



# AUA

Association of University Anesthesiologists

# Update

Winter 2011

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## 2011 Rovenstine Lecture by Dr. Kapur: A Call to Step Up Leadership

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The Emery A. Rovenstine Memorial Lecture is the preeminent presentation at the ASA Annual Meeting, and for 2011 was given by Patricia A. Kapur, M.D., incoming CEO of the UCLA Faculty Practice Group and Executive Vice President of the UCLA Health System, a new position for her after serving as Chair of the UCLA Dept of Anesthesiology since 1996.

After being introduced by meeting chair Daniel Cole, M.D., Dr. Kapur stood at the podium, flanked by 41 different countries behind her, in the largest room (completely full) I have ever seen an anesthesiologist speak.



The talk was more the “classic style” Rovenstine Lecture with a philosophical bent, rather than a Refresher Course didactic talk. The main take-home points related to the specialty and its practitioners exercising leadership to see beyond the comfortable status quo, and to push our clinical practice as a profession in new directions with the changing economy.

Dr. Kapur indicated that this theme is not specific to academic practices, but departments in academic medical centers often are furthest along in adopting a broader profile in the institution. This will help show value and be well-positioned when bundled payments are to be divided up. The call to action was for academicians in particular to help figure out how to better stratify resource



*Alex Macario, M.D., M.B.A.*

“When the environment changes, one’s own past experiences may not be appropriate. Dispassionately assessing one’s environment to determine the true state of affairs, not what is hoped for, rings true for anesthesiology.”

use, for good and effective new delivery models, that optimize outcome at sustainable cost, with quality and safety.

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# 2011 Rovenstine Lecture by Dr. Kapur: A Call to Step Up Leadership

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Dr. Kapur pointed to the 2003 book titled *Deep Survival: Who Lives, Who Dies, and Why* by Laurence Gonzales, which describes lessons learned from analysis of those who survive difficult situations. Besides adequate preparation and having a plan, being able to properly perceive one's situation and take correct action while adjusting to changing circumstances is what is most needed. When the environment changes, one's own past experiences may not be appropriate. Dispassionately assessing one's environment to determine the true state of affairs, not what is hoped for, rings true for anesthesiology. As Dr. Kapur stated: 90 percent of barriers to change are mental, so an accurate mental map is crucial.

As Dr. Kapur spoke, I jotted down some other notes:

- Anesthesiologists are hard-wired to assess and manage problems.
- The truth is, every specialty group tries to expand its scope of practice.
- Revise supervision ratios according to case risks.
- What are the acute care needs of patients that are not being met?

- Who can step up to lead institution-wide quality improvement projects?
- Does the current name of the specialty limit our potential?
- Are we practicing at the top of our license?

Dr. Kapur also referenced an August 12, 2011 article in the *Los Angeles Times* that describes how the Argentine gaucho is shifting away from cattleman to farmer of soybean crops. This is a more pragmatic business because of new and global economic realities. Dr. Kapur quoted, "...economic reality...has trumped starry-eyed dreams of a storied past...The world [has] change[d] and your mind has to be open to it."<sup>1</sup>

Previous Rovenstine Lectures have addressed research (Reves), databases (Tremper), and professional excellence (Miller). Dr. Kapur answers the question, "Where should we position ourselves for the 21st century?" by articulating an updated mental map to courageously lead the comprehensive perioperative care of patients.

## References:

1. <http://articles.latimes.com/2011/aug/12/world/la-fg-argentina-gaucha-20110812>

## Plan to attend the 2012 AUA Annual Meeting hosted by the Anesthesiology Institute of Cleveland Clinic

### AUA 59<sup>th</sup> Annual Meeting

May 17-19, 2012

InterContinental Hotel Cleveland – Cleveland, Ohio

To make your room reservations at the InterContinental Hotel go to:  
<http://www.ichotelsgroup.com/intercontinental/en/gb/dates-preferences/CLEHA?groupCode=RBB>

### The 2012 Annual Meeting abstract submission site is open at:

<http://auahq.org/abstract-submission-spring-2012.php>.

The abstract submission deadline is  
Monday, February 6, 2012.



