is so long compared to rodent development, it is hard to know the equivalent period to the 7th postnatal day in a rat. However, we do know that similar neurodegeneration and behavioral abnormalities have been demonstrated in primates.^{3,4}

Thus, a huge question for our specialty, and for medical science, is whether these animal studies translate into human risk in children. This is difficult to unravel because children cannot ethically be randomized to receive an anesthetic or placebo. No child is anesthetized without a health reason. As a result, in observational trials it is difficult to separate the effects of the illness and surgery that made the anesthesia necessary from the anesthesia itself. Sun and colleagues have found that exposure to volatile anesthetics for hernia surgery at less than three years of age was associated with a more than two fold risk of diagnosis with behavioral or learning disabilities.⁵ The PANDA study is currently underway to address this question with a large multicenter trial with prospective observation. The GAS study will prospectively compare the neurodevelopmental outcome between infants anesthetized for hernia surgery with either sevoflurane or regional anesthesia.⁶ In a unique public-private partnership, the International Anesthesia Research



Pamela Flood, M.D.

"We are anesthesiologists, physicians with multidisciplinary skills. We are physicians perfectly positioned to assume a broad role in medical research."

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SAB Report: The Big Questions for Anesthesiology

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Society has partnered with the Food and Drug Administration to create the “SmartTots” initiative to help fund research to address this question. Discoveries from this research will not only inform our practice, but may provide fundamental insight into the relationship between environmental exposures and cognitive development in children.

There are similar concerns about anesthesia and cognitive injury at the other extreme of life, in the elderly.¹ As with very young children, older patients requiring surgery are more likely to suffer from coexisting disease. However even after correction for associated risk factors, surgery and anesthesia have been found to be associated with a decline in cognitive functions in the elderly.⁷ Once again, it is difficult to parse the effect of anesthesia from that of surgery and associated inflammation. However, our position as perioperative physicians places us in a unique position of being able to gather information on either side of the surgical/anesthesia intervention. This permits us to assess risk factors, test interventions, and study outcomes.

For example, we now know that post-operative delirium is a risk factor for post-operative morbidity and mortality. Postoperative delirium doubles the likelihood of death and increases the risk of dementia and institutionalization over a 22-month period after surgery.⁸ The etiology of post-operative delirium is unknown but alterations in GABAergic and or cholinergic transmission in the brain and/or neuroinflammation are thought to play a role. Further information as to the mechanism of the derangements in the central nervous system that underlie post-operative delirium will inform better prevention and treatment.⁸

In aged triple-transgenic Alzheimer disease mice, Tang and colleagues found that surgery-induced neuroinflammation resulted in microglial activation, amyloidopathy, and tauopathy.⁹ This suggests the possibility of increased risk to older humans who are at risk for the development of Alzheimer’s disease. Perhaps of greater importance, this work contributes to the development of animal models to study interventions to decrease neuroinflammation. Such models may lead to broad insights into prevention of Alzheimer’s disease, an enormously important health problem.

Returning to the earlier list of important questions, anesthesiologists all over the world are currently working toward these issues. Anesthesiologists at the University of Illinois are studying the mechanisms by which diabetes causes microvascular decoupling.¹⁰ Anesthesiologists at the University of Chicago are studying the role of the mu opioid receptor in promoting lung cancer.¹¹ which could inform a direct change in practice that could improve long term survival. Anesthesiologists at the University of Manitoba demonstrated better cognitive outcomes in patients with ischemic heart disease managed with percutaneous coronary intervention when compared to patients managed with coronary artery bypass grafting or medical management alone.¹² Members of the Anesthesia department at Columbia University are gaining

insight into the role of marijuana in automobile accidents.¹³ perhaps informing better legislation. Anesthesiologists at the Mayo Clinic are developing mechanisms for detecting drug diversion within the workplace.¹⁴ Anesthesiologists at the University of Illinois are exploring the use of lipid emulsions to treat drug overdose in suicidal patients.¹⁵

Anesthesiologists at the University of Washington are studying the relationship between nutrition and outcome following brain injury in children.¹⁶ Anesthesiologists at the University of Cairo studied the casualties resulting from violence in Tahrir Square during the Egyptian Uprising and provided important historical information.¹⁷ Anesthesiologists in Goma, Democratic Republic of Congo, examined the availability of resources to treat sepsis in Africa.¹⁸

Anesthesiologists are working on all of the “big questions” listed earlier, which initially might have seemed remote from our specialty. As anesthesiologists, our world is filled with “big questions.” By virtue of our clinical practice, and our scientific training, we are positioned to contribute to every aspect of medical science. As Dr. Eger observed, we have made our clinical practice so safe that the public sees little reason to invest in more research in anesthesia. We should be proud of that accomplishment. However, we have work ahead. Our new challenge is to use our skills to accomplish this same feat in every other aspect of medicine.

