



Ohio State University  
Department of Anesthesiology

2009 ANNUAL REPORT

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Department of Anesthesiology  
2009 Annual Report

July 1, 2008 – June 30, 2009

Department of Anesthesiology  
The Ohio State University College of Medicine  
Columbus, Ohio

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## Overview



### **Ronald L. Harter, MD**

Jay J. Jacoby Professor and Chair

Vice Chair of Education and Professional Development

*Anesthesiology: Improving people's lives through innovation in research, education and patient care.*

In the Department of Anesthesiology, we have modified The Ohio State University Medical Center mission statement as presented above. It is simple, clear and compelling. In 2009, we in the Department of Anesthesiology have made great strides forward to achieve this mission.

In research, we continue to invest in our people and our infrastructure. Our progress in basic and clinical research is measurable. In 2008-2009 our growing research team included clinical research coordinators, a technical editor, clinical research assistants, technicians, National Institutes of Health (NIH) road map Fellows, several externally-funded PhD students in the Ohio State Biophysics program and Molecular, Cellular and Developmental Biology (MCDB) program, and a foreign national research Fellow (MD/PhD). We have 13 Principal Investigators, many co-investigators, over 20 research personnel (PhD students, Fellows, associates), and additional medical students and residents engaged in research. This level of activity has resulted in a significant record of peer-reviewed manuscripts, case reports, book chapters and abstracts presented at local, regional, national and international meetings and in higher impact of our publications. Some of our abstracts have received scientific awards at international meetings.

This level of activity and commitment to research is also supported by a significant level of research funding in the department – 2009 represents the fourth consecutive year of new and additional extramural funding in the department.

There was new and continuing extramural funding for the period 7/1/2008 to 6/30/2009 for nearly \$800,000 from 11 multi-center clinical trials or clinical studies, one NIH R01 grant, and one Society of Cardiovascular Anesthesiologists grant. In addition, the total awarded to the Department of Anesthesiology from 7/1/2009 to 3/31/2010 was \$918,172 in new grants (according to PI Portal data).

In addition, last year, our researchers and physician scientists submitted a total of 19 grants with 12 awarded. Four NIH proposals were submitted with one American Recovery and Reinvestment Act (ARRA) grant funded during 7/1/2008 to 6/30/2009.

During 7/1/2009 to present time, our faculty members submitted or have pending NIH proposals for \$6,188,934.

To support this team and our growing research program, we have built a new clinical research processing lab, recruited key research personnel, and developed a clinical research office and conference area for our anesthesia research team.

We also linked up our junior tenure track faculty with senior NIH-funded mentors in the Biomedical Research Tower (BRT) and identified shared research space to accommodate their growing needs. One physician scientist recently (2010) received a Clinical and Translational Science Award (CTSA) and another just received a respectable score on a new R01 grant.

Investment in our growth and development as an academic department is done with fiscal responsibility and accountability – at least 50% of our research is supported by extramural funding or other cost-sharing mechanisms, and we plan to continue to improve on this in a step-fast pace.

Our goals for next year are to focus on extramural funding, improve our record of quality, have high impact publications, and obtain additional NIH funding, including translational studies. Recruitment of an NIH-R01-funded scientist is in process. NIH NIDDK studies have received continuous funding on one or multiple R01-type grants for the past 18 years; we also serve on NIH study sections. We have set the bar high in our department and 2009 established new levels of productivity and funding. Our long term goal is to align ourselves with the OSUMC mission to be a top 20 anesthesia department by 2015.

Education is fundamental to the mission of Ohio State's Medical Center and of our department. Our faculty members take extraordinary pride in our training program, and for good reason. Since 2004, 57 of our 60 resident graduates have passed their written board examination on first attempt, a 94% pass rate, which compares favorably to the 84% pass rate nationally for the same interval. Our program is actively engaged with preparation for its accreditation site visit from the Accreditation Council for Graduate Medical Education (ACGME) this year. Our resident graduates continue to distinguish themselves and represent our department and our specialty well. Our 2009 resident graduates are no exception, as three will join our faculty, four will pursue fellowships in anesthesiology subspecialties, and three will pursue excellent private practice opportunities.

Over the past year, Andy Roth, MD was named associate program director for the Department of Anesthesiology. Dr. Roth is a graduate of the anesthesiology residency program at Ohio State, and has infused a refreshing combination of enthusiasm and experience to the leadership of the residency program, as evidenced by his selection in June by our residents as their "Teacher of the Year." Following our ACGME core residency site visit in July, Dr. Roth will be recommended to the GME Committee and to the ACGME for appointment as residency program director. He is well suited to serve in this vital role.

Following the change in directorship of the residency program noted above, I plan to remain actively engaged in resident education. I will be completing my service as the chair of the Committee on Residents and Medical Students for The American Society of Anesthesiology in the fall of 2009, a role I have held since 2002. I look forward to the opportunity to guide and mentor members of our faculty as leaders in education at the national level in the coming years.

Once again, we successfully filled all of our available positions through the National Resident Matching Program. All 11 of our matched applicants show tremendous promise in developing into outstanding anesthesiology residents. I am confident they will all ultimately become fine anesthesiologists.

Mark Gerhardt, MD serves on the American Board of Anesthesiology as one of precious few oral board examiners practicing in the state of Ohio. We are striving to identify other outstanding educators in this department who will pursue this path and join Dr. Gerhardt in that vital role in the coming years.

Ritu Kapoor, MD, Andy Roth, MD, and others in our faculty continue to expand and refine the role for anesthesia simulation education within our curriculum, using clinically-based scenarios in anesthesiology management to enrich and enhance the education of medical students and residents in anesthesiology throughout their training. Our simulation education center is among a select number of such centers registered with the American Society of Anesthesiologists' directory of simulation centers.

The residency program presented its third annual CA-2 (PGY-3) retreat on practice management in the spring. In addition, a number of our residents presented research abstracts and case reports at regional and national meetings.

This year, we recruited our first Fellow in neuroanesthesiology, Katie Figg, MD, adding Ohio State to a short list of programs nationally offering such a training opportunity. Dr. Figg will join our faculty upon completion of her fellowship training. In addition, we have recruited our first cardiothoracic anesthesiology Fellow, Luke Mitchel, MD, since we gained ACGME-accreditation for the fellowship. In addition, we are training a Fellow in our ACGME-accredited pain medicine fellowship, Mike Evers, DO. Dr. Evers also plans to return to our faculty upon completion of his fellowship. The lone ACGME-accredited adult anesthesiology fellowship not currently offered in our department is critical care. We have recruited two anesthesiologist intensivists, Tom Papadimos, MD and Deven Kothari, MD, who join Tom Reilley, DO to provide a strong intensivist faculty core that will allow us to pursue accreditation of that fellowship in the coming year. We also trained our inaugural regional anesthesia Fellow last year, and seek to recruit additional Fellows into that fellowship in the coming years, as well as into our obstetrical anesthesiology fellowship.

This past year has presented a tremendous challenge to our department, as we have worked diligently to keep pace with the steady growth of services that require our care

and expertise—not only in the operating suite, but literally throughout the entire medical center. In addition, we are preparing for a new site of surgical and anesthetic care: Ohio State’s Eye & Ear Institute at Gowdy Fields. The medical director for the operating rooms at that facility will be John Rogoski, DO. I am confident that he will help to create an environment of safe, excellent, and efficient ambulatory surgical care that will be the envy of our competition, both locally and nationally.

Our clinical service continues to grow. Our department provided care for more than 50,000 cases, including the management of more than 6,000 cases of acute and chronic pain, more than 4,000 obstetrical procedures, and more than 4,000 preoperative assessments at the OSUMC Preoperative Assessment Center (OPAC). The breadth of services provided at OSUMC requires the highest level of clinical skill among our faculty; its depth requires a strong work ethic, coupled with a desire to provide consistently outstanding care every hour of every day. This growth in clinical volume throughout OSUMC has created opportunities to add additional skilled practitioners to our department. In addition to the anesthesiologist intensivists listed above, we have recruited and are continuing to recruit anesthesiologists with expertise in pain management, neuroanesthesiology, thoracic anesthesiology, ambulatory anesthesia, and other areas of clinical and academic expertise, allowing us to further build upon our fine faculty.

This has been an important year for the department. A complex series of events have produced frequent turnover of leadership in this department, a detailed account of which is outside the scope of this report. However, it is undoubtedly true that such frequent changes have presented numerous and significant challenges to this department. Despite those challenges, the members of this department have remained committed to caring for our patients, educating our residents and students, and conducting scholarly inquiry within our discipline.

I am extremely excited about the opportunity I have had to serve as interim department chair during most of the past academic year, and am humbled and optimistic as I lead this department to the future, beginning my service as the Jay J. Jacoby MD, PhD, Professor and Chair of the Department of Anesthesiology at Ohio State. As the Medical Center continues to demonstrate its excellence and eminence in clinical care, education and research, I am confident that the Department of Anesthesiology will become increasingly engaged in those endeavors.



## Administration



**Steven S. Smith, MA**  
Director, Administration

In early 2009, the Department of Anesthesiology and OSUMC administration came together to develop a plan to improve turnover times and overall anesthesia efficiency. After several months of discussion, a decision was made to increase the staffing levels of the University Hospital anesthesia technicians from 5 to 15. With the leadership of Michael Smith, manager anesthesia services, all of the new full-time positions have been filled. We anticipate that the part-time weekend positions will be filled and the staff fully trained sometime in late March 2010. In the short period of time we have had our new anesthesia technicians, the department has seen positive changes in productivity and overall quality of patient care by ensuring that all anesthesia equipment and machines are properly cleaned and maintained before, during, and after cases. The growth has given our department the ability to lower the ratio of operating rooms per anesthesia technician and allows our department to create a system that is viable for today's health care advancements. With this new system in place, our department is able to carry out our institution's mission of personalized health care.

Through education and continued experience, the responsibility of anesthesia technicians at The Ohio State University Medical Center will play a more pivotal role in patient care. Our future goal is to have our technicians certified by the American Society of Anesthesia Technologist and Technicians (ASATT). The requirements to become an anesthesia technician at our institution will become more selective with the ASATT certification, allowing our entire staff in the Department of Anesthesiology to be recognized as healthcare professionals.

## Research



### **Fedias L. Christofi, PhD**

Professor, Anesthesiology  
Professor, Physiology and Cell Biology  
Vice Chair of Research

It is my pleasure to provide a brief report on our progress in research in 2009. I am pleased to report that we continue to experience growth in research in the following areas:

1. We further developed our research infrastructure for both basic and clinical research (please see later descriptions).
2. In 2007, we provided start-up funds, scientific mentors, protected non-clinical time, laboratory space, and the research infrastructure for three physician scientists on the RTT and one basic researcher on the RTT to develop their independent research programs towards securing extramural/NIH funding. Their progress in 2008-2009 can be measured by their productivity in quality publications, new funding, development of new animal models of disease, and their continuing efforts to submit National Institutes of Health (NIH), industry, or other grant applications.
3. Expansion of basic and clinical research programs and interdisciplinary collaborations involving Children's Hospital, Dorothy M. Davis Heart and Lung Research Institute (DHLRI), neuroscience and spinal cord injury, wound healing and surgery, Physiology & Cell Biology.
4. Continued participation in the training of PhD students in other programs (e.g. OSBB program, MCDB program, and MD/PhD medical scientist program); foreign national Fellows; students on foreign national training programs; and NIH road map Fellows at OSU.
5. Experienced significant growth in newly-funded multi-center national clinical trials relevant in anesthesiology.
6. For the fourth year in a row, we show a steady upward trend in our funding from extramural agencies.
7. We invested in research with fiscal responsibility.

**Progress Highlights*****Funding Summary***

**Total awarded to the Department of Anesthesiology from 7/1/2008 to 6/30/2009 = \$790,237**

- 11 clinical studies = \$499,869
- 1 NIH = \$270,368
- 1 SCA = \$20,000

**Total Awarded to the Department of Anesthesiology from 7/1/2009 to 3/31/2010 = \$918,172**

- 16 clinical studies = \$519,452
- 2 NIH = \$356,808
- 1 SCA = \$20,000
- 1 Research Institute at Nationwide Children's Hospital = \$18,412
- 1 Teleflex Incorporated medical education grant = \$3,500

**Comparative Analysis for 2008/2009 and 2009/2010**

Category	# Investigators		Total amount of award		Number of active studies		Number that received award	
	6/30/08-7/1/09	7/1/09-present	6/30/08-7/1/09	7/1/09-present	6/30/08-7/1/09	7/1/09-present	6/30/08-7/1/09	7/1/09-present
Clinical studies	3	5	499,869.00	519,452.00	17	19	11	16
NIH	1	1	270,368.00	356,808.00	1	2	1	2
SCA	1	1	20,000.00	20,000.00	1	1	1	1
Research Institute Nationwide Children's Hospital		1		18,412.00	0	1		1
Teleflex Incomp - education grant		1		3,500.00	0	1		1
<b>Total amount</b>			<b>790,237.00</b>	<b>918,172.00</b>	<b>19</b>	<b>24</b>	<b>13</b>	<b>21</b>

**Grants Submitted But Not Funded From 7/1/2008 to 6/30/2009**

- Total number submitted = 19
- Total proposals awarded = 12
- Total proposals not funded = 7 (\$4,143,094)
- Clinical proposals submitted = 10 (all funded)
- NIH proposals submitted = 4 (awarded = 1)

- Other small grants submitted = 5 (awarded = 1)

#### **During 7/1/2009 to Present Time**

- NIH proposals submitted and pending = \$6,188,934
- Other small grants (1 awarded; 1 pending)

#### ***Summary of Scholarly Publications***

- Publications (peer-reviewed journal articles, case reports) = 15
- Chapters in books = 9
- Monographs = 1

Average IF = 2.98 (16 faculty were listed as authors)

#### **Number of Abstracts Presented at Meetings (total 36 abstracts)**

1. Experimental Biology – 4
2. Second meeting of Intraoperative Imaging Society – 1
3. OSUMC Research Day – 9
4. Midwest Anesthesia Residents Conference (MARC) – 3
5. American Society of Anesthesiologists (ASA) – 7
6. International Anesthesia Research Society (IARS) – 7
7. American Society of Regional Anesthesia and Pain Medicine – 2
8. Society for Neuroscience 35th annual meeting – 2
9. International Society for Magnetic Resonance in Medicine 17th scientific meeting and exhibition – 1

#### ***Narrative Description of Key Benchmarks of Success***

**Anesthesia research team:** In the past 2 years we recruited a clinical research coordinator with additional experience in running a clinical research lab, a new technical editor, several postdoctoral research Fellows (with clinical backgrounds), 2 NIH road map Fellows, and 4 new PhD students (bringing our total to 6 currently). Overall, there are 13 principal investigators (PIs), 8 co-PIs, 22 research personnel (PhD students, Fellows, associates), and many medical students and residents engaged in clinical or basic research in our department. For the first time, we had 5 senior residents who requested and received block time to conduct research. A significant number of residents, students and Fellows have co-authored abstracts, as well as made scientific and case report presentations at regional and national meetings this past year. Some are beginning to get published in peer-reviewed journals.

**Internal jump-start funds:** We will continue the internal jump-start fund mechanism to support small seed grants for clinical or basic research of our faculty/residents.

1. Hamdy Awad, MD received internal seed funds to initiate a collaboration with DHLI investigators on wound healing. As a result of pilot preliminary data obtained, Dr. Awad is now the recipient of a Center for Clinical and Translational Science (CCTS)/CTSA funding award for pilot studies (UL1RR025755 through National Centers for Research Resources (NCRR). The funds are intended to encourage new multidisciplinary research groups to address integrated solutions to complex clinical and translational problems and are designed to support new research teams. Roy Sashwati, PhD is Dr. Awad's senior advisor on the study. The award was 1 of 8 applications selected out of 45 for funding. The clinical/translational study investigates the local wound environment in regulation of pain and wound healing in post-sternotomy cardiac surgery patients. NIH R01 and R21 applications are planned in the near future.
2. Funds to support an investigator-initiated clinical trial by one of our junior faculty on RCT aimed at improving the standard of care for patients undergoing cardiac surgery to protect renal function is well on its way, with ~ 50+ of 200 patients enrolled to date.

**Technical editor:** We recruited a new technical editor in 2008 who is preparing our first quarterly newsletter, updating and modernizing the research component on the anesthesiology Web site, editing and submitting journal articles, reports and abstracts, and providing support for electronic grant submissions.

**MOU with Center for Biostatistics:** We are continuing to provide biostatistics support for our research faculty and staff in the Department of Anesthesiology through the continuation of a signed MOU with the Center for Biostatistics and David Jarjoura, PhD; this has proven to be extremely beneficial to our scientists, residents, students, Fellows, and clinical research staff to provide team support of our research programs and education for the residents. It is beginning to payoff in quality publications, and more of our physician scientists are utilizing the service for developing experimental design in clinical studies and IRB submissions, analysis of large data sets and data mining in gene array expression studies, and as a consulting service or collaboration on submitted, pending or funded NIH, CTSA or clinical-grant applications.

**More protected time awarded:** Non-clinical protected research time for 4 faculty members (3 on the RTT and 1 on the RCT) received ~ two days/week to pursue their research and develop their research programs; awarding of non-clinical research time with clear metrics of accountability has steadily increased since 2004.

**Journal articles with more impact:** In 2009, we are pleased to report that we published 15 journal articles with impact factors trending in the upward direction. The average impact factor in 2006 was 2.2, in 2007 it was 2.52, and 2008 2.721; in 2009 it was 3.00. The upward trend is encouraging. There were also nine book chapters and one book edited.

**Abstracts:** There were 36 abstracts presented at national or international meetings and published in the proceedings of their respective societies (American Society of Anesthesiologists, International Anesthesia Research Society, American Gastroenterological Association, Neuroscience, etc.). Numerous additional abstracts were presented at local or regional meetings, including the Midwest Anesthesia Residents Conference (MARC) (a main conference for our residents) and OSUMC Research Day.

**Growth in clinical trials:** Our initial investment in developing research infrastructure, support personnel, and awarding of non-clinical research time to support clinical research has resulted in a clear increase in growth and numbers of clinical trials awarded and funds received from 2006-2009. In 2006 there were 4 active funded multi-center clinical trials and 11 clinical trials in 2007, representing an increase of 7 over the previous year. We are pleased to report that this was yet another record year for us with 9 new active and funded multi-center clinical trials in 2008. During 2008-2009 period (this report), we brought in an additional \$800,000 in new awards from several PIs and many co-PIs in the Department of Anesthesiology.

Data obtained from the PI portal indicates that a total of \$197,740 was awarded from industry in 2006, increasing to \$515,000 in 2007. We brought in nearly \$500,000 from industry during this report year. A majority of those funds were awarded to Sergio Bergese, MD (assistant professor on the RCT, director of neuroanesthesia, Department of Anesthesiology). Our department is quickly gaining visibility as a site for multi-center clinical trials in anesthesia.

In 2009 we appointed Dr. Sergio Bergese as director of clinical trials and neurological research in the Department of Anesthesiology. Over the past few years, Dr. Bergese was the PI of 23 industry-sponsored clinical trials for drugs or devices and clinical studies that were conducted in our department. Through these efforts and those of other physician scientists in the department on the RCT and RTT, our department is gaining recognition as a major center for clinical trials in neuroanesthesia, neural-monitoring devices, post-op pain, and postoperative nausea and vomiting (PONV). As a result of these efforts, we have established a clinical trials and research investigative team which includes clinical research coordinators, post-docs, Fellows, residents, faculty members, and medical students, and significant research that can support the growing research activity and interest in our department. Much of this effort is supported or cost-shared by external funding agencies.

**Clinical processing laboratory:** To further support our clinical research, we invested additional funds and have established a new ~200 square-foot clinical processing lab, newly furnished in the Department of Anesthesiology. The lab is well equipped and meets all safety regulations for processing human samples, tissues or fluids from clinical studies or multi-center clinical trials. This has improved our capabilities and provides further support and leverage towards securing external funding for larger multi-center clinical trials and investigator-initiated clinical studies in our department. The completion date was spring 2009. Partial support for equipment (-80<sup>0</sup> C freezer, a BCL-2 biohazard hood, etc.) is from extramural funding, including NIH funds awarded to Fievos L.

Christofi, PhD. This improves our capabilities and environment for conducting translational studies including those that could be supported by the NIH.

**NIH grants:** We have a 5-year R01 NIDDK grant in its 15th year and 3rd renewal at \$270,000 in 2009.

- **A new ARRA NIH administrative supplement through the American Recovery and Reinvestment Act of 2009 (ARRA)** for \$87,000 (2009-2010). The goal is to investigate mechanisms and interactions of endogenous adenosine release in modulating neural-motor responses in the gastrointestinal (GI) tract and protecting against inflammation and mucosal damage in inflammatory bowel diseases. Co-investigators include Wendy Frankel, MD (OSU, professor and director clinical pathology labs), Kenneth Jacobson, PhD (NIH NIDDK, Chief Medicinal Chemistry) and Susan A. Masino, PhD (associate professor, Trinity College, Connecticut). A key innovation in these studies is to carry out for the first time real-time electrochemical detection of eADO release in intestinal tissue layers using an eADO biosensor (amperometry) system in human intestinal specimens removed from irritable bowel disease (IBD) patients undergoing surgery for their disease. These studies have served to obtain pilot/feasibility data for planning a new NIH R01 submission in the near future that will include a world-renowned NIH foreign investigator from TU Munchen, Germany on “Neuroimaging of the human enteric nervous system in health and disease.”