# EAB Report: Academies of Medical Educators: An Organizational Structure That Returns the Spotlight to Education

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## Pressures on the Educational Mission: A Rationale for Academies

Since the middle of the 20<sup>th</sup> century, increasing pressures on academic health centers have threatened the traditional academic missions of patient care, research and education.<sup>1</sup> There are several reasons why the educational mission is most susceptible to these pressures at the department level. Clinical activity serves as the major economic engine for departments, and trainees (especially medical students) reduce clinical efficiency. Research grants bring prestige and resources, and significant investment is required to develop new investigators. Medical student education is particularly susceptible to undervaluation. Medical students are not members of a department, and faculty may feel less motivated to teach them, as compared to a department's clinical residents and fellows. Irby and colleagues remarked:

*"... as long as departments are the primary locale of faculty incentives and support, we contend that the broader educational mission of schools of medicine will never flourish. Many good educators simply are unable to spend time away from research or patient care to teach or direct medical student courses. This structural problem requires a structural remedy [that] could include the creation of a new organizational entity dedicated to education and independent but supportive of existing departments."<sup>2</sup>*

## Academy Movement: Key Characteristics

These entities, called *academies*, are formal organizations of distinguished educators whose goal is to advance the educational mission of the institution. A 2004 report summarized key features of eight existing academies at the following institutions: Medical College of Wisconsin, University of Illinois at Chicago, Mayo Clinic College of Medicine, University of California-San Francisco School of Medicine, University of Florida College of Medicine, Baylor College of Medicine, Harvard Medical School, and Mount Sinai School of Medicine.<sup>2</sup> These characteristics distinguished academies from more general faculty development programs:

- A mission to support and advance educators, provide faculty development, promote curriculum development, advance educational scholarship and offer protected faculty time for education purposes;
- Membership consisting of distinguished educators selected through rigorous peer review that evaluates contributions to teaching, mentoring, curriculum development and leadership, and educational scholarship;
- Formal school-wide organizational structure with designated leadership; and

- Dedicated resources for funding mission-related initiatives.

While the academies described in the report shared most of these characteristics, there was considerable variation on specific issues such as size of membership (ranging from 17 to 250 members), funding sources (e.g., dean's office, institution, endowment, gifts) and budget (ranging from \$10,000 to \$500,000 annually). There are other ways for academies to impact the educational mission. As a new medical school organization, an academy can symbolize the high value and esteem that the institution places on its educational mission. In addition, academies can play a political role as a non-departmental advocate for the activities of teaching faculty.<sup>3</sup>



Manuel Pardo, Jr., M.D.

## Academies: Growth and Impact

Because academies are a recent development, the overall impact on the educational mission of medical schools is difficult to determine. A 2010 survey of U.S. medical schools revealed the rapid increase in academies over the last decade and highlighted benefits provided by academies to individual faculty and the institution.<sup>4</sup> Of the 122 medical schools responding to the survey, 36 reported having an academy. Almost two-thirds of the academies began after 2003. Furthermore, an additional 34 schools were either planning or considering an academy. Benefits to individual academy members that were present in over one-third of academies included:

- School-wide recognition.
- Networking and collaboration.
- Opportunities for faculty development.
- Weight in promotion/advancement.
- Mentoring for career and skill development.
- Monetary awards.
- Funding for educational development (e.g., educational courses, curriculum development resources, educational research).

Services provided to medical schools by over one-third of academies included:

- Educational seminars/grand rounds.
- Peer review for educators at the school.
  - Educational consultation to educational decision-makers (e.g., dean of education, curriculum committees).
  - Educational scholarship opportunities for the school.

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# EAB Report

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When comparing newer to older academies, a few trends emerged. Newer academies were more likely to report goals of stimulating innovation, developing faculty education skills, providing mentoring and enhancing collaboration.<sup>4</sup> While academies show promise as a new approach to advancing the educational mission of medical schools and academic medical centers, their long-term impact remains to be seen.