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EAB Report: Master's Programs in Education Available in U.S. for Faculty Interested in Developing Pedagogy Skills

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As learners, we all remember the joy and reward of an engaging teacher and their lessons. As teachers, these experiences fuel our motivation to create similarly appealing instruction for our own residents and students. In a similar way, dreary, concentration-depleting lectures are the cautionary tales of pedagogy. Aside from these moments of inspiration or boredom, teaching physicians often receive little formal instruction in education theory, application, or mastery.

Many faculty aspire to a deeper understanding of medical education, and several avenues exist to acquire skills in educational theory, research, and application. These include participating in education theme meetings organized by the Society of Education in Anesthesia or the ACGME for example. In addition, some departments¹ and medical schools have established structures often called “academies” to support teaching and faculty development in administration/leadership, curriculum, teaching, assessment, and advising/mentoring.²

Certainly, external pressures exist for increased professional training of clinicians in undergraduate and graduate medical education.³ This reflects the increasing demands of graduate medical education as with the Next Accreditation System and the milestones movement. Also, due to increasing clinical demands within many academic medical centers there is a growing proportion of “Clinical-Educators,” physicians whose specialized expertise lies in patient care and instruction of residents and medical students.⁴ The skill set of these educators includes developing trust-based relationship among learners, helping to formulate learning goals, assessing strengths and needs, monitoring their progress, and providing helpful feedback and advice.

For faculty interested in obtaining a formal Master’s Degree in Education, many options are available. Having such a list with program characteristics readily available may help faculty identify and then choose the school that fits their needs the best. We conducted a Google search for the terms “Master of Medical Education” and “Master of Education Health Professions.” As of September 2012, we identified twelve U.S. programs offering

Master’s training in medical education (Table 1, next page).

Though many programs have different formal names, we found many similarities. First, a blended curriculum is offered by many universities to accommodate physicians with clinical commitments and geographical restrictions. Students in blended programs complete online courses, with individual and group assignments to encourage multidisciplinary collaboration. Many blended programs require an annual or semi-annual, week-long retreat at the home institution to permit face-to-face meetings with classmates and faculty. Faculty for many master’s programs span the universities’ business, education, medical, and nursing schools.

The on-campus versions are similar to other graduate training with weekly classroom activities as well as group and individual projects. The curriculum itself is also similar across institutions. Each student must complete core courses in leadership, curriculum design, adult educational theory, instruction development, and scholarship. Once these are completed, electives are offered in various topics including research design, statistics, grant writing, educational measurement, medical simulation, test development and more. Each program also offers a variation on a common theme of individual mentorship and the completion of a thesis.

From our review of each program’s website, we list notable differences. The University of Illinois at Chicago has the most extensive and broad list of electives. Johns Hopkins divides its electives into two paths: educational leadership and educational research. The University of Pennsylvania divides its curriculum into four blocks with no electives. Vanderbilt University offers an executive program. The University of New England and Lake Erie College are both osteopathic schools.

One of our Stanford Anesthesia faculty members commented on the USC program: “Its focus is on graduate medical education. Its practical, learner centered, includes skills of leadership, scholarship and teaching, and has wide use of team teaching

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EAB Report: Master's Programs in Education Available in U.S. for Faculty Interested in Developing Pedagogy Skills

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Table 1: Master's Programs in Education Available in the U.S.