Hamdy Hassanain, PhD submitted a revised R01 grant titled “The role of profilin1 vascular remodeling” to the Vascular Cell and Molecular Biology (VCMB) study section of the National Heart Lung and Blood Institute of NIH in November 2009 (co-investigator, Arthur Strauch, PhD) and received a 26th percentile score as a new investigator (pending).

#### **Fiscal responsibility**

A significant portion ( $\geq 50\%$ ) of our research efforts and salary support is provided by extramural funding from industry, NIH, or other mechanisms (fellowships, etc.) of our research expenditures. One of the goals is to move towards eventually supporting 80% or more of our costs for research.

#### **NIH study sections**

We have one member of the department (Fievos L. Christofi, PhD) who serves as a permanent member of the Clinical, Integrative and Molecular Gastroenterology study section from 2009-2013.

#### **PhD fellowship program, channel program between Al-Azhar University, Cairo Egypt and Hamdy Hassanain, PhD’s laboratory**

There are several PhD students on fellowship support in his laboratory in the OSBB and MCDB programs with full salary support, supplies, and program fees for a 4-year period. **The government of Egypt is supporting their tuition, fees and supply costs for their PhD training in our department; is ~ \$200K/student over 4 years.**

## Goals for 2010

### *Top Priority:*

1. Capitalize on our investments in **3 physician scientists** by supporting their efforts to submit, resubmit or fund their NIH grant proposals.
2. **Recruitment** of an NIH-R01 funded scientist as well as a research assistant professor on the RRT (with some NIH-co-investigator funding) is in process and under negotiation which will add to our strengths in research.
3. **Provide financial support for research linked to pursuit of competitive intramural and extramural funding.**
4. **Evolving research identity in “neurobiology of diseases and neuromodulation”** – our growing area of biggest strength is neurosciences and neuromodulation. We are beginning to explore additional interdisciplinary collaborations and partnerships in the field and this is expected to be an ongoing process of investment, growth and significant new NIH or equivalent extramural funding. We currently have:
  - (1) A NIH-funded investigator in neuroscience research focused on studies on signal transduction pathways of neuroplasticity and immune-neural modulation in inflammatory diseases.
  - (2) A RTT physician scientist who is in the process of trying to transition from an NIH K08 award to a R01 grant on immune-neural modulation.
  - (3) A RTT physician scientist who is focused on mechanisms of ischemic spinal cord injury.
  - (4) A RCT physician scientist who is gaining a national reputation in multi-center clinical trials in drug and devices for neurological applications – currently among top 5 percentile among OSU clinicians with most active clinical trials.
  - (5) Many postdoctoral researchers and collaborators from other departments/centers involved in neuroscience research efforts.
  - (6) Scientists joining our department (see above) have expertise and/or interests that complement our neuroscience research efforts; R01-funded investigator served previously as Co-I with vice chair of research on an ongoing R01 application in neuroscience research, resulting in several publications including *Gastroenterology*, *Inflammatory Bowel Diseases*, and *International Journal of Parasitology*.



5. As was the case in 2009, our focus will be on impact publications, NIH submission/scored grants, continuing to develop our research infrastructure and aggressively recruit NIH-funded investigators to complement our strengths. Our broad goals for next year are to focus on extramural funding, improve our record of quality, high impact publications, and obtain additional NIH funding including translational studies. Recruitment of an NIH-R01-funded scientist is in process and will add to our strengths in research and academic development, and will provide additional mentorship support for junior faculty.
6. Overall efforts in department: Areas of growing visibility in the department include neuroscience and neurological research (including basic mechanisms of neuroplasticity in IBD, IBS and ischemic spinal cord injury, mechanisms of neuroprotection, neuromodulation, neuroimaging of the CNS and ENS), monitoring devices in the perioperative setting, cardiovascular diseases, neurogastroenterology, opioid bowel dysfunction and neuroplasticity in inflammatory bowel diseases, neuroanesthesia, and wound healing mechanisms.
7. We are making progress in developing and standardizing our clinical research practice (budgets, billing, management, etc.), set up a certified clinical research lab, and we are striving to further align with college programs.

***Longer Term Goals:***

1. **In next 1-3 years, recruit an NIH-funded neuroscientist (brain or spinal cord research probably) to complement our strengths in the field.** To date, we have one basic researcher (F.L. Christofi, PhD, vice chair of research), and one physician scientist (Yun Xia, MD, PhD) who have succeeded in securing NIH funding through NIDDK to carry out studies in neurogastroenterology, with a focus on inflammatory bowel diseases, irritable bowel syndrome, second messengers, and neuroplasticity. A number of new NIH grants are planned in 2010. The vice chair of research has been funded through NIH NIDDK/NCRR for 18 years on 5 separate grants, a 4-year NIH fellowship for an MD/PhD student (currently pursuing an academic career in gastroenterology with his mentor as Gail Hecht, MD, president of the AGA Institute), and 5 additional R01s as co-PI. We plan to do our best to align ourselves with the neuroscience signature program and other related programs (i.e. neurogastroenterology and the GI division, internal medicine) in our recruitment efforts. Several senior residents spend 1-2 month research blocks in neurogastroenterology, and 1 resident is now on faculty.
2. There is a postdoctoral Fellow gastroenterologist (MD/PhD) recruited in Dr. Christofi's laboratory who trained with a prominent world-renowned clinical motility physician scientist, Joseph Sung, MD at The Chinese University of Hong Kong (chair of internal medicine & therapeutics, associate dean, faculty of medicine, director of Digestive Disease Institute). He will be supported by Dr.

- Christofi to submit grants to external agencies and to eventually become an independent investigator.
3. There is also an MD/PhD physician scientist from Germany who trained with the vice chair for a number of years, and is finishing her PGY1 at OSU and will now pursue an academic career in anesthesiology; she will serve as a collaborator on the new R01 being submitted on “Neuroimaging in the human ENS in health and disease” and Ronald Harter, MD and Andrew Roth, MD (director of residency program) support her involvement in research at this level during her three-year residency. In the first and second year, she will have block time to conduct research, and in the third year she will have a six-month non-clinical time to devote to NIH studies. This should provide her with the additional growth and development to submit a clinical investigator grant (K08 or similar) as a junior faculty member in our department (as long as she maintains a high level of performance in her clinical skills, etc.).
  4. We are building from the bottom up, but we need one or more extramurally-funded scientists in a focused area of research to facilitate our progress. Overall, there are currently 4 physicians/scientists who are aggressively pursuing NIH-funding opportunities on new R01-type applications. Each of them is developing research programs. Our goal is to be in the top 20 academic anesthesia departments in the country, but this will take some time.
  5. **National ranking:** Our goal is to align ourselves with the college mission to be in the top 20. In this category, our target is to be ranked at 23rd to 24th in the country according to NIH/other indicators in the next 5 years; this includes recruitment of NIH-funded basic and physician scientists. However, aggregate national standards of progress and productivity will be adopted, not just NIH ranking, to further assess our standing (total funding/clinical trial and NIH, national awards, impact factors, citations of impact articles, editorials, news releases, numbers of publications, numbers of grants, NIH study sections, editorial boards of journals, national committees, etc.).
  6. **Expand clinical trial research** and provide education and training to residents, faculty, and students in the department.
  7. **Further develop research infrastructure and our research team in the Department of Anesthesiology:** Research in progress meetings (CME credit), research staff meetings, workshops, research education, a CA-1 resident research rotation (now running for 7 years with 75 residents participating to date), a quarterly research newsletter, and an updated anesthesiology Web site are all activities that will help in this regard.

### *Honors/Awards*

Our residents, Fellows, and students have received awards and acknowledgement for their scientific and case-report presentations at local, regional, and/or national meetings.

### Other Scholarly Contributions

The Ohio State University Medical Center is a National Emphysema Treatment Trial (NETT) center. The publications associated with these trials (participating site, no co-authorship) include:

1. Drummond MB, Blackford AL, Benditt JO, Make BJ, Scirba FC, McCormack MC, Martinez FJ, Fessler HE, Fishman AP, Wise RA; NETT Investigators. Continuous oxygen use in nonhypoxemic emphysema patients identifies a high-risk subset of patients: retrospective analysis of the National Emphysema Treatment Trial. *Chest* 2008 Sep;134(3):497-506.
2. Martinez FJ, Han MK, Andrei AC, Wise R, Murray S, Curtis JL, Sternberg A, Criner G, Gay SE, Reilly J, Make B, Ries AL, Scirba F, Weinmann G, Mosenifar Z, DeCamp M, Fishman AP, Celli BR; National Emphysema Treatment Trial Research Group. Longitudinal change in the BODE index predicts mortality in severe emphysema. *Am J Respir Crit Care Med* 2008 Sept;178(5):491-499.
3. Snyder ML, Goss CH, Neradilek B, Polissar NL, Mosenifar Z, Wise RA, Fishman AP, Benditt JO; National Emphysema Treatment Trial Research Group. Changes in arterial oxygenation and self-reported oxygen use after lung volume reduction surgery. *Am J Respir Crit Care Med* 2008 Aug;178(4):339-345.

### Chapters in Books

1. Hantler C, Wildes TS, **Andritsos MJ**. 2008. Anesthesia for Airway Surgery. In *Pearson's Thoracic and Esophageal Surgery, 3rd ed*. Edited by Patterson GA, Cooper JD, Deslauriers J, et al. Philadelphia: Churchill Livingstone.
2. **Andritsos MJ**, Gerhardt MA, Zvara DA. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed*. Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.
3. **Bergese SD**, Puente EG. 2009. Cerebral protection and resuscitation. In *Anesthesiology Test Book, 3rd ed*. Edited by Antonio Aldrete, Uriah Guevara, Emilio M. Capmourteres. Mexico City, Mexico: Manual Moderno. (First submission)
4. **Bergese SD**, Puente EG. Anesthetic considerations for neurological surgery with magnetic resonance imaging in the operating room setting. In *Intraoperative MRI for Functional Neurosurgery*. Vol. 20. Edited by Lim D, Larson P. Columbus: Neurosurgery Clinics of North America. 155-162.  
[http://www.neurosurgery.theclinics.com/issues/contents?issue\\_key=S1042-3680\(09\)X0002-1](http://www.neurosurgery.theclinics.com/issues/contents?issue_key=S1042-3680(09)X0002-1) (In press)

5. **Bergese SD**, Puente EG. Equipment considerations outside of the operating room. In *Clinical Essentials of Anesthesia Equipment, 1st ed.* Edited by Warren Sandberg, MD, PhD, Jesse Ehrenfeld, MD. New York, New York, USA: Elsevier Press. (In press)
6. Andritsos MJ, **Gerhardt MA**, Zvara DA. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed.* Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.
7. Sun B, **Harter RL**, Gravlee G. 2008. Devices for Cardiac Support and Replacement. In *Hensley FA, Martin DE, Gravlee GP, eds. A Practical Approach to Cardiac Anesthesia, 4th ed.* Philadelphia, PA: Lippincott Williams and Wilkins. pp. 587-603.
8. **Reilley TE**. 2009. Atelectasis. In *Current Therapy in Obstetrics and Gynecology.* Edited by EJ Quilligan and FP Zuspan. Philadelphia, PA, United States: WB Saunders Co. pp. 360-361.
9. Andritsos MJ, Gerhardt MA, **Zvara DA**. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed.* Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.

### Books and Monographs

1. **Xia Y**. 2009. Anesthetic consideration of preeclampsia. In *Annual Refresher Course Lectures.* Beijing, China: CSA-Chinese Society of Anesthesiology.

### Publications

1. Dzwonczyk R, Fujii JT, Simonetti O, Nieves-Ramos R, **Bergese SD**. Electrical noise in the intraoperative magnetic resonance imaging setting. *Anesth Analg* 2009 Jan;108(1):181-187. (IF = 2.590)
2. **Bergese SD**, Puente EG. Anesthesia in the intraoperative MRI environment. *Neurosurg Clin N Am* 2009 April;20(2):155-162. (IF = 1.158)
3. Awad H, Suntres Z, Heijmans J, Smeak D, Bergdall-Costell V, **Christofi FL**, Magro C, Oglesbee M. Intracellular and extracellular expression of the major inducible 70kDa heat shock protein in experimental ischemia-reperfusion injury of the spinal cord. *Exp Neurol* 2008 Aug; 212(2):275-284. (IF = 3.974)
4. **Christofi FL**. Purinergic receptors and gastrointestinal secretomotor function. *Purinergic Signal* 2008 Sept; 4(3):213-236. (no IF)
5. Rybaczyk L, Rozmiarek A, Circle K, Grants I, Needleman B, Wunderlich JE, Huang K, **Christofi FL**. New bioinformatics approach to analyze gene

- expressions and signaling pathways reveals unique purine gene dysregulation profiles that distinguish between CD and UC. *Inflamm Bowel Dis* [epub ahead of print 2009 Feb 27;doi:10.1002/ibd.20893]. (IF = 4.975)
6. **Dzwonczyk R**, del Rio C, McSweeney TD, Zhang X, Howie MB. Myocardial electrical activity does not affect myocardial electrical impedance measurements. *J Clin Monit Comput* [epub ahead of print 2009 Jun 20;doi:10.1007/s10877-009-9185-9]. (no IF)
  7. **Dzwonczyk R**, Fujii JT, Simonetti O, Nieves-Ramos R, Bergese SD. Electrical noise in the intraoperative magnetic resonance imaging setting. *Anesth Analg* 2009 Jan;108(1):181-186. (IF = 2.590)
  8. Armen TA, Sai-Sudhakar CB, Blais, D, **Awad H**. Anesthetic management for combined double-valve and coronary artery bypass in a patient with acute intermittent porphyria. *J Cardiothoracic Vasc Anesth* [epub ahead of print 2008 Oct 2;doi:10.1053/j.jvca.2008.07.014]. (IF = 0.994)
  9. **Awad H**, Suntres Z, Guzman J, Smeak D, Bergdall-Costell V, Lopez E, Christofi FL, Magro C, Oglesbee M. Intracellular and extracellular expression of the major inducible 70 kDa heat shock protein in experimental ischemia-reperfusion injury of the spinal cord. *Exp Neurol* 2008 Aug;2(212):275-284. (IF = 3.974)
  10. Phillips ABM, Green J, Bergdall VK, Yu J, Monreal G, **Gerhardt MA**, Cheatham JP, Holzer RJ, Galantowicz M. Teaching the "hybrid approach": a novel swine model of muscular ventricular septal defect. *Pediatr Cardiol* 2009 Feb;30(2):114-118. (IF = 1.030)
  11. Monreal G, Nicholson LM, Han B, Joshi MS, Phillips AB, Wold LE, Bauer JA, **Gerhardt MA**. Cytoskeletal remodeling of desmin is a more accurate measure of cardiac dysfunction than fibrosis or myocyte hypertrophy. *Life Sci* 2008 Dec;83(23-24):786-794. (IF = 2.583)
  12. Dzwonczyk R, del Rio C, McSweeney TD, Zhang X, **Howie MB**. Myocardial electrical activity does not affect myocardial electrical impedance measurements. *J Clin Monit Comput* [epub ahead of print 2009 Jun 20;doi:10.1007/s10877-009-9185-9]. (no IF)
  13. **Werner J**, Fernandez S, **Awad H**. The role of smoking history in the development of postoperative nausea and vomiting. *Anesthesiology* 2008 Jul;1(109):156-157; author reply 157-158. (IF = 5.124)
  14. Liu S, Qu MH, Ren W, Hu HZ, Gao N, Wang GD, Wang XY, Fei G, Zuo F, **Xia Y**, Wood JD. Differential expression of canonical (classical) transient receptor potential channels in guinea pig enteric nervous system. *J Comp Neurol* 2008 Dec;6(511):847-862. (IF = 3.743)

15. Fei G, Wang YZ, Liu S, Hu HZ, Wang GD, Qu MH, Wang XY, **Xia Y**, Sun X, Bohn LM, Cooke HJ, Wood JD. Stimulation of mucosal secretion by lubiprostone (SPI-0211) in guinea pig small intestine and colon. *Am J Physiol Gastrointest Liver Physiol* 2009 April; 296(4):G823-832. (IF = 3.587)

### Abstracts

1. **Beget NR**, Small RH, Halim M. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
2. **Bergese SD**, Candiotti K, Zura A, Bockesh P, Bekker A. A phase 3, randomized, double-blind, placebo-controlled, multicenter study evaluating the safety and efficacy of dexmedetomidine used for sedation during elective awake fiberoptic intubation. Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
3. Candiotti K, Bokesch P, Bekker A, **Bergese SD**. A phase 3, randomized, double-blind, placebo-controlled, multicenter study evaluating the safety and efficacy of dexmedetomidine used for sedation during MAC (monitored anesthesia care). Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
4. Huncke T, Candiotti K, **Bergese SD**, Kim S, Bekker A. Prospective, randomized, placebo control study: dexmedetomidine sedation in subset vascular procedures. Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
5. Pangrazzi G, Uhler J, Vaadyala P, **Bergese SD**. A retrospective comparative study of the anesthetic management of craniotomies with and without IV alpha 2 agonists. Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
6. **Bergese SD**, Mani M, Lu H, Vilorio A, Bhatt A, Puente E. Effect of desflurane MAC on intraoperative somatosensory evoked potentials. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, Manchester Grand Hyatt, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
7. Abouelnaga ZA, Hassona MDH, Awad MM, Alhaj MA, Badary OA, Hamada FM, **Bergese SD**, Hassanain H. Mechanical strain in VSM cells triggers vascular remodeling and hypertension and activates integrins in profilin1 transgenic model. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]

8. Awad MM, Talukder H, Kulkarni A, Abouelnaga Z, Hessein-Hassona M, Mostafa A, Abdelhami M, Alhaj M, Zweier J, Kuppusamy P, **Bergese SD**, Hassanain H. Hypertrophy and postischemic contractile dysfunction in mice overexpressing the active form of Zea maize RacD in the heart. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
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10. Bhatt A, Beck A, Puente E, Viloría A, **Bergese SD**. Dexmedetomidine, remifentanyl, and propofol is an efficacious anesthetic combination in deep brain stimulation procedures. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
11. Bhatt A, Pangrazzi G, Uhler J, Dzwonczyk R, Gulati P, **Bergese SD**. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
12. Hassona MDH, Abouelnaga ZA, Awad MM, Alhaj MA, Wani AA, **Bergese SD**, Hassanain H. Vascular hypertrophy-associated hypertension of profilin1 transgenic mouse model led to functional remodeling of vasculature. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
13. Hrelec C, Puente E, Bonaventura B, Otey A, Dzwonczyk R, **Bergese SD**. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
14. Skordilis M, Dzwonczyk R, Viloría A, Rosborough K, **Bergese SD**, Dimitrova G. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
15. Spanos SP, Small R, Bonaventura B, Rosborough K, **Bergese SD**. Comparison of J tip needle-free injection of 1% lidocaine and needle infiltration of 1% lidocaine prior to labor epidural placement. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
16. **Bergese SD**, Mani M, Lu H, Viloría A, Bhatt A, Puente E. Effect of desflurane MAC on intraoperative somatosensory evoked potentials. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego,

- California, United States. (April 14-17, 2009) [Peer Reviewed]
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  18. Bhatt A, Pangrazzi G, Uhler J, Dzwonczyk R, Gulati P, **Bergese SD**. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
  19. Hrelec C, Puente E, Bonaventura B, Otey A, Dzwonczyk R, **Bergese SD**. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
  20. Kim S, Candiotti K, **Bergese SD**, Bokesch PM, Bekker A. A prospective, randomized, double-blind, placebo-controlled study evaluating the efficacy of dexmedetomidine for sedation during orthopedic procedures. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009). [Peer Reviewed]
  21. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, **Bergese SD**, Dimitrova G. 2009. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
  22. Hassona MDH, Abouelnaga ZA, Awad MM, Alhaj MA, Wani AA, **Bergese SD**, Hassanain H. Vascular hypertrophy-associated hypertension of profilin1 transgenic mouse model led to functional remodeling of vasculature. Presented at the American Society of Anesthesiologists Annual Meeting, New Orleans, Louisiana, United States. (April 19-22, 2009) [Peer Reviewed]
  23. Rich N, Skordilis M, Dzwonczyk R, Vilorio A, Dimitrova G, **Bergese SD**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the American Society of Regional Anesthesia and Pain Medicine 34th Annual Regional Anesthesia Meeting and Workshops, Phoenix, Arizona, United States. (April 30 - May 3, 2009) [Peer Reviewed]