## Other Academies

The term “academy” dates back to the time of Plato and now has many meanings. Most involve a group of scholars sharing a common purpose. Other academies that may be of interest to AUA members include the following:

**FAER Academy of Research Mentors:** This academy serves as a resource for the development of new mentors and role models in academic anesthesia. Members must demonstrate outstanding contributions to the development of anesthesiologist investigators. The main membership criteria is the quantity and quality of an individual’s mentees.<sup>5</sup>

**Clinical Academies, University of Bristol Medical School:** Bristol’s medical school was challenged to deliver its clinical curriculum in the face of pressures to deliver clinical service targets, combined with a large influx of new students. They developed a clinical academy model featuring decentralization of all aspects of clinical medical education. Seven clinical

academies were formed, with each academy offering the full range of clinical training.<sup>6</sup>

**The Academy of Medical Educators, United Kingdom:** This national organization was established in 2006 as the professional home for all those involved in medical education. It aims to provide leadership, promote standards and support all those involved in the academic discipline of medical education. Its organizers hope that the academy will “provide the critical mass needed to move medical education on to the next stage of development.”<sup>7</sup>

## References:

1. Ludmerer KM. *A Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care*. Oxford University Press, New York, 1999.
2. Irby DM, Cooke M, Lowenstein D, Richards B. The academy movement: A structural approach to reinvigorating the educational mission. *Acad Med*. 2004; 79:729-36.
3. Dewey CM, Friedland JA, Richards BF, Lamki N, Kirkland RT. The emergence of academies of educational excellence: A survey of U.S. medical schools. *Acad Med*. 2005; 80:358-65.
4. Searle NS, Thompson BM, Friedland JA, et al. The prevalence and practice of academies of medical educators: a survey of U.S. medical schools. *Acad Med*. 2010; 85:48-56.
5. FAER website <http://www.faer.org/about/mentor.html>. Accessed on November 1, 2011.
6. Mumford DB. Clinical academies: innovative school-health services partnerships to deliver clinical education. *Acad Med*. 2007; 82:435-40.
7. Bligh J, Brice J. The Academy of Medical Educators: a professional home for medical educators in the UK. *Med Educ*. 2007; 41:625-7.

**P**      *Progress*

The amount of effort expended multiplied by the square of the ratio of scientists to managers:

$$P = E \times (S/M)^2$$

1 unit effort, 2 scientists, 1 manager:	1 unit effort, 1 scientist, 2 managers:
$P = 1 \times (2/1)^2$ = 4 progress units	$P = 1 \times (1/2)^2$ = 0.25 progress units

# SAB Report: Registry Research: The New 'Frenemy'

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Over the past two decades, we have experienced an explosion of observational registry research. Causes are multifactorial but include increasing difficulty and cost of conducting adequately powered randomized trials — especially those designed to evaluate rare outcomes. Many treatments and exposures of interest cannot be randomized, such as smoking, obesity, and time or date of surgery. And, finally, anesthesiologists are becoming perioperative physicians and thus now need to evaluate patient-centered perioperative outcomes, quality improvement, resource utilization, risk-adjusted outcome reporting and clinical prediction modeling.

The switch from paper to electronic records has markedly enhanced our access to important data, and thus our capacity for observational research. Methodological improvements in statistical and econometric techniques have simultaneously

“Treatments and outcomes in most registries suffer from varying degrees of bias. Selection bias results when the population of interest is non-randomly selected from the population of interest.”

broadened the array of questions we can ask. That said, observational research can lead to dubious conclusions if not implemented and interpreted appropriately. Major implementation problems include:

**1. Data dredging:** No one would start a randomized trial without a distinct hypothesis and defined primary outcomes. In contrast, it remains common that investigators “fish” for interesting results in retrospective data sets. The danger with this approach is that spurious associations are common — and often simply wrong. Registry research, just like any other research, needs to be hypothesis-driven and based on an *a priori* analysis plan.

**2. Statistical methodology:** For example, the use of multivariable regression with stepwise variable selection leads to results that are extremely difficult to replicate. Likewise, ignorance of intra-subject correlation yields overly optimistic estimates of the precision of treatment effects. Newer and more sophisticated methods including propensity score techniques and mixed effects modeling are better suited for evaluating treatment effects in registries.