Institution	Location	Degree title	Website	Director	Program Delivery	Credits	Cost per credit
University of New England	Portland, ME	Master of Science in Medical Education Leadership	www.une.edu/com/mmel/	India Broyles, EdD (ibroyles@une.edu)	Online	33	\$660
University of Pennsylvania	Philadelphia, PA	Master of Education	www.gse.upenn.edu/med-ed/	Allison Ballantine MD, Med (ballantine@email.chop.edu)	Online	4 blocks	\$15,000 (per block)
Johns Hopkins University	Baltimore, MD	Master of Education in the Health Professions	education.jhu.edu/Academics/masters/MEHP/index.html	Toni Ungaretti, Ph.D. (toni@jh.edu)	On-campus or online	33	\$1200 (public), \$700 (Hopkins staff)
Vanderbilt University	Nashville, TN	Master of Health Professions Education	medschool.vanderbilt.edu/mhpe/home	John Shatzer, PhD (john.shatzer@vanderbilt.edu)	On-campus (executive)	36	\$1,250
University of Florida	Gainesville, FL	Masters Degree in Curriculum and Instruction with an Emphasis in Medical and Professional Education	education.ufl.edu/onmed/	Erik Black, PhD (ewblack@ufl.edu)	Online	36	not available
University of Pittsburg	Pittsburg, PA	Master of Science in Medical Education	www.icre.pitt.edu/degrees/ms_meded.html	Rosanne Granieri, MD (granierir@upmc.edu)	On-campus	30	\$1393 (out-of state), \$877 (in state)
Lake Erie College of Osteopathic Medicine	Erie, PA	Master of Science in Medical Education	lecom.edu/master.php/Master-of-Science-in-Medical-Education/49/2205/615/2729	Mark A. Terrell, EdD, MS, MA (mterrell@lecom.edu)	Online	32 (2 years)	\$8,690 (annual)
University of Cincinnati	Cincinnati, OH	Master of Education in Curriculum and Instruction	www.cincinnatichildrens.org/education/clinical/graduate/grad/masters/default/	Kadriye O. Lewis, EdD (kadriye.lewis@cchmc.org)	Online	30	\$1116 (out-of state), \$1101 (in state)
University of Illinois	Chicago, IL	Master of Health Professions Education	chicago.medicine.uic.edu/departments___programs/departments/meded/educational_programs/mhpe/	Illene Harris, PhD (ibharris@uic.edu)	On-campus or online	32	\$762 (online)
University of Iowa	Iowa City, IA	Master of Medical Education	www.registrar.uiowa.edu/registrar/catalog/medicine/medicaleducationprogram/	Kristi Ferguson, PhD (kristi-ferguson@uiowa.edu)	On-campus	30 (2-5 years)	\$9135 (in state, annual), \$25,299 (out-of state annual)
University of Houston	Houston, TX	Master of Education	medical.coe.uh.edu/	Bernard Robin, PhD (brobin@uh.edu)	On-campus	36	\$600 (in state), \$882 (out-of state)
University of Southern California	Los Angeles, CA	Master of Academic Medicine	keck.usc.edu/en/Education/Division_of_Medical_Education/Master_of_Academic_Medicine.aspx	Julie Nyquist, PhD (nyquist@usc.edu)	Online	32	\$1,420

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combining instructors who have clinical experience, leadership experience and/or educational expertise. There are 10 students each year from all over the U.S. with a vast majority being physicians, other students include pharmacist and program coordinator for example. The program requires two years if done fulltime." Appendix A has required courses to illustrate what a curriculum may look like for one of these master's programs.

Graduate training in education is warranted for many reasons including the recent shift in the classic education model promoted by Millennial learners, a new climate of technological advances in simulation and mobile platforms, ever-increasing patient safety standards, not to mention the evaporating apprenticeship model of 'see one, do one, teach one'.

Since there are limited amount of resources at each institution they need to be used effectively and efficiently. We would like to see those that complete a Masters degree, having studied both qualitative and quantitative methodologies of medical education research, accept the responsibility of properly studying teaching techniques and methods so that the optimal mix can be provided to residents. Only in this way will advances in medical education be made. Anesthesiologists undertaking additional training will be leaders in medical education not only within their departments but also in their medical schools.

Appendix A. Required Courses for USC Master of Academic Medicine

- Introduction to Academic Medicine Worldwide
- Becoming a Leader in Academic Medicine Worldwide
- Leading Change in Academic Medical Centers
- Competencies in Academic Medicine and Health I and II
- Professionalism in Academic Medicine and Health
- Accreditation and Program Evaluation in Academic Medicine
- Designing Research on Innovations in Academic Medicine
- Implementing Research on Innovations in Academic Medicine
- Field Work in Designing Innovations for the Health Professions

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Insights About Needle Sticks and Health Care From a ‘Wounded Warrior’: David L. Brown, M.D.

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The story which follows is about a survivor of a critical illness, and this story and the video which this text complements tell a compelling story about needle sticks, critical illness, and the vital role of physicians and team care in acutely ill patients.