24. **Bergese SD**, Simonetti O, Fujii J, Bailey M, Dzwonczyk R. Low field magnetic resonance image scans produce electrical noise that diminishes electrocardiogram signal quality. Presented at the The Second Meeting of Intraoperative Imaging Society, Istanbul, Turkey. (June 14-17, 2009) [Peer Reviewed]
25. Singla N, Ferber L, **Bergese SD**, Royal M, Breitmeyer J. A phase III, multi-center, open-label, prospective, repeated dose, randomized, controlled, multi-day study of the safety of intravenous acetaminophen in adult inpatients. Presented at the American Society of Regional Anesthesia and Pain Medicine 34th Annual Regional Anesthesia Meeting and Workshops, Phoenix, Arizona, United States. (April 30 – May 3, 2009) [Peer Reviewed]
26. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, Bergese SD, **Dimitrova G**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
27. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, Bergese SD, **Dimitrova G**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
28. Rich N, Skordilis M, Dzwonczyk R, Vilorio A, **Dimitrova G**, Bergese SD. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the American Society of Anesthesiologists Annual Meeting, New Orleans, Louisiana, United States. (April 19-22, 2009) [Peer Reviewed]
29. Weaver T, **Dzwonczyk R**, Bergese SD. Economics and impact of return of patients with postoperative nausea and vomiting (PONV): should we treat all surgical patients prophylactically? Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
30. Bhatt A, Pangrazzi G, Uhler J, **Dzwonczyk R**, Gulati P, Bergese SD. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
31. Hrelec C, Puente E, Bonaventura B, Otey A, **Dzwonczyk R**, Bergese SD. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]

32. Skordilis M, **Dzwonczyk R**, Viloría A, Rosborough K, Bergese SD, Dimitrova G. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
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37. Bergese SD, Simonetti O, Fujii J, Bailey M, **Dzwonczyk R**. Low field magnetic resonance image scans produce electrical noise that diminishes electrocardiogram signal quality. Presented at the Second Meeting of Intraoperative Imaging Society, Istanbul, Turkey. (June 14-17, 2009) [Peer Reviewed]
38. Monreal G, Nicholson LM, Phillips A, Bauer JA, **Gerhardt MA**. Endocardial desmin in heart failure. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United States. (April 18-22, 2009) [Peer Reviewed]
39. Beget NR, Small RH, **Halim M**. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
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- remodeling and hypertension and activates integrins in profilin1 transgenic model. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United States. (April 18-22, 2009) [Peer Reviewed]
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  42. Hassona MDH, Abouelnaga ZA, Awad M, Alhaj MA, Wani A, Bergese SD, **Hassanain HH**. Vascular hypertrophy-associated hypertension of profilin1 transgenic mouse model led to functional remodeling of vasculature. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United States. (April 18-22, 2009) [Peer Reviewed]
  43. Beget NR, **Small RH**, Halim M. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  44. Spanos SP, **Small RH**, Rosborough KM. Comparison of J-tip<sup>®</sup> needle-free injection of 1% lidocaine and needle infiltration of 1% lidocaine prior to labor epidural placement. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  45. Vogt KM, Ibinson JW, Gould DJ, Schmalbrock P, **Small RH**. Pain functional MRI differences between right and left handed subjects. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  46. Vogt K, Ibinson J, Schmalbrock P, **Small RH**. Slice-timing correction affects functional MRI noise, model fit, activation maps, and physiologic noise correction. Presented at the International Society for Magnetic Resonance in Medicine 17th Scientific Meeting and Exhibition, Honolulu, Hawaii, United States. (April 18-24, 2009) [Peer Reviewed]
  47. Wang G, Wood JD, Wang X, **Xia Y**, Liu S. Electrophysiological plasticity of AH-type neurons in the enteric nervous system of normal and inflamed guinea pig small intestine. Presented at the Society for Neuroscience 35th Annual Meeting, Washington, DC, United States. (November 15-19, 2008) [Peer Reviewed]
  48. Wang X, Wood JD, Wang G, Zou F, **Xia Y**, Liu S, Fei G. Functional expression of dopamine receptor subtypes in the guinea pig small intestine enteric nervous system. Presented at the Society for Neuroscience 35th Annual Meeting, Washington, DC, United States. (November 15-19, 2008) [Peer Reviewed]

**List of Grants - Department of Anesthesiology from 7/1/2008 to 6/30/2009****Christofi, Fedias L.**

- NIH NIDDK  
Purinergic regulation of enteric neural reflexes  
**\$270,368**

**Gerhardt, Mark A.**

- Society of Cardiovascular Anesthesiologists  
Cytoskeletal alterations in a porcine model of restrictive ventricular septal defect  
**\$20,000**

**Clinical****Arbona, Fernando Luis**

- I-Flow Corporation  
Multicenter continuous peripheral nerve block surveillance study comparing ultrasound guided catheter placement to non ultrasound guided catheter placement techniques  
**\$4,900**

**Bergese, Sergio D.**

- Cadence Pharmaceuticals, Inc.  
CPI-APA-351: A phase III, multi-center, open-label, prospective, repeated dose, randomized, controlled, multi-day study of the safety and efficacy of intravenous acetaminophen in adult inpatients  
**\$139,893**
- Duke University  
INN-SWI-002 - A randomized, controlled phase 3 study of gentamicin-collagen sponge (Collatamp G) in general surgical subjects at higher risk for surgical wound infection  
**\$45,865**
- Javelin Pharmaceuticals, Inc.  
Protocol DFC-010: An open-label, multiple-dose, multiple-day, non-randomized, single-arm safety study of repeat-doses of DIC075V (intravenous diclofenac sodium) in patients with acute post-operative pain  
**\$80,625**
- Javelin Pharmaceuticals, Inc.

- A randomized, multiple-center, double-blind, placebo-controlled, study of the safety and analgesic efficacy of repeated dosing of PMI-150 (intranasal ketamine) to treat acute post-operative pain following orthopedic trauma, injury, or surgery  
**\$5,175**
- Medicines Co., The  
 The evaluation of patients with acute hypertension and intracerebral hemorrhage with intravenous clevidipine treatment (ACCELERATE)  
**\$13,398**
  - Pacira Pharmaceuticals, Inc.  
 SKY0402C208 - A multicenter, randomized, double-blind, parallel-group, active-control, dose-ranging study to evaluate the safety, efficacy, and comparative systemic bioavailability of a single administration of SKY0402 via local  
**\$18,290**
  - Schering-Plough Research Institute  
 A randomized, double-blind, double-dummy, dose-ranging, active- and placebo-controlled study of single-dose oral rolapitant monotherapy for the prevention of postoperative nausea and vomiting (PONV)  
**\$149,690**
  - Wyeth Pharmaceuticals, Inc.  
 A multi-center, randomized, double-blind, placebo-controlled, parallel-group study of intravenous methylnaltrexone (MOA-728) for the treatment of post operative ileus following ventral hernia repair  
**\$15,126**

### **Xia, Yun**

- Sucampo Pharmaceuticals, Inc.  
 Multicenter, randomized, placebo-controlled, double-blinded study of the efficacy and safety of lubiprostone in patients with opioid-induced bowel dysfunction  
**\$15,235**
- Sucampo Pharmaceuticals, Inc.  
 A multi-center open-labeled study of the long-term safety and efficacy of lubiprostone in patients with opioid-induced bowel dysfunction  
**\$9,466**

## **Current Funding to 2010**

**List of Grants - AWARDED 7/1/2009 to 3/31/2010**

### **NIH and Other Grant Awards**

**Christofi, Fedias L.**

- NIH NIDDK (ARRA)  
Purinerbic regulation of enteric neural reflexes  
**\$86,440**
- NIH NIDDK  
Purinerbic regulation of enteric neural reflexes  
**\$270,368**

**Gerhardt, Mark A.**

- Research Institute at Nationwide Children's Hospital  
Molecular alterations in ventricular septal defect  
**\$18,412**
- Society for Cardiovascular Anesthesiologists  
Cytoskeletal alterations in a porcine model of restrictive ventricular septal defect  
**\$20,000**
- Teleflex Incorporated  
Teleflex medical education grant  
**\$3,500**

**Clinical****Bergese, Sergio D.**

- Covidien  
Evaluating the accuracy of continuous non-invasive blood pressure algorithm in hospital operating room and acute care  
**\$113,548**
- Covidien  
Evaluation of respiratory related algorithms in the hospital setting  
**\$147,085**
- Duke University  
INN-SWI-002 - A randomized, controlled phase 3 study of gentamicin-collagen sponge (Collatamp G) in general surgical subjects at higher risk for surgical wound infection  
**\$11,941**
- Eisai Co., Ltd.

Studying the effectiveness of triple therapy with palonosetron, dexamethasone and promethazine for prevention of post operative nausea and vomiting in high risk patients undergoing neurological surgery and general anesthesia

**\$13,975**

- Eisai Co., Ltd.  
A multi-center, open-label, 2-arm, randomized, stratified, parallel, pilot study to assess palonosetron vs. ondansetron as rescue medication in subjects that developed postoperative nausea and vomiting (PONV) in the Postanesthesia Care Unit (PACU)  
**\$24,309**
- Javelin Pharmaceuticals, Inc.  
Protocol DFC-010: An open-label, multiple-dose, multiple-day, non-randomized, single-arm safety study of repeat-doses of DIC075V (intravenous diclofenac sodium) in patients with acute post-operative pain  
**\$110,701**
- Medicines Co., The  
The evaluation of patients with acute hypertension and IntraCerebral hemorrhage with intravenous clevidipine treatment (ACCELERATE)  
**\$11,850**
- Pacira Pharmaceuticals, Inc.  
A phase 3, multicenter, randomized, double blind, parallel group, active control study to evaluate the safety and efficacy of a single administration of SKY0402 for prolonged postoperative analgesia in subjects undergoing total knee arthroplasty  
**\$11,522**
- Pacira Pharmaceuticals, Inc.  
A phase 3, multicenter, randomized, double-blind, parallel-group, active-control study to evaluate the safety and efficacy of local administration of SKY0402 for prolonged postoperative analgesia in subjects undergoing bilateral, cosmetic sub-muscular  
**\$1,500**
- Premier Research Group, PLC  
A phase III, open-label study to investigate the safety and tolerability of the CollaRx bupivacaine implant in patients after pelvic, abdominal or gynecologic surgery  
**\$2,000**
- Premier Research Group, PLC

A phase 2, randomized, double-blind, placebo-controlled, proof of concept study to evaluate the analgesic efficacy and safety of intravenous CR845 during the postoperative period in subjects undergoing laparoscopic-assisted hysterectomy  
**\$13,732**

- Sanofi-aventis  
Protocol EFC6520: A multinational, multicenter, randomized, double blind study comparing the efficacy and safety of AVE5026 with enoxaparin for the prevention of venous thromboembolism in patients undergoing major abdominal surgery  
**\$2,000**

**Hassanain, Hamdy H.**

- Medicines Co., The  
Assessment of the efficacy of clevidipine on vasospasm using a profilin-1 transgenic mice model  
**\$27,000**

**Miller, Sidney Frederick; Bergese, Sergio D.**

- Pfizer, Inc.  
Prospective, single center, randomized, double blind, placebo controlled trial for the evaluation of the efficacy of 300 mg or 600 mg of pregabalin versus placebo in the reduction of pain and opioid consumption in patients with partial or full thickness burns  
**\$11,683**

**Xia, Yun**

- Sucampo Pharmaceuticals, Inc.  
A multi-center open-labeled study of the long-term safety and efficacy of lubiprostone in patients with opioid-induced bowel dysfunction  
**\$11,402**
- Sucampo Pharmaceuticals, Inc.  
Multicenter, randomized, placebo-controlled, double-blinded study of the efficacy and safety of lubiprostone in patients with opioid-induced bowel dysfunction  
**\$5,204**



## *Publications*

### **Peer-reviewed Journal Articles, Case Reports, and Other Publications**

1. Dzwonczyk R, Fujii JT, Simonetti O, Nieves-Ramos R, **Bergese SD**. Electrical noise in the intraoperative magnetic resonance imaging setting. *Anesth Analg* 2009 Jan;108(1):181-187. (IF = 2.590)
2. **Bergese SD**, Puente EG. Anesthesia in the intraoperative MRI environment. *Neurosurg Clin N Am* 2009 April;20(2):155-162. (IF = 1.158)
3. Awad H, Suntres Z, Heijmans J, Smeak D, Bergdall-Costell V, **Christofi FL**, Magro C, Oglesbee M. Intracellular and extracellular expression of the major inducible 70kDa heat shock protein in experimental ischemia-reperfusion injury of the spinal cord. *Exp Neurol* 2008 Aug;212(2):275-284. (IF = 3.974)
4. **Christofi FL**. Purinergic receptors and gastrointestinal secretomotor function. *Purinergic Signal* 2008 Sept;4(3):213-236. (IF = none)
5. Rybaczyk L, Rozmiarek A, Circle K, Grants I, Needleman B, Wunderlich JE, Huang K, **Christofi FL**. New bioinformatics approach to analyze gene expressions and signaling pathways reveals unique purine gene dysregulation profiles that distinguish between CD and UC. *Inflamm Bowel Dis* [epub ahead of print 2009 Feb 27;doi:10.1002/ibd.20893]. (IF = 4.975)
6. **Dzwonczyk R**, del Rio C, McSweeney TD, Zhang X, Howie MB. Myocardial electrical activity does not affect myocardial electrical impedance measurements. *J Clin Monit Comput* [epub ahead of print 2009 Jun 20;doi:10.1007/s10877-009-9185-9]. (IF = none)
7. **Dzwonczyk R**, Fujii JT, Simonetti O, Nieves-Ramos R, Bergese SD. Electrical noise in the intraoperative magnetic resonance imaging setting. *Anesth Analg* 2009 Jan;108(1):181-186. (IF = 2.590)
8. Armen TA, Sai-Sudhakar CB, Blais, D, **Awad H**. Anesthetic management for combined double-valve and coronary artery bypass in a patient with acute intermittent porphyria. *J Cardiothoracic Vasc Anesth* [epub ahead of print 2008 Oct 2;doi:10.1053/j.jvca.2008.07.014]. (IF = 0.994)
9. Werner J, Fernandez S, **Awad H**. The role of smoking history in the development of postoperative nausea and vomiting. *Anesthesiology* 2008 Jul;1(109):156-157; author reply 157-158. (IF = 5.124)

10. **Awad H**, Suntres Z, Guzman J, Smeak D, Bergdall-Costell V, Lopez E, Christofi FL, Magro C, Oglesbee M. Intracellular and extracellular expression of the major inducible 70 kDa heat shock protein in experimental ischemia-reperfusion injury of the spinal cord. *Exp Neurol* 2008 Aug;2(212):275-284. (IF = 3.974)
11. Phillips ABM, Green J, Bergdall VK, Yu J, Monreal G, **Gerhardt MA**, Cheatham JP, Holzer RJ, Galantowicz M. Teaching the "hybrid approach": a novel swine model of muscular ventricular septal defect. *Pediatr Cardiol* 2009 Feb;30(2):114-118. (IF = 1.030)
12. Monreal G, Nicholson LM, Han B, Joshi MS, Phillips AB, Wold LE, Bauer JA, **Gerhardt MA**. Cytoskeletal remodeling of desmin is a more accurate measure of cardiac dysfunction than fibrosis or myocyte hypertrophy. *Life Sci* 2008 Dec;83(23-24):786-794. (IF = 2.583)
13. Dzwonczyk R, del Rio C, McSweeney TD, Zhang X, **Howie MB**. Myocardial electrical activity does not affect myocardial electrical impedance measurements. *J Clin Monit Comput* [epub ahead of print 2009 Jun 20;doi:10.1007/s10877-009-9185-9]. (IF = none)
14. **Werner J**, Fernandez S, Awad H. The role of smoking history in the development of postoperative nausea and vomiting. *Anesthesiology* 2008 Jul;1(109):156-157; author reply 157-158. (IF = 5.124)
15. Liu S, Qu MH, Ren W, Hu HZ, Gao N, Wang GD, Wang XY, Fei G, Zuo F, **Xia Y**, Wood JD. Differential expression of canonical (classical) transient receptor potential channels in guinea pig enteric nervous system. *J Comp Neurol* 2008 Dec;6(511):847-862. (IF = 3.743)
16. Fei G, Wang YZ, Liu S, Hu HZ, Wang GD, Qu MH, Wang XY, **Xia Y**, Sun X, Bohn LM, Cooke HJ, Wood JD. Stimulation of mucosal secretion by lubiprostone (SPI-0211) in guinea pig small intestine and colon. *Am J Physiol Gastrointest Liver Physiol* 2009 April;296(4):G823-832. (IF = 3.587)

### Abstracts

1. **Beget NR**, Small RH, Halim M. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
2. **Bergese SD**, Candiotti K, Zura A, Bockesh P, Bekker A. A phase 3, randomized, double-blind, placebo-controlled, multicenter study evaluating the safety and efficacy of dexmedetomidine used for sedation during elective awake fiberoptic intubation. Presented at the American Society of Anesthesiologists Annual

- Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
3. Candiotti K, Bokesch P, Bekker A, **Bergese SD**. A phase 3, randomized, double-blind, placebo-controlled, multicenter study evaluating the safety and efficacy of dexmedetomidine used for sedation during MAC (monitored anesthesia care). Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
  4. Huncke T, Candiotti K, **Bergese SD**, Kim S, Bekker A. Prospective, randomized, placebo control study: dexmedetomidine sedation in subset vascular procedures. Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
  5. Pangrazzi G, Uhler J, Vaadyala P, **Bergese SD**. A retrospective comparative study of the anesthetic management of craniotomies with and without IV alpha 2 agonists. Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
  6. **Bergese SD**, Mani M, Lu H, Vilorio A, Bhatt A, Puente E. Effect of desflurane MAC on intraoperative somatosensory evoked potentials. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, Manchester Grand Hyatt, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
  7. Abouelnaga ZA, Hassona MDH, Awad MM, Alhaj MA, Badary OA, Hamada FM, **Bergese SD**, Hassanain H. Mechanical strain in VSM cells triggers vascular remodeling and hypertension and activates integrins in profilin1 transgenic model. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
  8. Awad MM, Talukder H, Kulkarni A, Abouelnaga Z, Hessein-Hassona M, Mostafa A, Abdelhami M, Alhaj M, Zweier J, Kuppusamy P, **Bergese SD**, Hassanain H. Hypertrophy and postischemic contractile dysfunction in mice overexpressing the active form of Zea maize RacD in the heart. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
  9. **Bergese SD**, Mani M, Lu H, Vilorio A, Bhatt A, Puente E. Effect of desflurane MAC on intraoperative somatosensory evoked potentials. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
  10. Bhatt A, Beck A, Puente E, Vilorio A, **Bergese SD**. Dexmedetomidine, remifentanyl, and propofol is an efficacious anesthetic combination in deep brain stimulation procedures. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]

11. Bhatt A, Pangrazzi G, Uhler J, Dzwonczyk R, Gulati P, **Bergese SD**. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
12. Hassona MDH, Abouelnaga ZA, Awad MM, Alhaj MA, Wani AA, **Bergese SD**, Hassanain H. Vascular hypertrophy-associated hypertension of profilin1 transgenic mouse model led to functional remodeling of vasculature. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
13. Hrelec C, Puente E, Bonaventura B, Otey A, Dzwonczyk R, **Bergese SD**. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
14. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, **Bergese SD**, Dimitrova G. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
15. Spanos SP, Small R, Bonaventura B, Rosborough K, **Bergese SD**. Comparison of J tip needle-free injection of 1% lidocaine and needle infiltration of 1% lidocaine prior to labor epidural placement. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
16. **Bergese SD**, Mani M, Lu H, Vilorio A, Bhatt A, Puente E. Effect of desflurane MAC on intraoperative somatosensory evoked potentials. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
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18. Bhatt A, Pangrazzi G, Uhler J, Dzwonczyk R, Gulati P, **Bergese SD**. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
19. Hrelec C, Puente E, Bonaventura B, Otey A, Dzwonczyk R, **Bergese SD**. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the International Anesthesia Research Society,

- 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009)  
[Peer Reviewed]
20. Kim S, Candiotti K, **Bergese SD**, Bokesch PM, Bekker A. A prospective, randomized, double-blind, placebo-controlled study evaluating the efficacy of dexmedetomidine for sedation during orthopedic procedures. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009). [Peer Reviewed]
  21. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, **Bergese SD**, Dimitrova G. 2009. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
  22. Hassona MDH, Abouelnaga ZA, Awad MM, Alhaj MA, Wani AA, **Bergese SD**, Hassanain H. Vascular hypertrophy-associated hypertension of proflin1 transgenic mouse model led to functional remodeling of vasculature. Presented at the American Society of Anesthesiologists Annual Meeting, New Orleans, Louisiana, United States. (April 19-22, 2009) [Peer Reviewed]
  23. Rich N, Skordilis M, Dzwonczyk R, Vilorio A, Dimitrova G, **Bergese SD**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the American Society of Regional Anesthesia and Pain Medicine 34th Annual Regional Anesthesia Meeting and Workshops, Phoenix, Arizona, United States. (April 30 - May 3, 2009) [Peer Reviewed]
  24. **Bergese SD**, Simonetti O, Fujii J, Bailey M, Dzwonczyk R. Low field magnetic resonance image scans produce electrical noise that diminishes electrocardiogram signal quality. Presented at the The Second Meeting of Intraoperative Imaging Society, Istanbul, Turkey. (June 14-17, 2009) [Peer Reviewed]
  25. Singla N, Ferber L, **Bergese SD**, Royal M, Breitmeyer J. A phase III, multi-center, open-label, prospective, repeated dose, randomized, controlled, multi-day study of the safety of intravenous acetaminophen in adult inpatients. Presented at the American Society of Regional Anesthesia and Pain Medicine 34th Annual Regional Anesthesia Meeting and Workshops, Phoenix, Arizona, United States. (April 30 – May 3, 2009) [Peer Reviewed]
  26. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, **Bergese SD**, **Dimitrova G**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]