**3. Confusion about confounders versus mediators:** It is important to distinguish between which variables are potentially confounding and those that are actually mechanisms by which the exposure of interest may affect outcome (i.e., mediators). The distinction is critical because while statistically controlling for known confounders is obviously necessary, adjusting for mediators in the causal pathway can reduce or eliminate real associations. For example, diabetes causes cardiac disease, and heart disease is a common cause of death in these patients. Statistical adjustment for heart disease severity would thus reduce the apparent mortality of diabetes. Therefore, a “kitchen sink” adjustment – all too frequently seen in studies these days – often results in an underestimate of true treatment effects.

**4. Unrecorded confounders:** It is usually possible to statistically compensate – at least to a degree – for known confounders. The problem is that most registries, especially administrative datasets primarily designed for billing, simply lack important confounding details. Even the best of these registries lack important detail. For example, there is almost no anesthetic detail in the National Surgical Quality Improvement Program registry, and the registries of the U.S. Agency for Healthcare Research and Quality’s contain little clinical information. There is no good way to statistically compensate for critical information that is simply missing.

**5. Selection and measurement bias:** Treatments and outcomes in most registries suffer from varying degrees of bias. Selection bias results when the population of interest is *non-randomly* selected from the population of interest. For example, patients given regional anesthesia are likely to differ substantively from those given general anesthesia. The factors that led to the clinical choice of anesthetic strategy (i.e., tumor stage) may just as well influence the outcome of interest (say, mortality). Similarly, measurement bias results when outcome assessments are *non-randomly* influenced. For example, patients at greater risk for acute kidney injury will have creatinine measured more often, and therefore kidney disease will more often be detected in this group.

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# Outcomes of Mentorship Highlighted at ASA

Denham S. Ward, M.D., Ph.D.  
President, Foundation for Anesthesia Education and Research

Whenever I return from the ASA annual meeting, I am filled with energy, ideas and a deeper appreciation for the people and organizations that make FAER's mission possible. Some of my favorite parts of the annual meeting are the critical outcomes of mentorship we witness each year.

Specifically, the FAER Academy of Research Mentors in Anesthesiology hosted its annual workshop at the meeting. There, attendees learned helpful information about obtaining research funding. Afterward, several young anesthesiologists stopped by the FAER booth to tell me how much they learned from the workshop. They were inspired and energized. This event followed the outstanding job the academy did at the spring 2011 AUA meeting, where individual academy members were matched with junior faculty members presenting posters to provide constructive feedback. (Look for this again at the AUA meeting in Cleveland.)

Another example of the importance of mentorship is the work of Michael J. Joyner, M.D., who received the 2011 FAER Mentoring Excellence in Research award at ANESTHESIOLOGY 2011 in Chicago. The award recognized Dr. Joyner's sustained career commitment to mentoring and the significant positive impact he has made on the careers of his mentees. (Several of his former fellows are now establishing independent research laboratories at top institutions in Canada, Europe, Japan and the United States.)

Dr. Joyner's success illustrates the importance of not only having a mentor, but being a mentor as well. In addition to this award, Dr. Joyner gave the 11<sup>th</sup> Annual FAER Honorary Research

"The number of mentors, department chairs and program directors who attended the MSARF Symposium was outstanding. That level of participation encourages careers in investigative anesthesiology by demonstrating to the students the supportive network they will find in an academic career."

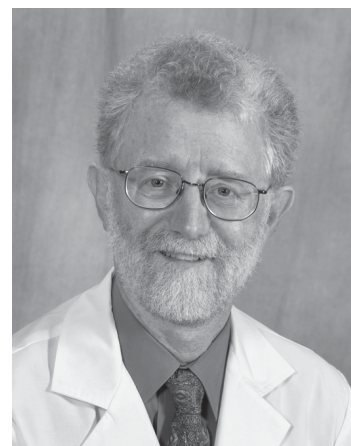


FAER MSARF Symposium at 2011 ASA Annual Meeting.

Lecture on the limitations with current "omic-based" approaches to biomedical research.

The final example of the importance of mentorship shown at ASA can be seen through future anesthesiologists: our devoted medical students. FAER's Medical Student Anesthesia Research Fellowship (MSARF) program serves both students and anesthesiology departments by matching students with a host program and mentor for a summer research project.