David L. Brown, M.D.

Dr. David Brown contracted Hepatitis C during a time when it was an almost unknown entity. In his role as staff anesthesiologist for the Air Force at USAF Wilford Hall Medical Center in San Antonio, he provided anesthesia care for numerous trauma patients and transfused many units of blood while also experiencing a variety of needle sticks. This was common at the time when gloves were rarely worn during anesthesia practice and was not thought to have any adverse consequences. As Dr. Brown tells us in the video, there was no

evidence of any consequence until a routine preop lab test 10 years later revealed mildly elevated liver enzymes, which were subsequently attributed to hepatitis C. Initially, no therapy was recommended because not all hepatitis progresses to a more dangerous condition and the cure rate with treatment was low.

In fall 2011, the hepatology world began to use a three drug therapy including interferon, ribavarin and a protease inhibitor to eliminate Hepatitis C. Dr. Brown decided to “go for it” when told there was a 75 percent cure rate. His hepatologist suggested that he do so while he was still healthy, a choice that may have saved his life. The treatment course was seven months long. At five months into therapy, he developed Ebstein Barr sepsis, and multi-organ failure including ARDS, circulatory collapse, pancreatitis, dialysis-dependent acute kidney injury, and DIC which required a month in the ICU. He was intubated for a week, required norepinephrine infusions, and was close enough to death that DNR discussions were held with his family.

Going from provider to patient was a powerful experience for Dr. Brown. During hepatitis chemotherapy, he says that he participated in decisions, and under-estimated how sick he was.

Once in the ICU, he came to rely on the judgment and care from staff and fellows in the surgical ICU, which is within the Institute he chairs. He learned the incredibly important role of coordination of care, during a time when physicians from multiple specialties were all involved in his treatment. Weeks of critical illness resulted in a profound 45 pound weight loss, and simple things like being turned felt to him like his shoulders and hips were being dislocated. The delirium was particularly disturbing to a physician used to being in charge of departments. At one point, his suffering increased dramatically as he imagined that the alarms universal to the critical care setting identified an additional subject entering into an unethical research protocol he was leading. At a time when many thought he was dying and there was doubt about his brain function, he family noted occasional “rolling of his eyes” when something displeased him. Another remarkable element of this story was his rapid recovery. At least regarding brain function, he recovered from almost a month of unconsciousness and delusions “in one heart beat” and told his ICU nurse (in writing, since he was intubated) that “I’ve never been more alive”.

This story and the video which it complements are being told because Dr. Brown believes they contain important messages. Universal precautions and barrier devices are important, but easy to neglect in the context of high volume, high acuity anesthesia care. Physicians should remember how important it is to protect their own health, and faculty in anesthesiology residency

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Insights About Needle Sticks and Health Care From a 'Wounded Warrior': David L. Brown, M.D.

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programs should place high emphasis on “gloves, glasses, and universal precautions”. Another element is the central role of the anesthesiologist in coordinating high acuity health care. In this case, there were 8 or more specialties involved, but the central decision making was an anesthesiology-led Surgical Intensive Care Unit team. Finally, in an era when health care is becoming more and more technical, Dr. Brown has become impressed with the critical role of physician judgement in outcome. In numerous instances during this illness, individual physicians made choices that contributed to saving his life. His biggest ongoing concern is that the huge amount of health care resources that were expended to save his life might not be available, if cost and rationing become part of 21st Century healthcare as health care reform moves to more algorithmic approaches of care. The 7:15 minute DVD, available via the AUA website http://www.auahq.org/wmv_link.html is more than worth your viewing time for the lessons learned by a “Wounded Warrior”.

Editors note: This article arose when, participating in the early morning 2012 ASA run for the warriors, I was astonished to see Dr Brown actually running in the event. I knew he had been critically ill--and thought he still was intubated on a ventilator in Cleveland---and when asked about his participation in this quasi-athletic event, he quipped that he was running in the MOF division of the race. After Securing Dr Brown's permission I asked Dr Tetzlaff to write this article. I hope the accompanying video can be used as a resource for residents, and also faculty and staff, to gain a better appreciation of the importance of avoiding needlesticks. -WAK

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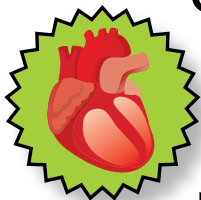
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