27. Skordilis M, Dzwonczyk R, Vilorio A, Rosborough K, Bergese SD, **Dimitrova G**. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
28. Rich N, Skordilis M, Dzwonczyk R, Vilorio A, **Dimitrova G**, Bergese SD. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the American Society of Anesthesiologists Annual Meeting, New Orleans, Louisiana, United States. (April 19-22, 2009) [Peer Reviewed]
29. Weaver T, **Dzwonczyk R**, Bergese SD. Economics and impact of return of patients with postoperative nausea and vomiting (PONV): should we treat all surgical patients prophylactically? Presented at the American Society of Anesthesiologists Annual Meeting, Orlando, Florida, United States. (October 18-22, 2008) [Peer Reviewed]
30. Bhatt A, Pangrazzi G, Uhler J, **Dzwonczyk R**, Gulati P, Bergese SD. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
31. Hrelec C, Puente E, Bonaventura B, Otey A, **Dzwonczyk R**, Bergese SD. A head to head comparison of Stryker SNAP II and BIS VISTA indices during anesthesia and at awakening. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
32. Skordilis M, **Dzwonczyk R**, Vilorio A, Rosborough K, Bergese SD, Dimitrova G. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the 8th Annual OSUMC Research Day, Columbus, Ohio, United States. (April 2, 2009) [Peer Reviewed]
33. Bhatt A, Pangrazzi G, Uhler J, **Dzwonczyk R**, Gulati P, Bergese SD. Low dose adjuvant dexmedetomidine lowers the concentration of inhaled anesthetic required for adequate sedation. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego California, United States. (April 14-17, 2009) [Peer Reviewed]
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35. Skordilis M, **Dzwonczyk R**, Vilorio A, Rosborough K, Bergese SD, Dimitrova G. Variation of the cerebral state index during carotid cross-clamping in patients

- undergoing carotid endarterectomy. Presented at the International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (April 14-17, 2009) [Peer Reviewed]
36. Rich N, Skordilis M, **Dzwonczyk R**, Vioria A, Dimitrova G, Bergese SD. Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy. Presented at the American Society of Regional Anesthesia and Pain Medicine 34th Annual Regional Anesthesia Meeting and Workshops, Phoenix, Arizona, United States. (April 30-May 3, 2009) [Peer Reviewed]
37. Bergese SD, Simonetti O, Fujii J, Bailey M, **Dzwonczyk R**. Low field magnetic resonance image scans produce electrical noise that diminishes electrocardiogram signal quality. Presented at the Second Meeting of Intraoperative Imaging Society, Istanbul, Turkey. (June 14-17, 2009) [Peer Reviewed]
38. Rajashekara SM, Baylin P, Fernandez S, Rogers B, **Awad H**. Time to INR reversal with rFVIIa in patients on warfarin presenting with a secondary intracerebral hemorrhage: a retrospective case study. Presented at 2009 International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
39. Schloss B, **Elsayed-Awad H**, Von Visger J, Gulati P, Yu L. The impact of aprotinin, renal function, and perioperative risk factors on mortality: a retrospective single center analysis. Presented at 2009 International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
40. Werner JG, Kelly B, Hendricker R, Forrest A, **Awad H**. Thyroplasty for glottal incompetence under local anesthesia and conscious sedation. Presented at 2009 International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
41. Monreal G, Nicholson LM, Phillips A, Bauer JA, **Gerhardt MA**. Endocardial desmin in heart failure. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United States. (April 18-22, 2009) [Peer Reviewed]
42. Beget NR, Small RH, **Halim M**. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
43. Abouelnaga ZA, Hassona MDH, Awad M, Alhaj MA, Badary OA, Hamada F, Bergese SD, **Hassanain HH**. Mechanical strain in VSMC triggers vascular remodeling and hypertension and activates integrins in profilin1 transgenic model. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United

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44. Awad M, Talukder H, Kulkarni A, Abouelnaga ZA, Hassona MDH, Alhaj M, Zweier J, Kuppusamy P, Bergese SD, **Hassanain HH**. Hypertrophy and postischemic contractile dysfunction in mice overexpressing the active form of Zea maise RacD in the heart. Presented at the Experimental Biology meeting, New Orleans, Louisiana, United States. (April 18-22, 2009) [Peer Reviewed]
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  46. Rajashekara SM, Baylin P, Fernandez S, **Rogers B**, Awad H. Time to INR reversal with rfVIIa in patients on warfarin presenting with a secondary intracerebral hemorrhage: a retrospective case study. Presented at 2009 International Anesthesia Research Society, 2009 Annual Meeting, San Diego, California, United States. (March 14-17, 2009) [Peer Reviewed]
  47. Beget NR, **Small RH**, Halim M. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  48. Spanos SP, **Small RH**, Rosborough KM. Comparison of J-tip<sup>®</sup> needle-free injection of 1% lidocaine and needle infiltration of 1% lidocaine prior to labor epidural placement. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  49. Vogt KM, Ibinson JW, Gould DJ, Schmalbrock P, **Small RH**. Pain functional MRI differences between right and left handed subjects. Presented at the Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19, 2009)
  50. Vogt K, Ibinson J, Schmalbrock P, **Small RH**. Slice-timing correction affects functional MRI noise, model fit, activation maps, and physiologic noise correction. Presented at the International Society for Magnetic Resonance in Medicine 17<sup>th</sup> Scientific Meeting and Exhibition, Honolulu, Hawaii, United States. (April 18-24, 2009) [Peer Reviewed]
  51. Wang G, Wood JD, Wang X, **Xia Y**, Liu S. Electrophysiological plasticity of AH-type neurons in the enteric nervous system of normal and inflamed guinea pig small intestine. Presented at the Society for Neuroscience 35<sup>th</sup> Annual Meeting, Washington, DC, United States. (November 15-19, 2008) [Peer Reviewed]



52. Wang X, Wood JD, Wang G, Zou F, **Xia Y**, Liu S, Fei G. Functional expression of dopamine receptor subtypes in the guinea pig small intestine enteric nervous system. Presented at the Society for Neuroscience 35th Annual Meeting, Washington, DC, United States. (November 15-19, 2008) [Peer Reviewed]

### Chapters in Books

1. Hantler C, Wildes TS, **Andritsos MJ**. 2008. Anesthesia for Airway Surgery. In *Pearson's Thoracic and Esophageal Surgery, 3rd ed.* Edited by Patterson GA, Cooper JD, Deslauriers J, et al. Philadelphia: Churchill Livingstone.
2. **Andritsos MJ**, Gerhardt MA, Zvara DA. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed.* Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.
3. **Bergese SD**, Puente EG. 2009. Cerebral protection and resuscitation. In *Anesthesiology Test Book, 3rd ed.* Edited by Antonio Aldrete, Uriah Guevara, Emilio M. Capmourteres. Mexico City, Mexico: Manual Moderno. (First submission)
4. **Bergese SD**, Puente EG. Anesthetic considerations for neurological surgery with magnetic resonance imaging in the operating room setting. In *Intraoperative MRI for Functional Neurosurgery*. Vol. 20. Edited by Lim D, Larson P. Columbus: Neurosurgery Clinics of North America. 155-162.  
[http://www.neurosurgery.theclinics.com/issues/contents?issue\\_key=S1042-3680\(09\)X0002-1](http://www.neurosurgery.theclinics.com/issues/contents?issue_key=S1042-3680(09)X0002-1) (In press)
5. **Bergese SD**, Puente EG. Equipment considerations outside of the operating room. In *Clinical Essentials of Anesthesia Equipment, 1st ed.* Edited by Warren Sandberg, MD, PhD, Jesse Ehrenfeld, MD. New York, New York, USA: Elsevier Press. (In press)
6. Andritsos MJ, **Gerhardt MA**, Zvara DA. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed.* Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.
7. Sun B, **Harter RL**, Gravlee G. 2008. Devices for Cardiac Support and Replacement. In *Hensley FA, Martin DE, Gravlee GP, eds. A Practical Approach to Cardiac Anesthesia, 4th ed.* Philadelphia, PA: Lippincott Williams and Wilkins. pp. 587-603.
8. **Reilley TE**. 2009. Atelectasis. In *Current Therapy in Obstetrics and Gynecology*. Edited by EJ Quilligan and FP Zuspan. Philadelphia, PA, United States: WB Saunders Co. pp. 360-361.

9. Andritsos MJ, Gerhardt MA, **Zvara DA**. 2009. Cardiovascular Pharmacology. In *Atlas of Cardiothoracic Anesthesia, 2nd ed*. Edited by Miller RD, Series Ed.; Reves JG, Volume Ed. Philadelphia: Churchill Livingstone.

### **Books and Monographs**

1. **Xia Y**. 2009. Anesthetic consideration of preeclampsia. In *Annual Refresher Course Lectures*. Beijing, China: CSA-Chinese Society of Anesthesiology.

### **Other Scholarly Contributions**

The Ohio State University Medical Center is a National Emphysema Treatment Trial (NETT) center. The publications associated with these trials include:

1. Drummond MB, Blackford AL, Benditt JO, Make BJ, Scirba FC, McCormack MC, Martinez FJ, Fessler HE, Fishman AP, Wise RA; NETT Investigators. Continuous oxygen use in nonhypoxemic emphysema patients identifies a high-risk subset of patients: retrospective analysis of the National Emphysema Treatment Trial. *Chest* 2008 Sep;134(3):497-506.
2. Martinez FJ, Han MK, Andrei AC, Wise R, Murray S, Curtis JL, Sternberg A, Criner G, Gay SE, Reilly J, Make B, Ries AL, Scirba F, Weinmann G, Mosenifar Z, DeCamp M, Fishman AP, Celli BR; National Emphysema Treatment Trial Research Group. Longitudinal change in the BODE index predicts mortality in severe emphysema. *Am J Respir Crit Care Med* 2008 Sept;178(5):491-499.
3. Snyder ML, Goss CH, Neradilek B, Polissar NL, Mosenifar Z, Wise RA, Fishman AP, Benditt JO; National Emphysema Treatment Trial Research Group. Changes in arterial oxygenation and self-reported oxygen use after lung volume reduction surgery. *Am J Respir Crit Care Med* 2008 Aug;178(4):339-345.

## Education



**Andrew H. Roth, MD**  
Clinical Assistant Professor  
Residency Program Director

The Ohio State University Department of Anesthesiology residency program's mission is to produce top-of-the-line clinicians and scholars for the improvement of the field of anesthesiology. We pride ourselves on the vast spectrum of cases the residents are exposed to and the thought processes that we go through as academicians to provide the best care to our patients.

This excellent clinical exposure is mixed with a strong didactic experience for our residents. This is demonstrated in our board pass rate, which is 94% in the last five-year period. The national pass rate average is 83% amongst other anesthesiology programs in this time period. We feel we have an above-average percentage because we are a smaller program comparatively speaking, and the residents do not get lost in a big group.

Our program has 12 residents allotted for each clinical year. We have seven categorical positions during which the residents have one year of internship at Ohio State. The remaining five spots are advanced positions in which the resident does an internship at an outside hospital and then starts with us in his/her PGY-2 year. We also offer accredited fellowships in pain medicine and cardiothoracic anesthesiology and non-accredited fellowships in neuroanesthesia, obstetric anesthesiology, and regional anesthesiology. We are currently in the process of obtaining accreditation for an anesthesiology critical care fellowship.

### Graduating Residents

We had nine graduating residents this year. Three residents entered private practice, two residents entered academic medicine, and four continued into fellowships. Our 2009 graduates include:

- **Eric Barua, MD** - He completed his anesthesiology residency and is now working in a private practice position at Grant Hospital in Columbus, Ohio
- **Nathan Beget, MD** - He completed his anesthesiology residency and remained as faculty at The Ohio State University

- **Jason Chung, MD** - Dr. Chung completed his anesthesiology residency and entered private practice in Tampa, Florida
- **Heather Gensel, DO** - Dr. Gensel completed her anesthesiology residency and remained as faculty at Ohio State
- **Alok Moharir, MD** - Dr. Moharir completed his anesthesiology residency and entered a pediatric anesthesiology fellowship at the University of Michigan
- **Ben Morris, MD** - Dr. Morris completed his anesthesiology training and entered a critical care fellowship at The Ohio State University
- **Keith Schiff, MD** - Dr. Schiff completed his anesthesiology residency and entered a fellowship in pain at the University of Maryland
- **Nisha Seck, MD** - Dr. Seck completed her anesthesiology residency and entered a private practice position at Grant Hospital in Columbus, Ohio
- **Stephen Spanos, MD** - Dr. Spanos completed his anesthesiology residency and entered a pediatric anesthesiology fellowship at Denver Children's Hospital

## ***Presentations***

1. **Andritsos MJ**, Presenter. 2009. A patient with type A dissection and Marfan's syndrome - problem based learning discussion. Presented at Society of Cardiovascular Anesthesiologists 31st Annual Meeting and Workshops, San Antonio, Texas, United States. (April)
2. **Andritsos MJ**, Presenter. 2009. ACC guidelines for preoperative testing: a practical approach in a major academic center - problem based learning discussion. Presented at Society of Cardiovascular Anesthesiologists 31st Annual Meeting and Workshops, San Antonio, Texas, United States. (April)
3. **Arbona FL**, Presenter. 2008. Led the University of Cincinnati COM ultrasound regional anesthesia workshops, Cincinnati, Ohio, United States. (July 2)
4. **Arbona FL**, Presenter. 2009. Intensive ultrasound comprehensive workshop. Presented at American Society of Regional Anesthesiologists (ASRA) annual meeting, Phoenix, Arizona, United States. (April 30)
5. **Arbona FL**, Presenter. 2009. Ultrasound guided upper extremity blocks workshop. Presented at American Society of Regional Anesthesiologists (ASRA) annual meeting, Phoenix, Arizona, United States. (April 30)
6. **Beget NR**, Small RH, Halim M, Presenters. 2009. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
7. **Dalton RE**, Presenter. 2009. Pain management for thoracic surgical patients. Presented at Multidisciplinary Lung Cancer Conference, Columbus, Ohio, United States. (April 3)
8. **Dimitrova GT**, Presenter. 2008. Cardiac stents, antiplatelets, and outcomes. Presented at Ohio Society of Anesthesiologists 69th Annual Meeting, Columbus, Ohio, United States. (September 13)
9. **Dzwonczyk RR**, Presenter. 2009. PowerPoint primer. Presented at EMS-instructor update conference, Delaware (OH) County Emergency Medical Services, Delaware, Ohio, United States. (April 28)
10. **Eck HC**, Presenter. OPAC. Presented to Health System Operating Committee, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 13)

11. **Gupta B**, Presenter. 2009. Neuro anesthesia & airway management. Presented at Professional Seminars Presentation, St. Louis, Missouri, United States.
12. **Halim M**, Presenter. 2009. Anesthetic management of an obstetric patient with myocardial infarction history and drug eluting stents. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
13. **Halim M**, Presenter. 2009. Obstetric anesthesia management in a patient with Holt-Oram syndrome. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
14. **Halim M**, Presenter. 2009. Obstetric anesthesia management in a patient with Holt-Oram syndrome. Presented at Society for Obstetric Anesthesia and Perinatology, Washington, D.C., United States. (April)
15. **Nathan NS**, Presenter. 2009. Three dimensional echocardiography. Presented at Massachusetts General Hospital, Boston, Massachusetts, United States. (May)
16. **Rogers BM**, Presenter. 2008. Sagittal venous thrombosis in pregnancy. Presented at Ohio Society of Anesthesiologists, Cleveland, Ohio, United States. (September)
17. **Rogoski JS**, Presenter. 2008. Fiberoptic intubation and cricothyrotomy, difficult airway workshop. Presented at Ohio Society of Anesthesiologists annual meeting, Cleveland, Ohio, United States. (September 13)
18. **Shao Y**, Presenter. 2008. The effect of transfusing blood products on critically ill and cardiac surgical patients. Presented at Zhengzhou University, Zhengzhou, China. (September)
19. **Shao Y**, Presenter. 2008. Understand how/why to perform a comprehensive intraoperative transesophageal echocardiography. Presented at Fourth Military Medical University, Xi-an, China. (September) [Peer Reviewed]
20. **Shao Y**, Presenter. 2008. Use of transesophageal echocardiography for hemodynamic instability during separation of the patient from cardiopulmonary bypass. Presented at 2008 Annual Meeting of Chinese Society of Anesthesiologists, Xi-an, China. (September) [Peer Reviewed]
21. **Shao Y**, Gao W, Presenter. 2008. TEE teaching/review course; designed and organized: (a) Comprehensive intraoperative TEE exam and Doppler study part I, (b) Comprehensive intraoperative TEE exam and Doppler study part II, (c) Mitral valve evaluation, mitral stenosis, mitral regurgitation, (d) Right ventricular function evaluation, (e) Left ventricular segmental wall motion abnormality and systolic function, (f) Aortic valve stenosis and regurgitation, and (g) Prosthetic valve evaluation. Presented at Annual Meeting of Chinese Society of

- Anesthesiologists, China. (September) [Peer Reviewed]
22. **Shao Y**, Gao W, Presenters. 2008. TEE teaching/review course; designed and organized: (a) Comprehensive intraoperative TEE exam and Doppler study part I, (b) Comprehensive intraoperative TEE exam and Doppler study part II, (c) Mitral valve evaluation, mitral stenosis, mitral regurgitation, (d) Right ventricular function evaluation, (e) Left ventricular systolic function (presented by Dr. Wendong Gao of John Hopkins University), and (f) Aortic valve evaluation (presented by Dr. Wendong Gao of John Hopkins University). Presented at 4th International Chinese Cardiovascular Anesthesia Forum, Hongzhou, China. (September) [Peer Reviewed]
  23. **Turner KR**, Presenter. 2009. PBLD: Anesthesia for thoracic aortic aneurysm stenting. Presented at Society for Cardiovascular Anesthesiologists, San Antonio, Texas, United States. (April)
  24. **Xia Y**, Presenter. 2008. (1) Labor analgesia in the US, (2) 2007 ASA Practice Guidelines for Obstetric Anesthesia, (3) Update of obstetrical anesthesia in US, and (4) Personalized medicine. Presented at Tour in China: Xian Jiaotong University Health Science Center in Xian, Wuhan Society of Anesthesiology and Wuhan University Health Science Center in Wuhan, Wenzhou Society of Anesthesiology and Wenzhou Medical College in Wenzhou, Zhejiang Chinese Medical. Xian, Wuhan, Wenshou, Shanghai, China. (October 20 - November 3)
  25. **Xia Y**, Presenter. 2008. Labor analgesia in the US. Anesthesia organized by Capital Medical University and Beijing Society of Anesthesiology. Presented at Second Beijing Symposium of Obstetric Anesthesia, Beijing, China. (October 10 - 14)
  26. **Xia Y**, Presenter. 2008. Clinical application of opioids. Presented to Symposium of Clinical Anesthesia at Yunnan Society of Anesthesiology, Yunnan Province, Kunming, China. (October)
  27. **Xia Y**, Presenter. 2009. (1) Update of labor analgesia in the US, (2) Anesthetic considerations of a parturient with multiple co-existing diseases. Lecture tour, Wenzhou Society of Anesthesiology and Wenzhou Medical College in Wenzhou, China. (June 12 -15)
  28. **Xia Y**, Presenter. 2009. Update of OB anesthesia in the US. Invited speaker in the International Symposium of Clinical Anesthesia, Yunnan Society of Anesthesiology, Kunming, China. (June 20)
  29. **Xia Y**, Presenter. 2009. OB anesthesia in the US. Invited speaker in the First Shanghai International Forum on Obstetric Anesthesia, organized by Women and Children Hospital, Shanghai Jiaotong University, Shanghai, China. (June 27)

*Lectures*

1. **Andritsos MJ**, Lecturer. 2008. OR record. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
2. **Andritsos MJ**, Lecturer. 2008. Anesthesia for cardiac surgery. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 16)
3. **Andritsos MJ**, Lecturer. 2008. Anesthesia and the endovascular stenting patients. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 6)
4. **Andritsos MJ**, Lecturer. 2008. Introduction to cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 12)
5. **Andritsos MJ**, Lecturer. 2008. Introduction to cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 9)
6. **Andritsos MJ**, Lecturer. 2009. Cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 22)
7. **Andritsos MJ**, Lecturer. 2009. Cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 13)
8. **Andritsos MJ**, Lecturer. 2009. Introduction to cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 10)
9. **Andritsos MJ**, Lecturer. 2009. Cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 14)
10. **Andritsos MJ**, Peralta F, Lecturers. 2009. Coagulation monitoring. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 14)
11. **Andritsos MJ**, Lecturer. 2009. Cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 20)