Through their MSARF experience, students interested in investigative anesthesiology have the opportunity to conduct research at a different school, meet other physician investigators and potentially begin a mentor relationship. Fifty-six students (out



Denham S. Ward, M.D., Ph.D.

of 110 who applied) participated in the 2011 program.

The MSARF program concludes each year with a symposium of poster and oral presentations at the ASA Annual Meeting. This event infuses our specialty with renewed energy and passion for research.

The number of mentors, department chairs and program directors who attended the MSARF

Symposium was outstanding. That level of participation encourages careers in investigative anesthesiology by demonstrating to the students the supportive network they will find in an academic career. (It also might mean that many of these students were also being recruited already!) Here are a few examples of the very interesting research done by these students:

**Damoon Rejaei**, from the University of Vermont, spent his summer at the University of Wisconsin in the laboratory of Robert Pearce, M.D., Ph.D., studying the "Effects of Novel Intravenous Fluorocarbon-based Emulsions of Sevoflurane in Canines." They looked at intravenous sevoflurane solubilized by a fluorinated surfactant polymer with added glucose moieties to see if the hypersensitivity reactions seen with other emulsions could be prevented. Although the emulsion had the desired anesthetic effect, there was still a strong anaphylactic or anaphylatoid hypersensitivity reaction in their dogs. Damoon told me he had a great experience in Bob's lab.

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**Alexander Badulak**, from the University of Pennsylvania, studied the role of “Oxygen-sensing Prolyhydroxlyases (PHDs) in Acute Kidney Injury” in the laboratory of Holger K. Eltzschig, M.D., Ph.D. and Almut Grenz, M.D., Ph.D. at the University of Colorado, Denver. He studied gene target mice for three different oxygen-sensing PHD deletions. They found that a selective phenotype in PHD1  $-/-$  mice had improved renal function following acute kidney injury during ischemia. This finding may open the way to develop PHD inhibitors as novel therapeutic agents to treat acute kidney injury. Stay tuned – it sounds like there may be some exciting results coming.

Not all the research experiences were basic science. **Maleeha Mohiuddin**, from the University of Missouri-Kansas City, studied with Paloma Toledo, M.D., M.P.H. and Cynthia Wong, M.D. at Northwestern University’s Feinberg School of Medicine. Their study “Racial/Ethnic Differences in Health Literacy and Use of Labor Neuraxial Analgesia” explored whether patients

with a low health literacy score would be less likely to utilize neuraxial analgesia for labor. Interestingly, they found after interviewing 100 patients that despite adequate health literacy, the knowledge and use of neuraxial analgesia was the lowest among minority patients. Improved prenatal education may play a key role in helping these patients understand options for labor analgesia.

In order to help these students begin an exciting investigative career in anesthesiology, it obviously takes much financial support. FAER is grateful for AUA’s contribution and the support of AUA members as individuals. With your continued help, FAER will work to advance medicine through education and research in anesthesiology.

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## SAB Report

*Continued from page 5*

**6. Interpretation:** Analyses of observation at best yields associations. These associations can be valuable. For example, rare conditions such as malignant hyperthermia may simply be impossible to study prospectively. Associations also guide the design of randomized trials and help identify interesting treatments and effect sizes. That said, it is invalid to draw cause conclusions from observational analyses – no matter how tempting. A related problem is that with very large datasets, it is often possible to identify highly statistically significant results that are of questionable clinical importance.

Anesthesia departments are increasingly implementing anesthesia information management systems. These are being paired with hospital-wide databases, including laboratory, blood bank and billing records to produce dense registries that facilitate addressing a broad array of important perioperative

questions. Robust and efficient extraction and analysis of these databases are enhanced by multi-skill research teams that include clinicians of various specializations, biostatisticians, economists and database experts. Equally importantly, there is increasing understanding of the value and pitfalls of registry research, and the analytic approaches and techniques needed to avoid spurious conclusions.

Even better, there are now two major national initiatives to mesh data from practices across the country. These super-registries will have the volume to answer questions that cannot be addressed even at the largest centers. Our specialty – and perioperative medicine in general – will be enhanced by establishment of large national and even international collaboratives. Our ability to evaluate rare outcomes and conduct comparative effectiveness research will be markedly improved by development of high-quality national registries.



# AUA

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