12. **Andritsos MJ**, Nishioka H, Lecturers. 2009. Pulmonary hypertension. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 28)
13. **Andritsos MJ**, Lecturer. 2009. Cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 16)
14. **Arbona FL**, Lecturer. 2008. Spinal, epidural, and caudal anesthesia. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 21)
15. **Arbona FL**, Lecturer. 2008. How to construct a CV. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 21)
16. **Arbona FL**, Moderator/Lecturer. 2009. Anesthesia for orthopedic & ENT procedures. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (April)
17. **Beget NR**, Turner K, Lecturers. 2008. Cardiac assist devices. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 6)
18. **Benedetti C**, Lecturer. 2009. Acute pain. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 24)
19. **Bergese SD**, Lecturer. 2009. Cirrhotic patients undergoing anesthesia and surgery. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 12)
20. **Bergese SD**, Lecturer. 2009. EEG. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 12)
21. **Bergese SD**, Lecturer. 2009. Nausea and vomiting. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 28)
22. **Christofi FL**, Lecturer. 2008. Introduction to research. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 21)
23. **Christofi FL**, Lecturer. 2009. Anesthesia research update: a lot to be proud of! Presented at Department of Anesthesiology Grand Rounds, The Ohio State

- University Medical Center, Columbus, Ohio, United States. (June 4)
24. **Dalton RE**, Lecturer. 2008. Orientation. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
  25. **Dalton RE**, Lecturer. 2008. Preop medications. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 10)
  26. **Dalton RE**, Lecturer. 2008. Introduction to volative anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 11)
  27. **Dalton RE**, Moderator. 2008. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 17)
  28. **Dalton RE**, Lecturer. 2008. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 22)
  29. **Dalton RE**, Moderator. 2008. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
  30. **Dalton RE**, Lecturer. 2008. The anesthesia machine. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 22)
  31. **Dalton RE**, Moderator. 2008. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 28)
  32. **Dalton RE**, Moderator. 2008. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 18)
  33. **Dalton RE**, Lecturer. 2008. Anesthesia for thoracic surgery – part 1. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 9)
  34. **Dalton RE**, Moderator. 2008. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 23)
  35. **Dalton RE**, Lecturer. 2008. Perioperative postponement. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center,

- Columbus, Ohio, United States. (November 13)
36. **Dalton RE**, Lecturer. 2008. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 19)
  37. **Dalton RE**, Lecturer. 2008. Perioperative glucose monitoring. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 20)
  38. **Dalton RE**, Lecturer. 2008. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 4)
  39. **Dalton RE**, Lecturer. 2008. An unusual complication of continuous epidural anesthesia. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 11)
  40. **Dalton RE**, Lecturer. 2009. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 13)
  41. **Dalton RE**, Moderator. 2009. Perioperative update. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 15)
  42. **Dalton RE**, Moderator. 2009. Paralytics and postop seizures. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 29)
  43. **Dalton RE**, Moderator. 2009. Thyroid storm. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 12)
  44. **Dalton RE**, Lecturer. 2009. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 19)
  45. **Dalton RE**, Moderator. 2009. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 26)
  46. **Dalton RE**, Lecturer. 2009. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 7)

47. **Dalton RE**, Moderator. 2009. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 16)
48. **Dalton RE**, Moderator. 2009. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 7)
49. **Dalton RE**, Lecturer. 2009. Volatile anesthetics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 12)
50. **Dalton RE**, Moderator. 2009. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 21)
51. **Dalton RE**, Lecturer. 2009. M&M. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 11)
52. **Dalton RE**, Lecturer. 2009. Volatile anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 23)
53. Barua E and **Dimitrova GT**, Lecturers. 2008. Surgical treatment of arrhythmias. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
54. Beltran and **Dimitrova GT**, Lecturers. 2008. Pericardial disease. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 4)
55. **Dzwonczyk RR**, Lecturer. 2009. Project documentation. Presented at The Ohio State University, College of Engineering for ENG692 service learning class, Columbus, Ohio, United States. (January 14)
56. **Eck HC**, Lecturer. 2008. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 10)
57. **Eck HC**, Lecturer. 2008. Anatomy pertinent to anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 25)
58. **Eck HC**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 30)

59. **Eck HC**, Lecturer. 2008. Preoperative assessment. Presented to Department of Surgery Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 17)
60. **Eck HC**, Lecturer. 2008. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (Anticholinergic drugs/hypotensive agents. (September 29)
61. **Eck HC**, Lecturer. 2008. Preoperative assessment. Presented to gynecologic oncology Fellows, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 6)
62. **Eck HC**, Lecturer. 2008. Anesthesia for vascular surgery. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 7)
63. **Eck HC**, Lecturer. 2008. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 2)
64. **Eck HC**, Lecturer. 2009. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 6)
65. **Eck HC**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 23)
66. **Eck HC**, Lecturer. 2009. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 3)
67. **Eck HC**, Lecturer. 2009. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 7)
68. **Eck HC**, Lecturer. 2009. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 5)
69. **Eck HC**, Lecturer. 2009. Basic pharmacology. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 2)
70. **Eck HC**, Lecturer. 2009. Preoperative assessment. Presented to all residents (anesthesiology, surgery, Ob/Gyn, emergency medicine, etc.), The Ohio State University Medical Center, Columbus, Ohio, United States. (June 22)
71. **Eck HC**, Lecturer. 2009. Preoperative assessment. Presented to all residents (anesthesiology, surgery, Ob/Gyn, emergency medicine, etc.), The Ohio State

- University Medical Center, Columbus, Ohio, United States. (June 29)
72. **Elsayed-Awad H**, Lecturer. 2008. Vasoactive agents. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 9)
  73. **Elsayed-Awad H**, Lecturer. 2008. Introduction to thoracic anesthesia. Presented at Med IV anesthesiology lecture, The Ohio State University, Columbus, Ohio, United States. (August 13)
  74. **Elsayed-Awad H**, Lecturer. 2008. Cardiac anesthesia - open forum. Presented at anesthesiology subspecialty conference, The Ohio State University, Columbus, Ohio, United States. (August 14)
  75. **Elsayed-Awad H**, Lecturer. 2008. Introduction to thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 5)
  76. **Elsayed-Awad H**, Lecturer. 2008. Conscious sedation. Presented at Meeting of Electrophysiology, sponsored by MedTronics, to Advance Nurse Practices and Physician Assistant, BioMedical Research Tower, Columbus, Ohio, United States. (September 13)
  77. Morris B, Lecturer. 2008. Cardiac anesthesia - TEE rounds, **Elsayed-Awad H**, Moderator. Presented at anesthesiology subspecialty conference, The Ohio State University, Columbus, Ohio, United States. (September 25)
  78. Morris B, AbdElDayem M, Lecturer. 2008. Cardiac anesthesia - TEE rounds, **Elsayed-Awad H**, Moderator. Presented at anesthesiology subspecialty conference, The Ohio State University, Columbus, Ohio, United States. (October 30)
  79. **Elsayed-Awad H**, Lecturer. 2009. Lung transplantation. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 15)
  80. **Elsayed-Awad H**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 26)
  81. **Elsayed-Awad H**, Lecturer. 2009. Update on fluid management. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 9)
  82. **Elsayed-Awad H**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.

- States. (April 22)
83. **Elsayed-Awad H**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 14)
  84. **Elsayed-Awad H**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 18)
  85. **Evers M**, Lecturer. 2008. OR safety. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 17)
  86. **Evers M**, Lecturer. 2008. Nonvolatile anesthetic agents. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 19)
  87. **Evers M**, Lecturer. 2009. Electrical safety in the operating room. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 2)
  88. **Gensel H**, Gerhardt MA, Lecturers. 2008. Surgery on the thoracic aorta. Presented to cardiac conference, Department of Anesthesiology, The Ohio State University, Columbus, Ohio, United States. (November 20)
  89. **Gerhardt MA**, Monreal G, Lecturers. 2008. Presented at 1st Annual CA-1 Anesthesiology Skills Lab, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 18)
  90. **Gerhardt MA**, Lecturer. 2008. Introduction to peripheral nerve blocks. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 22)
  91. **Gerhardt MA**, Lecturer. 2008. M&M. Presented at cardiac conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 18)
  92. **Gerhardt MA**, Lecturer. 2008. Chapter 12 of M&M. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 6)
  93. **Gerhardt MA**, Gensel H, Lecturers. 2008. Surgery on the thoracic aorta. Presented at cardiac conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 20)

94. **Gerhardt MA**, Monreal G, Lecturers. 2009. Presented at University Laboratory Animal Resources (ULAR) Skills Lab, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 12)
95. **Gerhardt MA**, Guest Lecturer. 2009. Pharmacy 749 – Pharmacology (PharmD students). Presented at College of Pharmacy, The Ohio State University, Columbus, Ohio, United States. (March 9)
96. **Gerhardt MA**, Guest Lecturer. 2009. Pharmacy 749 – Pharmacology (PharmD students). Presented at College of Pharmacy, The Ohio State University, Columbus, Ohio, United States. (March 11)
97. **Gerhardt MA**, Monreal G, Guest Lecturers. 2009. Blood pressure. Presented at University Laboratory Animal Resources (ULAR) lecture series, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 17)
98. **Gerhardt MA**, Lecturer. 2009. Paravertebral nerve blocks. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 4)
99. **Gupta B**, Lecturer. 2009. Third world anesthesiology. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 19)
100. **Gupta B**, Lecturer. 2009. Neurosurgical anesthesia. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 8)
101. **Gutmann RM**, Lecturer. 2008. Spinal, epidural and caudal blocks. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 27)
102. **Halim M**, Lecturer. 2008. Neuromuscular blocking agents. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 14)
103. **Halim M**, Lecturer. 2008. Introduction to OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 11)
104. **Halim M**, Moderator. 2009. Maternal hemorrhage. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 16)
105. **Halim M**, Lecturer. 2009. Obstetric anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center,



Columbus, Ohio, United States. (May 22)

106. **Halim M**, Lecturer. 2009. Epidural for OB anesthesia. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 25)
107. **Hamilton CL**, Lecturer. 2008. Introduction to regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 23)
108. **Hamilton CL**, Lecturer. 2008. Adjuncts to anesthesia. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 20)
109. **Hamilton CL**, Lecturer. 2008. Introduction to regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 14)
110. **Hamilton CL**, Lecturer. 2008. Introduction to regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 17)
111. **Hamilton CL**, Lecturer. 2009. Regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 15)
112. **Hamilton CL**, Lecturer. 2009. Regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 23)
113. **Hamilton CL**, Lecturer. 2009. Regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 17)
114. **Hamilton CL**, Lecturer. 2009. Regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 11)
115. **Hamilton CL**, Lecturer. Regional and neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 19)
116. **Harter RL**, Lecturer. 2008. Rotation schedules and case logs. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)

117. **Harter RL**, Lecturer. 2008. Physician impairment. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
118. **Harter RL**, Lecturer. 2008. Inhalation anesthetics. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 3)
119. **Harter RL**, Panel Member. 2008. What does it take to be a star resident applicant?--one program director's view, panel presentation to American Society of Anesthesiologists' Medical Student Component House of Delegates' meeting, Orlando, Florida. (October 18)
120. **Harter RL**, Lecturer. 2008. Anesthetic complications. Presented at medical students lecture, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 19)
121. **Harter RL**, Lecturer. 2008. Anesthesia complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 17)
122. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 16)
123. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 20)
124. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 11)
125. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 15)
126. **Harter RL**, Lecturer. 2009. Regional anesthesia for patients on Lovenox. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 7)
127. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 13)

128. **Harter RL**, Lecturer. 2009. Pediatric anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 28)
129. **Harter RL**, Lecturer. 2009. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 4)
130. **Highley JM**, Lecturer. 2008. Ambulatory anesthesia, case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 17)
131. **Highley JM**, Lecturer. 2008. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 23)
132. **Highley JM**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
133. **Highley JM**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 9)
134. **Highley JM**, Lecturer. 2008. Anesthetic complications. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 10)
135. **Highley JM**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 21)
136. **Highley JM**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 19)
137. **Highley JM**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 24)
138. **Highley JM**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 25)
139. **Highley JM**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.

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140. **Highley JM**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 27)
141. **Highley JM**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 24)
142. **Hohmann JE**, Lecturer. 2008. History of anesthesia. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 14)
143. **Howie MB**, Lecturer. 2008. Introduction to cardiac anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 16)
144. **Howie MB**, Lecturer. 2008. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 17)
145. **Howie MB**, Lecturer. 2008. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 24)
146. **Howie MB**, Lecturer. 2008. TBA. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 25)
147. **Howie MB**, Lecturer. 2008. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 6)
148. **Howie MB**, Lecturer. 2008. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 12)
149. **Howie MB**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 25)
150. **Howie MB**, Lecturer. 2008. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 10)

151. **Howie MB**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 12)
152. **Howie MB**, Lecturer. 2009. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 27)
153. **Howie MB**, Lecturer. 2009. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 27)
154. **Howie MB**, Lecturer. 2009. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 18)
155. **Howie MB**, Lecturer. 2009. Pheochromocytoma. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 18)
156. **Howie MB**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 26)
157. **Howie MB**, Lecturer. 2009. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 4)
158. **Howie MB**, Lecturer. 2009. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 10)
159. **Howie MB**, Lecturer. 2009. Case presentation I. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 18)
160. **Howie MB**, Lecturer. 2009. Case presentation II. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 27)
161. **Howie MB**, Lecturer. 2009. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 9)
162. **Howie MB**, Lecturer. 2009. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 14)

163. **Howie MB**, Lecturer. 2009. Case presentation II (cardiac physiology). Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 23)
164. **Kapoor R**, Lecturer. 2008. Orientation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
165. **Kapoor R**, Lecturer. 2008. Preoperative evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 8)
166. **Kapoor R**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 18)
167. **Kapoor R**, Lecturer. 2008. Preop cardiac clearance. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 29)
168. **Kapoor R**, Lecturer. 2008. Preop anesthetic assessment. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 26)
169. **Kapoor R**, Lecturer. 2008. Introduction to thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 18)
170. **Kapoor R**, Lecturer. 2008. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 20)
171. **Kapoor R**, Lecturer. 2008. Simulation session. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 21)
172. **Kapoor R**, Lecturer. 2008. Orientation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 1)
173. **Kapoor R**, Lecturer. 2008. Introduction to thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 16)
174. **Kapoor R**, Lecturer. 2008. Preoperative evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.

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175. **Kapoor R**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 7)
  176. **Kapoor R**, Lecturer. 2009. Preoperative evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 15)
  177. **Kapoor R**, Lecturer. 2009. Thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 11)
  178. **Kapoor R**, Lecturer. 2009. Case presentation/exam review. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 25)
  179. **Kapoor R**, Lecturer. 2009. Case presentation/exam review. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 24)
  180. **Kapoor R**, Lecturer. 2009. Preop evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 2)
  181. **Kapoor R**, Lecturer. 2009. Exam review. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 21)
  182. **Kapoor R**, Lecturer. 2009. Preop evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 8)
  183. **Kapoor R**, Lecturer. 2009. Exam review and simulator. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 22)
  184. **Kapoor R**, Lecturer. 2009. Preop evaluation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 3)
  185. **Kapoor R**, Lecturer. 2009. Exam review and case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 24)

186. **Kelly GT**, Lecturer. 2008. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 7)
187. **Kelly GT**, Lecturer. 2008. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 3)
188. **Kelly GT**, Lecturer. 2009. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 10)
189. **Kelly GT**, Lecturer. 2009. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 19)
190. **Khabiri B**, Lecturer. 2008. Breathing systems. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 4)
191. **Khabiri B**, Lecturer. 2008. Nerve blocks. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 28)
192. **Kover AJ**, Lecturer. 2008. Peripheral nerve blocks. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 3)
193. **Li L**, Lecturer. 2008. Operative fluid management. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 8)
194. **Li L**, Lecturer. 2008. Fluid and electrolyte physiology. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 11)
195. **Lopez L**, Lecturer. 2009. Operating room management. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 26)
196. **Lopez LA**, Lecturer. 2009. Geriatric anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 3)
197. **Miller HB**, Lecturer. 2008. Introduction to pain medicine. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.



- States. (July 24)
198. **Miller HB**, Lecturer. 2008. Chronic pain. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 28)
  199. **Miller HB**, Lecturer. 2009. Introduction to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 22)
  200. **Moran KR**, Lecturer. 2008. Sixty year old for revision of left forearm, AV shunt graft. Presented at Department of Anesthesiology Grand Rounds/M&M, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 23)
  201. **Moran KR**, Lecturer. 2008. Autologous transfusion. Presented to CA-2/3 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 24)
  202. **Moran KR**, Lecturer. 2008. Introduction to ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 14)
  203. **Moran KR**, Lecturer. 2009. Ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 21)
  204. **Moran KR**, Lecturer. 2009. Ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 20)
  205. **Moran KR**, Lecturer. 2009. Ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 8)
  206. **Moran KR**, Lecturer. 2009. Ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 12)
  207. **Moran KR**, Lecturer. 2009. Ultrasound guided regional anesthesia. Presented at The Central Ohio PeriAnesthesia Nurses Association Spring Seminar, The Ohio State University, Columbus, Ohio, United States. (May 16)
  208. **Moran KR**, Lecturer. 2009. Ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 17)

209. **Norton JA**, Lecturer. 2008. Induction agents. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 9)
210. **Norton JA**, Lecturer. 2008. Neuromuscular blocking agents. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 15)
211. **Paquelet SE**, Lecturer. 2009. Introduction to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 19)
212. **Paquelet SE**, Lecturer. 2009. Introduction to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 19)
213. **Paquelet SE**, Lecturer. 2009. Introduction to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 21)
214. **Paquelet SE**, Lecturer. 2009. Introduction to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 5)
215. **Paquelet SE**, Lecturer. 2009. Intro to pain. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 23)
216. **Perez WJ**, Lecturer. 2008. Cardiac evaluation. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 18)
217. **Perez WJ**, Lecturer. 2009. Vascular anesthesia. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 17)
218. **Perez WJ**, Lecturer. 2009. Vascular anesthesia. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 18)
219. **Perez WJ**, Lecturer. 2009. Vascular anesthesia. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 23)
220. **Perez WJ**, Lecturer. 2009. Vascular anesthesia. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States.

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221. **Perez WJ**, Lecturer. 2009. Vascular anesthesia. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(June 9)
222. **Reilley TE**, Lecturer. 2008. Regional anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(August 12)
223. **Reilley TE**, Lecturer. 2008. What's new on mechanical ventilation? Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 18)
224. **Reilley TE**, Lecturer. 2009. Ultrasound and regional anesthesia for emergency medicine. Presented to EM residents ultrasound honors course, Department of Emergency Medicine, Columbus, Ohio, United States. (February 18)
225. **Rogers BM**, Lecturer. 2009. Neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(March 17)
226. **Rogers BM**, Lecturer. 2009. Neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(April 8)
227. **Rogers BM**, Lecturer. 2009. Neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(May 7)
228. **Rogers BM**, Lecturer. 2009. Neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(June 11)
229. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(July 14)
230. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(July 18)
231. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States.  
(August 15)

232. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 12)
233. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 6)
234. **Rogoski JS**, Lecturer. 2008. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 4)
235. **Rogoski JS**, Lecturer. 2009. Airway management. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 10)
236. **Rogoski JS**, Lecturer. 2009. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 25)
237. **Rogoski JS**, Lecturer. 2009. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 6)
238. **Rogoski JS**, Lecturer. 2009. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 16)
239. **Rogoski JS**, Lecturer. 2009. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 19)
240. **Rogoski JS**, Lecturer. 2009. Airway workshop. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 10)
241. **Roth AH**, Lecturer. 2008. Board review. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 2)
242. **Roth AH**, Lecturer. 2008. Board review. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)

243. **Roth AH**, Lecturer. 2008. Orientation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 2)
244. **Roth AH**, Lecturer. 2008. Preop evaluation and simulator. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 3)
245. **Roth AH**, Lecturer. 2008. Basic pharmacology and neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 4)
246. **Roth AH**, Lecturer. 2008. Anatomy pertinent to anesthesia and ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 8)
247. **Roth AH**, Lecturer. 2008. Sixty-year-old for revision of left forearm, AV shunt graft. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 23)
248. **Roth AH**, Lecturer. 2008. Introduction to ambulatory anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 10)
249. **Roth AH**, Lecturer. 2009. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 9)
250. **Roth AH**, Lecturer. 2009. Neuraxial anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 5)
251. **Roth AH**, Lecturer. 2009. Case presentation. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 26)
252. **Seelandt C**, Lecturer. 2008. Anesthesia for patients with neuromuscular disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
253. **Seelandt C**, Lecturer. 2008. Anesthesia for neurovascular procedure. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
254. **Seelandt C**, Lecturer. 2008. Introduction to neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio,

United States. (July 9)

255. **Seelandt C**, Lecturer. 2008. Transfusion medicine. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 9)
256. **Seelandt C**, Lecturer. 2008. Anticholinergics. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
257. **Seelandt C**, Lecturer. 2008. Introduction to thoracic anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 16)
258. **Seelandt C**, Lecturer. 2008. Introduction to neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 19)
259. **Seelandt C**, Lecturer. 2008. Introduction to neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 18)
260. **Seelandt C**, Lecturer. 2009. Neuroanesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 20)
261. **Severyn SA**, Lecturer. 2008. Chronic back pain. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 9)
262. **Severyn SA**, Lecturer. 2008. Anesthesia for patient with neurological and psychiatric disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 10)
263. **Severyn SA**, Lecturer. 2008. Acute pain. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 14)
264. **Severyn SA**, Lecturer. 2008. Neurologic and psychiatric disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 14)
265. **Severyn SA**, Lecturer. 2008. Chronic pain. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center,

- Columbus, Ohio, United States. (July 14)
266. **Severyn SA**, Lecturer. 2008. Acute pain. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 28)
  267. **Shao Y**, Lecturer. 2008. Transfusion of blood products affects outcome in cardiac surgery. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
  268. **Shao Y**, Lecturer. 2008. Hemodynamic monitoring. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
  269. **Shao Y**, Lecturer. 2008. AFIB update. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 16)
  270. **Shao Y**, Lecturer. 2008. Ventricular assisted devices. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 16)
  271. **Shao Y**, Lecturer. 2008. Patient monitors. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 17)
  272. **Shao Y**, Lecturer. 2008. Anesthesia for vascular surgery, part 2. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 21)
  273. **Shao Y**, Lecturer. 2008. Transesophageal echocardiography. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 21)
  274. **Shao Y**, Lecturer. 2008. Patient monitors. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 25)
  275. King and **Shao Y**, Lecturers. 2008. Cardiopulmonary bypass. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 13)
  276. **Shao Y**, Lecturer. 2008. Anesthesia for vascular surgery. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 14)

277. **Small RH**, Lecturer. 2008. Anesthesia machine. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 7)
278. **Small RH**, Lecturer. 2008. Positioning. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 17)
279. **Small RH**, Lecturer. 2008. Maternal and fetal physiology and anesthesiology. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 23)
280. **Small RH**, Lecturer. 2008. Methemoglobinemia. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 23)
281. **Small RH**, Lecturer. 2008. The OR: gas systems, environmental factors, and electrical safety. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 25)
282. **Small RH**, Lecturer. 2008. Intrathecal drug spread. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 28)
283. **Small RH**, Lecturer. 2008. Patient positioning. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 28)
284. **Small RH**, Lecturer. 2008. Hypoxia and equipment failure. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 28)
285. **Small RH**, Lecturer. 2008. Electrical safety – written board review. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
286. **Small RH**, Lecturer. 2008. The Operating Room: Medical gas systems, environmental factors and electrical safety. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)
287. **Small RH**, Lecturer. 2008. Temperature monitoring. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 31)



288. **Small RH**, Lecturer. 2008. Measuring depth of anesthesia. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 4)
289. **Small RH**, Lecturer. 2008. Anesthesia machine. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 7)
290. **Small RH**, Lecturer. 2008. Positioning. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 11)
291. **Small RH**, Lecturer. 2008. The operating room. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 14)
292. **Small RH**, Lecturer. 2008. Temperature monitoring. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 21)
293. Beget NR, **Small RH**, Halim M. 2009. Neuraxial anesthesia for an emergent delivery in a patient with severe pre-eclampsia and a complicated medical history. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
294. Spanos SP, **Small RH**, Rosborough KM. 2009. Comparison of J-Tip<sup>®</sup> needle-free injection of 1% lidocaine and needle infiltration of 1% lidocaine prior to labor epidural placement. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
295. Vogt KM, Ibinson JW, Gould DJ, Schmalbrock P, **Small RH**. 2009. Pain functional MRI differences between right and left handed subjects. Presented at Midwest Anesthesia Residents Conference, Chicago, Illinois, United States. (April 17-19)
296. **Smith TJ**, Lecturer. 2008. Introduction to OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
297. **Smith TJ**, Lecturer. 2008. Cholinesterase inhibitors. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 22)
298. **Smith TJ**, Lecturer. 2008. Cholinesterase inhibitors. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical

- Center, Columbus, Ohio, United States. (August 25)
299. **Smith TJ**, Lecturer. 2008. Regional anesthesia in children. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 28)
  300. **Smith TJ**, Lecturer. 2008. Nerve stimulator techniques. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 4)
  301. **Smith TJ**, Lecturer. 2008. Cholinesterase inhibitors. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 22)
  302. **Smith TJ**, Lecturer. 2009. OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 17)
  303. **Smith TJ**, Lecturer. 2009. OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 13)
  304. **Speas GJ**, Lecturer. 2008. Preoperative acid-base balance. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (August 14)
  305. **Speas GJ**, Lecturer. 2008. Intra-op emergencies. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 3)
  306. **Speas GJ**, Lecturer. 2008. Respiratory physiology and anesthesia – part 1. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 4)
  307. **Speas GJ**, Lecturer. 2008. Respiratory physiology and anesthesia – part 2: Monitoring and management of perioperative electrolyte abnormalities. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 11)
  308. **Speas GJ**, Lecturer. 2008. Acid-base disorders and fluid replacement. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 15)
  309. **Speas GJ**, Lecturer. 2008. Respiratory physiology: the effects of anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State

University Medical Center, Columbus, Ohio, United States. (September 19)

310. **Speas GJ**, Lecturer. 2008. Respiratory physiology and respiratory function during anesthesia. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 22)
311. **Speas GJ**, Lecturer. 2008. Preoperative acid-base balance. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 23)
312. **Speas GJ**, Lecturer. 2008. Patients with cardiovascular disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 29)
313. **Sutton CJ**, Lecturer. 2008. Anesthesia for pediatric cardiac surgery. Presented to CA-2/3 residents. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 6)
314. **Swan JF**, Lecturer. 2008. Renal physiology. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 9)
315. **Swan JF**, Lecturer. 2008. Anesthesia for otorhinolaryngology surgery. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 13)
316. **Swan JF**, Lecturer. 2008. Renal physiology. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 16)
317. **Swan JF**, Lecturer. 2008. Renal physiology and anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 20)
318. **Swan JF**, Lecturer. 2008. Renal physiology. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 23)
319. **Szabo MZ**, Lecturer. 2008. Preop evaluation. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
320. **Szabo MZ**, Lecturer. 2008. Preoperative evaluation. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 24)

321. **Szabo M**, Lecturer. 2008. Preoperative evaluation at OPAC. Presented to James Medical Staff Advisory Committee, The Ohio State University Comprehensive Cancer Center James Cancer Hospital and Solove Research Institute, Columbus, Ohio, United States. (September 12)
322. **Szabo MZ**, Lecturer. 2008. Preoperative evaluation (part 2). Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 24)
323. **Szabo MZ**, Lecturer. 2008. Preop evaluation. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 27)
324. **Szabo MZ**, Lecturer. 2009. Perioperative blindness. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 18)
325. **Traetow WD**, Lecturer. 2008. Corticosteroid insufficiency in acutely ill patients. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 30)
326. **Traetow WD**, Lecturer. 2008. How to prepare for the job market. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 3)
327. **Traetow WD**, Lecturer. 2008. Fatigue in anesthesia. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 7)
328. **Traetow D**, Lecturer. 2008. Inhaled nitric oxide therapy. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 14)
329. **Traetow WD**, Lecturer. 2008. The anesthesia machine. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 19)
330. **Traetow WD**, Lecturer. 2008. Inhaled anesthetic delivery. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 24)
331. **Turner KR**, Lecturer. 2008. Blood products and transfusion guidelines. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 16)

332. **Turner KR**, Lecturer. 2008. Transfusion therapy. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (September 23)
333. Beget NR and **Turner KR**, Lecturers. 2008. Cardiac assist devices. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 6)
334. **Turner KR**, Lecturer. 2008. Impact of new technology on options and coronary revascularizing. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (November 26)
335. **Turner KR**, Lecturer. 2008. Patient monitoring. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 1)
336. **Turner KR**, Lecturer. 2008. Lung volume reduction. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 5)
337. **Turner KR**, Lecturer. 2008. Cardiovascular pharmacology. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 8)
338. **Turner KR**, Lecturer. 2008. Anesthesia for the patient with cardiovascular disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 12)
339. **Turner KR**, Lecturer. 2008. Blood products and transfusion guidelines. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 15)
340. **Turner KR**, Lecturer. 2008. Transfusion therapy. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 16)
341. **Turner KR**, Lecturer. 2008. Patients with cardiovascular disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 19)
342. **Turner KR**, Lecturer. 2009. Ventricular assist devices outside the heart room. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 22)

343. **Turner KR**, Lecturer. 2009. Ventricular assist devices outside the heart room. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 29)
344. **Turner KR**, Lecturer. 2009. CNS events after cardiac surgery. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 12)
345. **Turner KR**, Lecturer. 2009. Congenital heart disease. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 19)
346. **Turner KR**, Lecturer. 2009. MV stenosis. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 26)
347. **Turner KR**, Lecturer. 2009. Kidney protection in cardiac surgery. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 9)
348. **Turner KR**, Moderator. 2009. Coronary and vascularization C-CABG vs. stent management of perioperative antithrombotic therapy, case management conference. Presented at Society for Cardiovascular Anesthesiologists, San Antonio, Texas, United States. (April)
349. **Turner KR**, Lecturer. 2009. Aortic valve stenosis. Presented at cardiothoracic conference, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 30)
350. **Vadhera R**, Moderator. 2009. Why do mothers die? Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 23)
351. **VanFossen D**, Lecturer. 2009. Pre-op medications. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 12)
352. **VanFossen D**, Lecturer. 2009. Acute pain. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 21)
353. **VanFossen D**, Lecturer. 2009. Therapy options for pain following thoracic procedures. Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 22)

354. **Weaver JM**, Lecturer. 2008. Dental exam. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 15)
355. **Weaver JM**, Lecturer. Local anesthetics. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 13)
356. **Weaver JM**, Lecturer. 2009. Dental exam. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 23)
357. **Weaver JM**, Lecturer. 2009. Pharmacology of local anesthetics. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 29)
358. **Weaver JM**, Lecturer. 2009. Local anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 2)
359. **Weaver JM**, Lecturer. 2009. Local anesthetics. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 10)
360. **Weaver JM**, Lecturer. 2009. Dental exam. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 12)
361. **Weaver JM**, Lecturer. 2009. Local anesthetics. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 19)
362. **Weed H**, Lecturer. 2009. Preoperative evaluation (part 1). Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 23)
363. **Werner JG**, Lecturer. 2009. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 20)
364. **Werner JG**, Lecturer. 2009. Monitors. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (June 3)
365. **Xia Y**, Lecturer. 2008. Centroneuraxis blocks. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (July 16)
366. **Xia Y**, Lecturer. 2008. Introduction to OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United

- States. (November 13)
367. **Xia Y**, Lecturer. 2008. Introduction to OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 10)
  368. **Xia Y**, Moderator. 2008. An unusual complication of continuous epidural anesthesia. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University Medical Center, Columbus, Ohio, United States. (December 11)
  369. **Xia Y**, Lecturer. 2009. OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (January 14)
  370. **Xia Y**, Lecturer. 2009. OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 11)
  371. **Xia Y**, Lecturer. 2009. Obstetric epidurals and chronic adhesive arachnoiditis. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 25)
  372. **Xia Y**, Lecturer. 2009. Epidural and spinal anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (February 26)
  373. **Xia Y**, Lecturer. 2009. Hypertensive disease in pregnancy. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 2)
  374. **Xia Y**, Lecturer. 2009. Peripartum care of cocaine abusers. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 6)
  375. **Xia Y**, Lecturer. 2009. Complementary and alternative therapies. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 16)
  376. **Xia Y**, Lecturer. 2009. Maternal and fetal physiology and anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 17)
  377. **Xia Y**, Lecturer. 2009. Centroneuraxis blocks. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 19)



378. **Xia Y**, Lecturer. 2009. Anesthesia for obstetrics. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 23)
379. **Xia Y**, Lecturer. 2009. OB anesthesia. Presented to medical students, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 22)
380. **Xia Y**, Lecturer. 2009. Maternal and fetal physiology and anesthesia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 14)
381. **Yablok DO**, Lecturer. 2009. Malignant hyperthermia. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (March 30)
382. **Yablok DO**, Lecturer. 2009. OBF: pheochromocytoma and carcinoid. Presented to CA-2 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 6)
383. **Yablok DO**, Lecturer. 2009. Pheochromocytoma and carcinoid. Presented to CA-3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 13)
384. **Yablok DO**, Lecturer. 2009. Anesthesia for patients with liver disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 14)
385. **Yablok DO**, Lecturer. 2009. Hepatic physiology and pathophysiology. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 16)
386. **Yablok DO**, Lecturer. 2009. Anesthesia for patients with liver disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 20)
387. **Yablok DO**, Lecturer. 2009. Anesthesia for patients with liver disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 23)
388. **Zvara DA**, Lecturer. 2008. Anesthesia for cardiac surgery. Presented to CA-1 residents, The Ohio State University Medical Center, Columbus, Ohio, United States. (October 23)
389. **Zvara DA**, Moderator. 2008. Perioperative glucose monitoring. Presented at Department of Anesthesiology Grand Rounds, The Ohio State University

Medical Center, Columbus, Ohio, United States. (November 20)

390. **Zvara DA**, Lecturer. 2009. Anesthesia for patients with respiratory disease. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (April 27)
391. **Zvara DA**, Lecturer. 2009. Acid base balances. Presented to CA-1 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 1)
392. **Zvara DA**, Lecturer. 2009. Risks of obesity during surgery. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 4)
393. **Zvara DA**, Lecturer. 2009. Anesthesia for cardiac surgery. Presented to CA-2/3 residents, Department of Anesthesiology, The Ohio State University Medical Center, Columbus, Ohio, United States. (May 11)

## Clinical Sites

### *Clinical Operations University Hospital*



**Luis A. Lopez, MD**  
Clinical Associate Professor  
Director of Clinical Operations

### **Summary of Clinical Activities**

Despite being short-staffed on almost a daily basis, we have been increasingly busy with our clinical work. We have seen record-breaking numbers of hours of surgery almost every month this year to the tune of a 10 to 15% increase. A few examples of our growth include:

- We have opened more operating rooms (OR) in University Hospital in order to meet the demand for surgery. We are now running 24 rooms on a daily basis.
- We have extended the block of hours required for surgery on a daily basis in the James and plan on doing the same for each OR in University Hospital.
- We have expanded our off site services, especially in endoscopy, pulmonary, and EP labs on top of expansions in ECTs, invasive radiology, magnetic resonance imaging (MRI), and radiology oncology. We have created ORs 95, 96, 97, 98, and 99 specifically to deal with these procedures as all of the other ORs are already full on a daily basis.
- We have increased the number of certified registered nurse anesthetists (CRNA) we have working late shifts (7 pm and after) in order to assist our residents with the increasing number of late cases. Many of these late cases are scheduled in order for us to provide anesthesia for the influx of new surgeons.
- Additional weekend shifts for both faculty and CRNAs have helped us provide better patient care during our busy weekends. We have added a Saturday/Sunday beeper call for faculty in the form of a weekend L1 in addition to an extra CRNA beeper call on both weekend days.

In order to keep up with our increasing needs, we have created several new daily assignments. The following assignments have been especially important in our effort to continue to provide exceptional patient care:

- The addition of the swing faculty has helped to make a proper transition in leadership from the daytime into the evening in terms of OR management.
- We have added the RAAPM assignment to the daily schedule which has given us a large number of regional blocks on a daily basis. This has been both a great teaching and training tool for residents, and a great way to provide more personalized care for our patients.
- The addition of the post anesthesia care unit (PACU) daily assignment has also been a great way for our faculty to work more closely with the residents on rotation. Most importantly, this has helped us do a better job of monitoring patients in the immediate post-op stage. This has helped us give our patients more attention and, in turn, increased our patients' satisfaction.

This year we adopted a new scheduling program, Spinfusion. We have worked diligently with this software and its creator in order to develop a better system for the complexity of the anesthesiology schedule. Several phone calls and meetings have been required for the multiple fixes needed in order to improve efficiency in schedule generation. Increasing the number of daily assignments and providing anesthesia care wherever needed has presented several challenges. However, we plan to have the program running exactly as we need in the near future.

## ***Cardiothoracic and Vascular Anesthesia – Ross Heart Hospital***



**Michael J. Andritsos, MD**

Assistant Professor Clinical

Director, Cardiothoracic and Vasular Anesthesia

The Division of Cardiothoracic and Vascular Anesthesia is continuing to progress in areas of research, education and clinical services throughout the academic year of 2008-2009. Clinically, we continue to expand our horizons in cardiac anesthesiology, continuing to perform robotic cardiac and thoracic procedures. We experienced a steady plateau in the number of cardiac cases, averaging approximately 65 open heart cases per month. We continue performing CABG, OPCAB, and CABG-valve surgeries, VAD procedures, and thoracoscopic MAZE procedures. We are averaging approximately 4 heart transplants per month. In thoracic anesthesiology, the volume of thoracotomies continues to rise with VATS procedures and lung volume reduction surgery. In vascular anesthesiology, we are seeing a steady increase in the number of endovascular procedures for abdominal and thoracoabdominal aneurysms.

In echocardiography, we have acquired a transesophageal echocardiography (TEE) machine with real-time 3-D capabilities and are participating in multiple research endeavors with our cardiology colleagues implementing 3-D analysis of mitral and aortic valve pathology. Our residency program has now incorporated an elective rotation in perioperative TEE.

Administratively, we are maintaining operating room efficiency at Ohio State's Ross Heart Hospital, as reported by the Ross Heart Hospital Quality Management Committee. We continue to minimize delays in operating room start times with the best start times among the three hospitals and a reduction of case turnover times.

Our cardiovascular fellowship program, under the direction of Galina Dimitrova, MD, is fully functional under Accreditation Council for Graduate Medical Education (ACGME) status. We recruited one Fellow for the upcoming year (2009-2010). We have actively recruited two candidates for the following year (2010-2011).

In the areas of research, we continue to excel with numerous publications and continued research awards. Notably, the following have excelled in their research over the past academic year:

- Mark Gerhardt, MD, PhD
  - 5 peer-reviewed journal articles
  - 1 peer-reviewed abstract

- Co-author 1 anesthesiology textbook chapter
- PI in 4 OSU IACUC protocols
- PI in Society of Cardiovascular Anesthesiologists MidCareer grant - \$40,000
- CO-I in The Heart Center Translational Research Award - \$50,000
  
- Hamdy Elsayed-Awad, MD
  - PI in 3 active OSU IRB protocols
  - 2 peer-reviewed journal articles
  - 2 peer-reviewed journal articles submitted
  - 1 presentation at the IARS annual meeting in March 2009
  
- Katja Turner, MD
  - PI in 1 active OSU IRB protocol; submitted a new amendment to include new testing as part of the protocol
  - Serves on the SCA annual meeting planning committee
  - Moderator during SCA session
  - 1 presentation at the SCA annual meeting in April 2009
  - 1 presentation at ASA annual meeting in October 2009
  - 1 presentation at Chest Physicians annual meeting in November 2009
  
- Michael Andritsos, MD
  - 2 presentations at the SCA annual meeting in April 2009
  - 2 book chapter publications
  - Co-PI in an active OSU IRB Protocol
  - Reviewer for Faculty 1000
  
- Yanfu Shao, MD
  - Director, International Chinese Cardiovascular Anesthesia Forum for Transesophageal Echocardiography in China 2008 and 2009
  - 2 presentations at the Chinese Anesthesiology Society of Anesthesiology 2008, 2009
  - Vice-president and chair of International Affair Committee of Chinese American Society of Anesthesiology
  
- Galina Dimitrova, MD
  - 1 presentation at the Ohio Society of Anesthesiologists 69th annual meeting

In summary, the Division of Cardiothoracic and Vascular Anesthesia has grown and seen success, specifically in the areas of research and education. We continue to excel in clinical service, as evidenced in our operating room efficiency and patient satisfaction.

## *Anesthesia Services at Cancer Hospital Research Institute*



**W. Daniel Traetow, MD**

Assistant Professor Clinical  
Director of Clinical Anesthesia  
James Cancer Hospital and Solove Research Institute

### **Mission Statement**

The Ohio State University Comprehensive Cancer Center – James Cancer Hospital and Solove Research Institute is one of six “Signature Programs” at The Ohio State University Medical Center, and its volume and scope of services will continue to expand in the future.

Just as it is the goal of Ohio State’s Medical Center to have OSUCCC-James represent a top-tier National Cancer Center (NCC) organization, our goal is to continue to improve patient safety, provide state of the art anesthesia, and demonstrate to our patients the highest level of caring professionalism.

Surgical cases for fiscal year 2009 numbered 5,074, which is 300 fewer cases than last year. The acuity of the procedures and the total surgical time is increasing. We are performing many more free musculocutaneous grafts than in the past. We have also expanded our surgical faculty in almost every discipline.

We are performing trials on several new pieces of anesthesia equipment to monitor our patients safely and noninvasively. Many of our new faculty have shown an interest in performing the complex cases which are somewhat unique to the James.

The cases were distributed as follows:

- 2,554 ambulatory service unit (ASU/ADS) cases.
- 2,520 inpatient cases.
- Surgical oncology and thoracic surgery accounted for 3/5 of all cases.

In combination with nursing and our surgical colleagues, we are investigating alternatives to make operating rooms run more efficiently. We all love our work; however, not doing elective cases for 24 hours a day.

## *Ohio State University Hospital East*



**Fernando L. Arbona, MD**

Assistant Professor Clinical

Clinical Director, Ohio State University Hospital East

We continue to be very busy in the operating rooms at OSU East. Our total number of surgical cases increased by 243 cases (+3.1%) for the calendar year 2009. With the budgeted cases for OSU East's operating rooms set at 7878 for the calendar year 2009, the increase in actual cases for the year was above the budgeted growth expected by +2.1%. We finished the year strong with the majority of this growth coming from June through December, when we were above budget all of these months by a total of 343 cases. This represents OSU East performing surgical cases at +7.7% above budget for the final seven months of the calendar year 2009. In addition to a growth in total operative cases performed at OSU East, there was also a larger growth in total surgical hours. Calendar year 2009 yielded 12,766 operative hours which, compared to the 12,251 from 2008, presented an increase of 515 surgical hours (+4.2%) for the year. This slightly higher growth in surgical hours compared to surgical cases represents an increase in longer duration, and more complex cases which has been the general trend at OSU East over the past two years.

### **OSU East Surgical Cases for Calendar Years 2008 & 2009**

Calendar Year 2008	7,803
Calendar Year 2009	8,046
Change	+243
% Change	+3.1%

### **OSU East Surgical Cases for Calendar Year 2009, Budgeted vs. Actual**

Budgeted Cases CY 2009	7878
Actual Cases CY 2009	8,046
Change	+168
% Change	+2.1%



### OSU East Surgical Hours for Calendar Years 2007 & 2008

Calendar Year 2008	12,251
Calendar Year 2009	12,766
Change	+515
% Change	+4.2%

In addition, we still continue to grow our application of ultrasound guidance for regional anesthesia in our patient care. With the continued excellent work by our regional anesthesia and acute pain nurse, Laurah Carlson, we have been able to continue to expand our regional anesthesia and perineural catheter service. This has been evidenced by our consistently high patient satisfaction scores, especially in regards to pain control in the operating room venue, as well as increased revenue generation from our regional anesthesia since her start in mid March 2008. Also, with Babak Khabiri, DO being named the director of regional anesthesia, and John Norton, DO being named the regional anesthesia fellowship director, we are poised to expand our academic progression at OSU East. This coupled with the increase in surgical hours, as well as our increase in procedures performed outside of the operating rooms in the form of regional anesthetic procedures, we are still able to continue to provide efficient, high-quality, cutting-edge, evidence-based care to our patients and surgeons.

OSU East Anesthesiology has also been active in the academic arena during the past year. Fernando Arbona, MD, Babak Khabiri, DO, and John Norton, DO continue to diligently work under contract with Cambridge University Press, writing a textbook on ultrasound guided regional anesthesia, which is expected due for publication during the summer of 2010. Also, Drs. Arbona, Khabiri and Norton have a case report regarding ultrasound and regional anesthesia that has been accepted for publication in the *Journal of Clinical Anesthesia* for June 2010. In addition, there have been several studies, both multi-center and only OSU East-based, performed at OSU East. We currently are actively enrolling patients in two IRB-approved studies, while we continue to create new research projects. We are currently in the IRB process with several other studies, some as joint studies with other surgical services.

Fernando L. Arbona, MD is clinical director for anesthesiology at OSU East. The other members of the anesthesia faculty with a 100% FTE allocation to OSU East are Babak Khabiri, DO (director of regional anesthesia), John Norton, DO (regional anesthesia fellowship director), Alan Kover, MD and, as of January 1, 2010, Charles Hamilton, MD. Other faculty members who have 50% FTE allocation to OSU East include Andrew Roth, MD and Kenneth Moran, MD. We have approximately a 25% contribution of work at OSU East by Heather Gensel, DO, though she does not have any OSU East FTE allocation as of yet. We all continue to work well with the pre-, intra- and post-operative nurses, surgeons, and Medical Management Team (MMT) to ensure high-quality and efficient preparation of the operative patients. We also continue to work with the operating room management team regarding the OR block time schedule, in which the availability of time based on the surgeon's utilization of blocked time, to further improve

the efficiency of the operating rooms. Currently there are a total of 13 functioning operating rooms, which will soon be 14. With the addition of the late-release block time of an Ortho-Trauma service at OSU East this past year, all 13 currently available operating rooms have fully blocked surgical time almost every day.

For the upcoming year, we expect our surgical volume to continue to vary, with a resultant eventual growth over the next few years. With the opening of the Gowdy Fields surgery center, there is going to be a gradual shift of some of our ENT cases and, more significantly, all of our hand cases to this new site during this year. The latter of the two (hand cases) will have the most significant effect on our case numbers. Eventually this loss of cases will be filled in by new surgeons from several specialties. We have already begun to see the addition of some of these surgeons over the past year, and expect more in the years to come. This may take some time, though, so there may be an initial dip in the case numbers or surgical hours during the year before it increases again. Though, in the long term, we expect an overall growth in surgical volume at OSU East.

The area specific to anesthesia that we wish to develop during the next year involves leading research studies that can have a significant impact on clinical practice, while maintaining and continuing to improve our high-quality and efficient patient care.

## *Ohio State's Eye & Ear Institute*



**John S. Rogoski, DO**

Assistant Professor Clinical  
Director, Outpatient Surgery Center at Ohio State's  
Eye & Ear Institute

The Outpatient Surgery Center is an outpatient department of The Ohio State University Medical Center (OSUMC), which provides services related to elective outpatient procedures in the fields of otolaryngology, ophthalmology, upper extremity orthopedics, and plastic surgery. The OSUMC board of directors and the OSUMC medical staff, in conjunction with the center's medical director, director, and/or clinical manager, assess, plan, implement, and evaluate the delivery of care and services. The center's leadership team is responsible for ensuring that the delivery of care provided is consistent with the mission, standards, and policies established for patient care. The center's leadership team promotes an environment that fosters empowerment through active participation in strategic planning and development of processes that ensure adequacy of services and resources to meet the current and projected community needs, policy establishment, and professional growth.

The objective of The Ohio State University Outpatient Surgery Center is to deliver excellent surgical, procedural, and anesthesia services to those we serve in accordance with the standards set forth by The Joint Commission, Centers for Medicare & Medicaid Services (CMS) Conditions of Participations for Hospitals, and the vision and mission statements of OSUMC. The scope of care is designed to provide appropriate care and services for all patients in a timely manner.

Utilizing a multi-disciplinary approach in the delivery of patient care, our services promote continuous quality and performance improvement activities provided in an environment where collaboration and multi-disciplinary approaches to problem identification and resolution are the expectation. Important criteria and thresholds are measured and continuously monitored through our quality and performance improvement process to optimize patient outcomes and ensure the highest level of satisfaction for all of our customers. Results of our quality and performance improvement activities are used to improve patient outcomes and enhance our services and our staff performance.

The center consists of six operating rooms, preoperative and postoperative patient care areas along, with reception and waiting areas located on the first floor of The Ohio State University Eye & Ear Institute. The center is staffed from 6:30 am to 4:30 pm, Monday through Friday, primarily for adult patients requiring surgical intervention under local anesthesia, monitored anesthesia care, regional anesthesia, or general anesthesia. Patients

are outpatients and released the day of service. The center does not have the capacity for overnight patient stays. The patients are required to have the ability to understand and carry out their discharge instructions or have a responsible adult who will assist them in fulfilling these needs.

All procedures performed at the Outpatient Surgery Center are part of the core privileges approved by OSUMC.

The following types of procedures are not performed at the center:

- Are associated with the risk of extensive blood loss.
- Require major or prolonged invasion of body cavities.
- Directly involve major blood vessels.
- Are an emergency or life threatening in nature.
- Noted on the CMS inpatient only list. This list will be reviewed and updated annually.

In its short time of operation, the center's patient satisfaction scores and quality measures have been among the highest in its peer group and nationwide.

## *Ohio State University Preoperative Assessment Center (OPAC)*



**Barbara M. Rogers, MD**  
Assistant Professor Clinical  
Co-director, OPAC



**Heather C. Eck, MD**  
Assistant Professor Clinical  
Co-director, OPAC

During 2009, the surgery cancellation rates for patients who had gone through The Ohio State University Medical Center Preoperative Assessment Center (OPAC) averaged 5.3% lower than for patients who had not gone through OPAC.

OPAC helped to decrease surgery delays by:

- Having type and cross done at our clinic, which is good for 30 days
- Having a JCHO-approved history and physical on every patient
- Having patients register at OPAC; they do not have to take as much time to register the day of surgery

Other accomplishments at OPAC included:

- Moved to an electronic medical record
- Continued to have high positive feedback from patients
- Continued to see more patients
- Helped the OSC by having a nurse visit, although we no longer perform this service
- Our nurses conducted pre-op teaching about soap
- Helped infectious disease by doing nasal swabs for *methicillin-resistant Staphylococcus aureus* (MRSA)
- Participated in a blood bank study by letting the researchers ask our patients if their blood samples can be used for research
- Coordinated visits to other specialists as needed

- Added sleep apnea questions to our assessment at the recommendation of the sleep apnea committee; also sent patients for sleep studies as time permitted
- Worked on a OneSource page
- Made an OPAC informational video

## ***Ohio State University Comprehensive Spine Center***



**Steven A. Severyn, MD, MBA**  
Assistant Professor Clinical  
Director, Pain Medicine Services  
Director, Pain Section, The Ohio State University  
Comprehensive Spine Center  
Director, Multi-disciplinary Pain Medicine Fellowship

### **Overview**

During the 2009-2010 academic year, the pain services of the Department of Anesthesiology continued to successfully execute its mission of evaluating and managing the pain complaints of patients afflicted with acute and chronic pain conditions, or the combination of both, in outpatient and inpatient settings across the multiple institutions. Utilization of the consolidated inpatient hospital services for management of acute and chronic pain conditions remained vibrant and level with respect to the prior year. Operations and revenue of the principal outpatient delivery platform, the OSUMC Comprehensive Spine Center (Spine Center) of which the pain section is maintained by the Department of Anesthesiology, continued to contribute to the financial health of the medical center to a dramatic degree. Maintenance of Spine Center medical records successfully transitioned to the electronic IHIS system in April 2010. The March 2010 internal GME review of the four-department multi-disciplinary pain medicine fellowship, of which the Department of Anesthesiology is the principal participant, has been concluded, but at this time has not yet been presented to the GME committee. The department attracted, but was unsuccessful on two separate occasions in recruiting, an internationally-known pain medicine physician who we desire to further a program of academic excellence and research in keeping with the overall Medical Center mission. Establishing an inpatient consultation service at the OSU Hospital East and re-establishing a separate pain medicine facility continue to be future objectives.

### **Inpatient Pain Medicine Services, Department of Anesthesiology**

Inpatient (“acute”) pain services provided to patients of the OSU, James Cancer, and Ross Heart Hospitals is a shared responsibility of a group of four regularly-rotating core physicians, three of whom participate in both outpatient and the full spectrum of inpatient services to bring a common skill set to both settings, resulting in aligning inpatient and outpatient care. Physician weekend rounds assisted by a dedicated resident or Fellow have substantially improved continuity of care and availability for responding to weekend consultation requests. The inpatient service provides care across a spectrum of acute and chronic pain conditions in an active consulting role that includes active patient management. The daily inpatient service census on average remains nearly evenly distributed between care of patients receiving postoperative upper and lower-thoracic

epidural infusion and the active consultant practice for patients experiencing acute and/or chronic pain.

The acute pain service provides a steadily increasing number of implanted intrathecal catheter and programmable infusion pumps for the care of patients with pain due to chronic non-cancer conditions, pain due to cancer conditions, and management of spasticity of central nervous system etiology. These patients receive their principle care through the Departments of Anesthesiology, Internal Medicine Pain & Palliative Medicine, and Physical Medicine & Rehabilitation respectively. Patients receiving intrathecal infusion of opioids for pain management constitute the only exception in which the Department of Anesthesiology also manages oral analgesic medication prescribed for cancer pain. The regular presence of physicians experienced in pump management on the inpatient service continues to foster a closer integration of the individual services, benefiting patient satisfaction and the efficient provision of care.

The main deficiency of the inpatient program continues to be its inability to continue pain management services that rely on regular prescription of controlled medication once the patient is discharged from the hospital. Patients are discharged to the follow-up care of either the admitting or the patient's primary care physician, generally receiving higher doses of controlled medication than those that had been required prior to admission. Allowing the inpatient service to schedule continued care through the pain section, Spine Center does not adhere to the delivery model of the currently available outpatient platform.

**Pain Section, The Ohio State University Comprehensive Spine Center (Spine Center)**

The complement of Department of Anesthesiology physicians participating in the Spine Center increased to a total of 4.0 FTE positions for provision of evaluation and management (E&M), invasive procedural, and operative surgical services to patients who are experiencing pain due to spinal and non-spinal conditions or who are experiencing muscle spasticity due to central nervous system injury or diseases. The Spine Center program's contribution to the financial stability of the medical center expressed as excess revenue over expense for current operations is not only exceptionally strong, but has also continued to escalate. Department of Anesthesiology physicians serve in intake, procedural, and follow-up care capacities as the pain section for the center. Performance of operation relies upon the facilities of The Ohio State University Hospital East operative suites and performance of major nerve block procedures relies upon the OSU East invasive radiology suites so as to allow for the incorporation of conscious sedation and associated patient recovery.

The availability of our physicians for care of chronic pain conditions not due to spinal diseases continues to be under-recognized within the Medical Center at large, as indicated by a limited occurrence of referrals for conditions other than spinal etiology. Patient referral for non-spinal pain conditions from outside the institution is even less common, and may be falling subject to scheduling bias or role appreciation within the



Spine Center. Although our FTE capacity to accept new patients for medical management has increased, the desire of the Medical Center to devote department FTEs to expanding a relatively straightforward evaluation and management service is understandably weak. Addressing these obstructions to consultation and management, patient care growth opportunities will likely require the re-establishment of a pain medicine center that, if not housed at a separate location, will at least be recognizable as a distinct clinical entity. The Departments of Internal Medicine and Family Practice have communicated their preference not to receive any patients from us who seek to re-establish their primary care under an OSUMC physician if the patient has been seen by our service. Further, those departments devote approximately 30% of their outpatient clinical care to management of chronic pain. The Medical Center may yet reconsider the benefits of supporting a pain medicine entity separate from the Spine Center. Caution should be taken regarding our pursuing this initiative so as not to disadvantage our staffing abilities.

### **Pain Medicine Operations at Corrections Medical Center**

Pain medicine consultation and procedural services for the care of inmates of the Ohio Department of Corrections largely takes place at the Corrections Medical Center (CMC) Clinic in south Columbus. Two of our physicians rotate at the Corrections Medical Center on a regular basis, finding greater efficiencies of practice there than had previously been attainable when all inmate care was performed at OSUMC. All consultations and the majority of routine lumbar epidural steroid injections delivered to this population are performed at this location without fluoroscopic guidance during morning clinics. Fluoroscopic procedures, however, can only be provided at OSUMC operating room sites due to security concerns, up to six cases routinely in an afternoon. Beginning July 2010 we will double our availability to devote a full day each week to this activity, the morning for CMC clinic and the afternoon for fluoroscopic-guided injection procedures, in response to increased demand for services and the resurgence of a significant back-log of patient referrals. Experience continues to show that this activity requires an equal division of time between clinic presence and operative scheduling services.

### **Multi-disciplinary Pain Medicine and Regional Anesthesia Fellowship Programs**

Our multi-disciplinary pain medicine fellowship program integrates members of four academic departments (anesthesiology, neurology, physical medicine & rehabilitation, and psychiatry) and distributes the Fellow's training experiences among chronic outpatient non-cancer pain, cancer pain, palliative medicine, pediatric pain, acute and postoperative inpatient pain, chronic inpatient pain, interventional pain management, and the outpatient clinics of the three non-anesthesiology departments. Morbidity and mortality conferences and pain medicine journal club meetings are category 1 credit activities. Research activity remains scant despite encouragement. The faculty complement remains at an institutional all-time high. The fellowship enjoys ACGME accreditation for a period of two years for a complement of one Fellow trainee. Findings of the March 2010 internal GME review have not yet been presented to the GME

committee. A biannual RRC accreditation site visit is scheduled to take place in August 2010.

The regional anesthesia fellowship has transitioned to the OSU Hospital East division of the department.

## Clinical Director Reports

### *Acute Pain Medicine Services*



**Stephen E. Paquelet, MD**  
Assistant Professor Clinical  
Section Director, Acute Pain

#### **Inpatient Pain Medicine Services, Department of Anesthesiology**

Inpatient pain medicine services is a shared responsibility of a group of four regularly rotating core physicians board certified in pain medicine. The inpatient service provides a full spectrum of inpatient care for both acute and chronic pain conditions in an active consulting role that also includes active management of patients' needs. The service also is able to utilize a host of interventional pain procedures to help treat patients. Examples of routine interventional procedures include (but is not limited to) epidural steroid injections, lumbar and stellate sympathetic blocks, implanted intrathecal catheters and programmable infusion pumps, spinal cord stimulation, tunneled epidural catheters, and various regional anesthesia techniques.

The daily inpatient service census, on average, remains nearly evenly distributed between care of patients receiving postoperative epidural infusion and the active consultant practice for acute and chronic pain. In 2009 the service managed approximately 700 postoperative epidural infusions and 650 consults for acute and chronic pain conditions. In total there were approximately 3,900 inpatient visits.

The addition of a weekday evening RN shift improved continuity of care, timely responsiveness to issues concerning epidural drug delivery, and satisfaction of both patients and customer physician services, and also substantially reduced the level of responsibility for epidural management during evening hours that was previously relegated to the on-call anesthesiology resident team. Physician weekend rounds, generally assisted by a dedicated resident or Fellow, continue to yield substantially improved continuity of care and availability for responding to weekend consultation requests.

The Acute Pain Service provides a steadily increasing number of implanted intrathecal catheter and programmable infusion pumps for the care of patients with pain due to chronic non-cancer conditions, pain due to cancer conditions, and management of spasticity of central nervous system etiology. These patients receive their principle care through the Departments of Anesthesiology, Internal Medicine Pain & Palliative

Medicine, and Physical Medicine & Rehabilitation, respectively. Patients receiving intrathecal infusion of opioids for pain management constitute the only exception in which the Department of Anesthesiology also manages oral analgesic medication prescribed for cancer pain. The regular presence of physicians experienced in pump management on the inpatient service continues to foster a closer integration of the individual services, benefiting patient satisfaction and the efficient provision of care.

## *Critical Care Medicine*



**Thomas E. Reilley, DO, FCCM**  
Associate Professor  
Section Director, Critical Care Medicine

The Department of Anesthesiology added two new fellowship-trained faculty members to its critical care medicine division, Thomas Papadimos, MD, FCCM and Deven Kothari, MD. Dr. Papadimos comes to the department from the University of Toledo and the University of Michigan (Ann Arbor) Departments of Anesthesiology, where he is also active and has numerous research projects underway. He also has a background in pathology and a Master of Public Health from Johns Hopkins. Dr. Kothari has recently finished his critical care training at the Cleveland Clinic.

Both the surgery and anesthesiology divisions of critical care medicine play a role in the Critical Care Task Force of The Ohio State University Medical Center and were instrumental in developing ultrasound applications in bedside critical care. Nine new dedicated SonoSite TurboMax machines were placed in all of the intensive care units by the task force under the leadership of Clay Marsh, MD, FCCM, associate vice president and vice dean of Ohio State's Medical Center. Thomas Reilley, DO, FCCM has been qualified as a leader or "SuperUser" of this technology.

The role of critical care has been designated as one of six task forces by OSUMC, and the Department of Anesthesiology has been an active participant. For example, the division expanded its teaching and patient care to Ohio State's Richard M. Ross Heart Hospital this past December. Ronald Harter, MD, Jay J. Jacoby professor and chair, continues to recruit in this subspecialty area.

## *Neuroanesthesia*



**Sergio D. Bergese, MD**  
Assistant Professor Clinical  
Director, Neuroanesthesia Services

The Neurosciences Signature Program strives to create the Neurosciences Institute as a top-ranked facility with a strong foundation of research, education and patient care. It is known for compassionate, full-service, individualized “state-of-the-art” care, cutting-edge research and a scholarly environment in an interdepartmental and interdisciplinary collaboration.

Ranked among the most competitive programs, we appraise our success by evaluating the program’s current state, external competition, *U.S.News & World Report* rankings, and the ability to strengthen other signature programs. The following selected opportunities will have an immediate, positive impact on the neuroscience program:

- Consolidate the neuroscience research programs to facilitate translational research and collaboration between clinicians, clinical researchers and basic science researchers.
- Consolidate the inpatient and outpatient care areas to maximize expertise specific to the neurosciences population and improve care coordination.
- Enhance the educational aspect through additional fellowship positions.
- Develop a Neurosciences Institute to coordinate all neurosciences activity, drive strategic development and uphold accountability for financial performance.
- Develop a neuromodulation anesthesia program to match neurostimulation, delineate abnormal brain circuitry underlying disease processes, as well as develop neuromodulation devices and novel therapeutic strategies for treatment of neurological and psychiatric disorders and autonomic disorders.
- Expected outcomes include an increase in average daily census of 10 patients per day (from 75 to 85).

The scope and complexity of the program warrants the development of an institute to encompass all aspects of the neurosciences program. The institute would be responsible for setting the strategic priorities of the neurosciences program. The institute will also be accountable for all financial responsibilities.

A major focus of our plan is around space consolidation, infrastructure building and faculty/research recruitment. With these investments, the average daily census will increase from 75 to 85 patients per day. Louis Caragine, MD and the Departments of Anesthesiology and Neurosurgery have developed a task force to identify a leader to develop a neuro-SICU program.

The neuroanesthesia fellowship is fully approved under the supervision of Sergio Bergese, MD. We have one Fellow who has completed her training, Katie Figg, MD, and is now a faculty member in the Department of Anesthesiology. In 2010, Demicha Rankin, MD will begin a 6-month neuroanesthesia fellowship, and Kumar Suresh, MD is also being interviewed for a fellowship position.

Neuroanesthesia, as part of the neurosciences program, will continue to recruit heavily to meet our surgical clinical needs. Fellows have strong intentions to stay on staff. Not only are we going to focus our efforts on recruiting these candidates, but we will also pursue additional candidates from around the country. A combined effort was made with the Department of Neurosurgery in the *Journal of Anesthesiology* to promote this prestigious position.

Sergio Bergese, MD, was recently promoted to director of clinical trials and neurological research. As part of this, neuroanesthesia will continue its expansion of clinical research. The Office of Research Support in Cramblett Medical Clinic has also been utilized by a technical editor and 9 clinical research professionals. This office fully complies with patient care and confidentiality involved in appropriately conducting department- and sponsored-clinical trials.

A total of 13 IRB-approved research protocols are actively enrolling, among which 6 are phase-3, multi-center trials. We have several active grants which have generated over \$1 million for the 2009-2010 fiscal year. Six papers have been accepted and approved for publication. Twenty-six abstracts have been presented at scientific societies' meetings. Currently we have 4 Fellows in clinical research working on different research projects and multiple abstracts for the upcoming Midwest Anesthesia Residents Conference.

Our interest in neuro-physiology, neuro-monitoring and consciousness monitoring is growing. Several lectures on these topics were presented at conferences and grand rounds, solidifying our division as experts in this arena.

Resident education continues to be one of our priorities. The weekly lecture (CME category 1) continues with great success. Barbara Rogers, MD has collaborated with the clinical research team to facilitate a weekly neuroanesthesia Journal Club. In addition, Dr. Rogers will play a pivotal role for our equipment maintenance and replacement. Katie Figg, MD is also working towards becoming assistant director of the neuroanesthesia fellowship program within the next few years.

Clinically, we continue to grow stronger. We have been providing a subspecialty call to match the vision of The Ohio State University Medical Center. This call covers neurosurgical and spine cases, endovascular procedures, MRI and stroke treatment.

A high volume of patients continue, with over 2,400 neurosurgical cases staffed by our service, including gamma knife, endovascular neuroradiology, ENT-middle fossa craniotomies, and spine surgery (neurosurgery and orthopedics). Clearly, our need for neuroanesthesiologists will continue to grow. An active recruitment plan is underway to meet those needs. Our major growth has been with the spine surgery service performing increasingly complex cases. This area of neurosurgery is expected to grow the most in the following years.

Another successful project started in 2005 was the intraoperative MRI-OR suite. It was inaugurated on April 2005 and hundreds of cases have been performed to date. This has provided better patient care with a 35% reduction of early re-operations. Housed within operating room 21, it is one of the only hybrid neuro rooms in the country. The room is designed to coil an aneurysm and open an aneurysm in the same day without moving the patient in and out of the room. This tremendous accomplishment could not have been achieved without tireless effort and teamwork trans-departmentally.

Our goal of providing excellent clinical care with efficiency remains our priority. Our major asset is teamwork as defined in Ohio State's Medical Center vision statement:

*Working as a team, we will shape the future of medicine by creating, disseminating and applying new knowledge, and by personalizing health care to meet the needs of each individual.*



## *Obstetrical Anesthesia*



**Mona Y. Halim, MD**  
Assistant Professor Clinical  
Director, Obstetrical Anesthesia

### **Clinical Activities**

#### *Overview of Our Numbers in 2008*

Our numbers at The Ohio State University Medical Center have slightly decreased to a total of 4,486 live births. We have been involved in the care of over 5500-6000 anesthetics during this year. This number also includes anesthesia for over 600 tubal ligations, with or without cesarean deliveries. Additionally, labor analgesia was provided for many of the patients that had intrauterine fetal demise. Anesthesia was also provided during surgery for incompetent cervix, twin to twin transfusion syndromes, removal of retained placenta, or removal of cerclage sutures and EXIT procedures.

Cesarean deliveries are about 32% of total deliveries. Cesarean sections were performed on elective basis or non-elective basis. Total numbers are approximately 1,345 cases. In some of the cases, the procedure may have been combined with tubal ligation or cesarean hysterectomy to control obstetric hemorrhage or with more extensive surgery secondary to co-morbidities. Additionally, a percentage of elective cesarean sections were performed on high-risk patients, which mandated special monitoring and intensive care admissions. The percentage of cesarean sections performed under general anesthesia was about 7.66%, which included emergencies as well patients in which there is a contraindication to regional anesthesia or inadequate regional anesthesia.

The other part of patient care is provision of labor analgesia to patients in labor. In the absence of contraindications, about 80-85% of these patients received regional analgesia techniques to provide labor analgesia. There is some overlap between those numbers because some of the patients in labor may have been delivered in the operating room. The anesthetic provided in the operating room may rely on the epidural or a different anesthetic, which could be a regional or a general anesthetic depending on a variety of factors.

The complexity and acuity of a good percentage of our patients keep us on edge at all times. We have refined our OB anesthesia consult service and developed a procedure for the OB anesthesia consult that should soon be available on eResults.

We have continued our commitment to pregnant cardiac patients through combined efforts with the congenital adult heart disease group of cardiologists, including Curt

Daniels, MD, Steven Cook, MD, and the high-risk maternal fetal medicine attending, David Colombo, MD. We have been recognized for our effort and superb patient care in Ohio State's Medical Center publications for the care of a patient with severe pulmonary hypertension.

We have committed ourselves to patient safety through adherence to time out before performing epidurals, double-checking medication labels to be administered in the epidural space, and meticulous attention to the use of alcohol hand rubs and washing hands. Together with strict asepsis in performance of neuroaxial anesthesia techniques, we are ensuring safety and prevention of infectious complications by doing our best in those areas.

We initiated our own patient satisfaction surveys in August 2008 and are much encouraged with the feedback we receive from our patients.

We are continuing to develop and acquire higher technical expertise in the use of ultrasound technology as a diagnostic tool to identify the anatomy, insertion point, and depth of the epidural space from the skin. This will be of utmost value for the care of our morbidly obese patient population, as well as the normal population.

New nurse anesthetists have been trained in regional anesthesia and became additional assets to our OB anesthesia coverage during many days and nights. They complement the anesthesia care team concept and have been selected from the best CRNAs in the main operating room. They also have great interest in the care of our high-risk population. Quarterly educational meetings are ongoing to maintain proficiency and currency in applied knowledge.

Only through thorough postoperative follow-up of patients and attention to minor or significant issues are we able to pursue consults or diagnostic workups if needed. These are the tools we have utilized over the past 6 years which allowed us to take care of over 20,000 patients without a significant anesthesia-related morbidity or mortality.

### **Equipment and Technical Support**

We have increased our anesthesia technical support to 5 to 6 day shifts per week. The anesthesia technician has some weekend coverage during which our supplies are replenished in preparation for a trauma in the 3 operating rooms on the sixth floor.

A GlideScope is finally part of our airway equipment and is kept in Labor and Delivery on the sixth floor. Airway elevation pillows and other necessary equipment in our OB airway carts are essential tools during difficult airway management emergencies.

New fibre optic laryngoscopes with better lighting are definitely necessary. They have been ordered and should arrive soon.

A new Loss of Resistance syringe, “Episure,” is under trial. The rationale is that it may be a helpful tool to identify the epidural space and provide a lower incidence of dural puncture.

### **Educational Activities**

We continue to gather data on an OB Excel log and generate many of our statistics from the data spreadsheets. In 2009, our department expert, Roger Dzwonczyk, will help us refine data entry to obtain information in a simpler way and start utilizing it more for education and publications.

We will present some of our complex cases at the next Midwest Anesthesia Residents Conference (MARC) as well as the Society for Obstetric Anesthesia and Perinatology (SOAP). I am actually very proud to communicate about five resident presentations that will be part of the Society of Obstetric Anesthesia and Perinatology annual meeting this coming May in San Antonio, Texas.

Our senior anesthesia residents are given the opportunity to develop more skills and confidence while being on call at night with the attending anesthesiologist covering OB. The feedback we have received is incredible and illustrates the value and worthiness of the residents’ experience with this training.

The obstetric anesthesia article package has been updated and intense effort is directed towards the discussion of such landmark topics during the rotation.

A core combined anesthesia and fetal surgery group is being developed for performing more fetal surgery. We have refined our anesthesia techniques for the more common twin to twin transfusion surgery and will have 2 EXIT procedures performed in April 2009.

Obstetric resident anesthesia education is important for improving communication on the obstetric floor. We take every opportunity to discuss or present our point of view and participate in the residents’ lecture series. Ritu Kapoor, MD, one of my colleagues in the department, will be presenting a topic about Crew Resource Management in the OB Grand Rounds series this coming September.

## *Off Site Anesthesia Services*



**David O. Yablok, MD**  
Assistant Professor Clinical  
Director, Off Site Anesthesia

The year of 2009 has continued to bring significant growth, change, innovation, and education opportunities for the off site (out of operating room) anesthesia service. Providing anesthesia care in locations outside of the operating room (OR) continues to be an increasingly important part of the healthcare delivery system. In addition to a notable growth in case volume, we have initiated a one-month resident rotation in off site anesthesia.

### **Growth**

- The service consists of up to four separate unique anesthesia locations designated as OR 99, 98, 97, and 95. The total staff commitment can be as high as three faculty members and four residents/certified registered nurse anesthetists (CRNAs) at any time.
- The total number of cases has continued to increase over the past few years
- We provide out of OR care on a 24/7 basis. Many emergent and emergency cases are handled during off hours. Increased familiarity with these cases by a larger percentage of our department has greatly enhanced the ease and efficiency of these situations.
- Continued coverage of the electrophysiology procedures.
- We have experienced significant growth in the number of endoscopy cases. These include, but are not limited to, ERCP, EUS, and enteroscopy cases.

### **Change**

- We have once again begun to provide anesthesia for blood brain barrier disruption procedures. The protocols remain open and they have recruited at least one additional patient.

- As above, the number of gastrointestinal (GI) procedures has increased. The GI services have moved into a new facility with state-of-the-art procedure rooms. The ERCP and EUS room are especially anesthesia friendly, greatly facilitating our efficiency and safety.
- The magnetic resonance imaging (MRI) scanners have also been relocated to a modern facility. This area greatly improves our anesthesia patient care with updated monitors, specific anesthesia space, and better proximity to our department and the ORs.

### **Innovation**

- We are continually improving and refining our techniques for patient care. These innovations lead to more efficient patient care, which results in increased patient volume in a given time period and thus, decreased costs.
- We are constantly striving to minimize the down time of the radiation equipment caused by anesthesia preparation and issues. Wasted time is wasted money. As an example, every half hour saved in the MRI scanner is worth \$2,000 to the hospital, not including idle staff time. While no data is available, there has clearly been a significant improvement in anesthesia efficiency.
- An additional goal of the off site cases is to minimize the use of the post anesthesia care unit (PACU). Sending patients to the PACU increases costs and workloads in an already stressed nursing staff. With our currently developed protocols, the need to transfer a patient to the PACU is an extreme rarity. We currently only utilize the PACU for patients that have required intubation, which is a small and decreasing percent of our experience. In addition, we are working with the endoscopy nursing staff to develop the ability to recover intubated patients in their unit, also bypassing the PACU, with a resultant significant cost savings.

### **Education**

- We have developed a one-month rotation for residents to learn to perform anesthetics out of the OR. The early feedback has been overwhelmingly positive.
- Due to ever increasing off site staffing requirements, all members of our department need to be educated and comfortable with off site cases. Our goal for this year is to make sure all faculty feel comfortable in providing anesthesia care in the off site environment.
- This educational component, while still in development, is important because off site (out of OR) cases are becoming a larger part of our anesthetic experience on the local and national level.

## *Post Anesthesia Care Unit*



**Thomas J. Smith, MD**

Assistant Professor Clinical

Director, PACU

Section Director, Regional Anesthesia, University

Hospital

The year 2009 has brought some changes in the perioperative setting in order to continue to improve patient care and promote an academic environment in which to foster resident education.

1. We have implemented a new bedside report procedure to help facilitate transition of patient care from the operating room (OR) setting into the recovery room. Critical patient information can now be communicated in a thorough and precise format from the OR personnel to the post anesthesia care unit (PACU) nurse and residents. We will be expanding the scope of this bedside report to include the surgical intensive care unit (SICU) caregivers when patients are transferred from the PACU.
2. The opening of the PACU in the mornings in order to serve as a preoperative area has been successfully implemented in 2009. The patients are now able to be seen before entering the OR and can have intravenous catheters placed and anxiolytic medications administered when appropriate. The anesthesia team has been pleased with the change, now having sufficient time and space to perform these tasks, leading to improved patient care.
3. A daily reading schedule including chapters, journals, and reviews has been implemented in order to strengthen the educational value of the PACU rotation. A PACU packet is distributed at the beginning of the rotation to help guide the residents to meet the goals and objectives of the rotation.
4. Residents are taking an active role in the 2-step sign-out procedure so that they may learn to evaluate the patient's readiness for discharge from phase I of recovery to phase II.
5. Anesthesia attending site coverage has been limited to include the PACU as a resident site. This has helped to increase the educational value of the rotation by having the attending anesthesiologist be readily available for bedside teaching as well as participating in daily key word discussions and didactic lectures.
6. Future plans include implementation of a pre-test and post-test for the PACU rotation and scheduled daily didactic lectures to include resident presentations.

7. PACU faculty members include the following:

- Thomas Smith, MD
- Heather Gensel, DO
- Gaylynn Speas, MD
- Joseph Swan, MD
- Ryan Dalton, MD
- Lin Li, MD

## ***Regional Anesthesia***



**Babak Khabiri, DO**  
Assistant Professor Clinical  
Director, Regional Anesthesia

The Division of Regional Anesthesia provides regional anesthesia services at three locations: University Hospital, OSU East, and The OSU Eye & Ear Institute. The Division of Regional Anesthesia was created in 2009, with a director appointed to expand and coordinate the regional anesthesia services among these three sites. The division's focus is in the areas of clinical care, education, research, and service.

**Clinical Care:** The division of regional anesthesia performs a large volume of and variety of regional techniques for surgical cases. In 2009, the division performed 6,800 regional anesthesia procedures for surgical cases, of which nearly 900 were continuous peripheral nerve catheters. The division continues to be a leader in the field of regional anesthesia as evidenced by the use of ultrasound technology for peripheral nerve blocks and the high volume of continuous peripheral nerve catheters.

**Education:** The division of regional anesthesia takes a very active role in the education of residents and Fellows. During their regional anesthesia rotations, CA-2 residents are closely supervised as they learn a variety of regional anesthesia techniques. John Norton, DO was named the division's fellowship director in 2009 as the division begins to expand the regional anesthesia fellowship. In recognition of the leading role the members of the division play in the field of regional anesthesia, members of the division were asked to lecture and lead workshops at the American Society of Regional Anesthesiologists and the Ohio Society of Anesthesiologists meetings.

**Research:** Currently two members of the division are primary investigators for ongoing investigator-initiated studies being carried out at The Ohio State University Medical Center. In keeping with the division's mission, all primary investigators collaborate closely with residents in initiating and carrying out these investigations. Members of the division are very committed to expanding the quantity and quality of research in the field of regional anesthesia at The Ohio State University Medical Center.

**Service:** Members of the division serve on numerous national committees. Members of the division serve on the American Society of Anesthesiologists Committee on Regional Anesthesia as well as the American Society of Anesthesiologists Committee on practice management. Two members of the division serve on The Society for Ambulatory Anesthesia's Committee on Regional Anesthesia.



In 2009, three members of the division submitted the final manuscript of a textbook on ultrasound guided peripheral nerve blocks and perineural catheters to be published by Cambridge University Press in July 2010. Also, members of the division were asked to author chapters for another textbook on regional anesthesia to be published in 2011.

## *Transplant Anesthesia*



**David O. Yablok, MD**  
Assistant Professor Clinical  
Director, Off Site Anesthesia

- Provide and supervise coverage of the increasing number of kidney (cadaveric and living-related), pancreas, liver, and combined transplant procedures. We have continued to grow in the area of living kidney donors. The challenges for the upcoming year include the goal to perform 52 liver transplant cases.
- Interact with the transplant surgeons regarding scheduling, assignment, and management of difficult cases.
- Teaching residents and CRNAs and supporting junior faculty in the complex liver and kidney transplant cases.
- Data gathering for an active IRB protocol #2004H0168, PIE.Goldman MD, part of a multicenter study on the effect of vasopressin on renal function during liver transplantation.
- Attend and participate in a monthly multidisciplinary conference on improving liver transplant quality. This conference is attended by hepatologists, nurses, transplant surgeons, anesthesiologists, pharmacists, pathologists, etc.
- Membership in OSU liver program strategic program. Work in progress: Assessment and policy on the blood products usage during liver transplantation.
- Manuscript in progress (E. Goldman, MD, first author) regarding survival of liver transplantation in relation to the severity of liver disease (MELD score). MELD score calculated by using the OSU transplant database.

## *Certified Registered Nurse Anesthetists (CRNAs)*



**Charles E. Martin**  
Chief CRNA

- The Ohio State University Medical Center consists of 62 part- and full-time Certified Registered Nurse Anesthetists (CRNAs) with an additional 6 CRNAs working Internal Resource Pool (IRP) or as needed. We employ one Anesthesia Assistant (AA) as an IRP.
- CRNAs work in a number of settings and provide anesthesia throughout the patient care services of The Ohio State University Medical Center, including University Hospital, The James Cancer Hospital, Richard M. Ross Heart Hospital, University Hospital East, and the OSU Eye & Ear Institute.
- CRNAs perform a variety of cases, including heart, neurosurgery, and OB, which require an advanced level of training.
- CRNAs work a range of hours, including overtime, to meet the demands of the schedule.
- Ohio State's Medical Center is a clinical site for Student Registered Nurse Anesthetists (SRNAs), under the leadership of Jim Dando, from the University of Akron.
- Last year, we welcomed seven new CRNA recruits. These recruits came from as close as The University of Akron and as far away as The University of North Carolina at Charlotte. Future hospital growth plans will allow us to continue with the recruitment of CRNAs.
- CRNAs were given the opportunity to participate in research.

## Faculty & Staff

### *Administration*



**Ronald L. Harter, MD**

Jay J. Jacoby Professor and Chair  
Vice Chair of Education and Professional Development



**Fedias L. Christofi, PhD**

Vice Chair of Research



**Robert H. Small, MD**

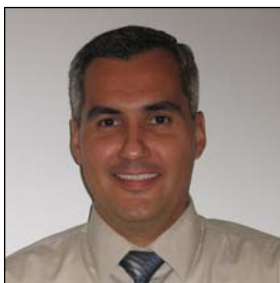
Vice Chair Administrative Affairs



**Steven S. Smith, MA**

Director, Administration

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Vascular Anesthesia



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**Sergio D. Bergese,  
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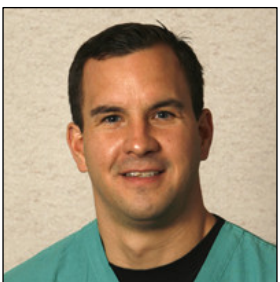
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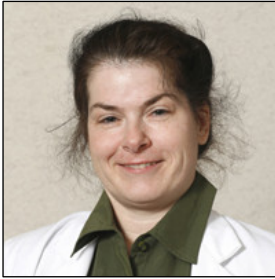
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**Charles E. Martin,  
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**Thomas E.  
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**Thomas J. Smith, MD**  
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**W. Daniel Traetow, MD**  
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**David O. Yablok, MD**  
Off Site Anesthesia Services  
Transplant Anesthesia

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Yun Xia, MD, PhD

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