



# 2007 Annual Report

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

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July 1, 2006-June 30, 2007

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## Department Overview



### ***David A. Zvara, MD***

Jay J. Jacoby Professor and Chair

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

In the Department of Anesthesiology we have modified the OSUMC mission statement as presented above. It is simple, clear and compelling. In 2007 we in the Department of Anesthesiology have made great strides forward to achieve this mission.

In research we have invested in our people and our infrastructure. We now boast 56 research personnel with 24 new recruits in 2007. In addition to the 14 Principal Investigators in the department we have four Undergraduate and Graduate Students studying in our department, three Foreign National Research Fellows, two NIH Road Map Fellows, one MSP MD/PhD Student, one Surgical Research Fellow and ten medical students involved in ongoing research projects. This level of involvement has resulted in a 100% increase in peer-reviewed manuscripts, a 33% increase in abstract submissions, and eight national and regional news releases relating to our research contributions. This surface activity is supported by a 58% increase in research funding in the Department. Last year, our researchers submitted for over \$8.5 million in sponsored research dollars. To support this team, we have embarked on an aggressive plan to increase funded research space. As a first step, we moved Dr. Hamdy Hassanain to the Biomedical Research Tower and we are in the early stages of developing a clinical research office in Cramblett Hall. We have set the bar high in our department and 2007 established new levels of productivity and funding.

Education is at the heart of the Ohio State University Medical Center. Our clinicians take extraordinary pride in our training program, and for good reason. Since 2004 we boast a board certification rate of 93% whereas the national average is just above 80%. Our

program enjoys a full four year accreditation from the ACGME. In 2007 there have been new additions to personnel and to our programs. Most notably, Dr. Ronald Harter joined us as Vice-Chair for Education and Professional Development. Dr. Harter is the Chair of the Committee on Resident Education for our national society and he was just elected to serve as one of eleven national representatives to the American Medical Association. The Education Office was remodeled this past summer and all services relating to education are now consolidated under Dr. Harter in this premier facility.

Other initiatives coming from the Office of Education include the introduction of a CA-2 retreat on professionalism and practice management, lectures from five visiting professors and the reestablishment of an active Anesthesiology Interest Group for medical students. We recruited two Cardiothoracic Anesthesia fellows this year and we submitted the application for ACGME accreditation for this established fellowship program. In addition to this, we received approval for fellowship training in Neuroanesthesia and Obstetric Anesthesia. In pain medicine, our fellowship program received internal approval for expanding the program and we are waiting to hear from the ACGME on this request. Fellowships represent the pinnacle of formal training for a physician and we are delighted to offer this training opportunity at Ohio State.

I am pleased to report that in patient care the Department of Anesthesiology has improved people's lives through innovation and a sincere commitment to excellence. In order to facilitate efficient, effective compassionate care the Department has introduced new operations management techniques which have resulted in higher levels of daily productivity. We have revamped our regional anesthesia and acute pain management service, introduced patient satisfaction questionnaires, and started a new OR communications system that is now used by OR nursing and the surgeons. We opened the new OSUMC Preoperative Assessment Center (OPAC). We participated in the search for a new Perioperative Director and we are delighted that Dr. Tim Park accepted the position and is now on-board. We have added four new physicians and 10 new CRNA's. This is a testimony to the excitement that can be found at OSU.

In summary, 2007 has been a transforming year for the Department. We have experienced 20% growth in personnel, a 56% growth in physical plant space, a 57% growth in research funding, and from a business management point of view, we have done this all under budget. Perhaps, the most remarkable accomplishment is the fact that our physicians, house officers, nurses, administrative support staff, researchers and students all share a sense of ownership and pride in the extraordinary work that we do everyday.

We do make a difference. I invite you to visit the Department. Walk down the halls in 4 North Doan Hall. Talk to any one of our 265 employees. If you do, I know that you will feel the excitement that is OSU Anesthesiology.

## **Department Administration**

### **David A. Zvara, MD**

Jay J. Jacoby Professor and Chair

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

Vice Chair of Research

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

Vice Chair of Education and Professional Development  
Residency Program Director

### **Luis A. Lopez, MD**

Vice Chair Clinical Operations

### **Steven S. Smith, MA**

Program Director

## **Directorships**

**Michael J. Adritsos, MD**

Cardiovascular Anesthesia

**Sergio D. Bergese, MD**

Neuroanesthesia

**Ryan E. Dalton, MD**

Perioperative Services

**Ernesto Goldman, MD**

Transplant Anesthesia

**Mona Y. Halim, MD**

Obstetric Anesthesia

**James S. Rogoski, MD**

James Anesthesia

**Steven A. Severyn, MD, MBA**

Chronic Pain

**Martha Z. Szabo, MD**

Pre Operative Assessment Clinic

**David O. Yablok, MD**

Off Site Anesthesia



# Faculty Roster

## Professor

Fedias L. Christofi, PhD  
Michael B. Howie, MD  
David A. Zvara, MD

## Associate Professor

Mark Gerhardt, MD, PhD  
Ernesto Goldman, MD  
Thomas Reilley, DO  
Yun Xia, MD, PhD

## Assistant Professor

Hamdy Elsayed-Awad, MD  
Hamdy Hassanain, PhD

## Professor Clinical

Constatino Beneditti, MD  
Joel Weaver, DDS (Emeritus)

## Associate Professor Clinical

Bhagwandas Gupta, MD  
Ronald Harter, MD  
Nadia Nathan, MD

## Assistant Professor Clinical

Fernando Arbona, MD  
Michael Adritsos, MD  
Sergio Bergese, MD  
Ryan Dalton, MD  
Galina Dimitrova, MD  
Ahmad Elsharydah, MD  
Michael Evers, DO  
Rebecca Gutmann, MD  
Bachar Hachwa, MD  
Mona Halim, MD  
James Highley, DO  
Mike Ingerski, MD  
Michael Johanson, DO  
Ritu Kapoor, MD  
Jamie Keller, MD  
Babak Khabiri, DO  
Alan Kover, MD  
Lin Li, MD  
Martharbootham Mani, MD

Hans Miller, MD  
Steven Paquelet, MD  
William Roberts, MD  
Barbara Rogers, MD  
John Rogoski, DO  
Steven Severyn, MD  
Yanfu Shao, MD  
Robert Small, MD  
Thomas Smith, MD  
Gaylynn Speas, MD  
Martha Szabo, MD  
Jeffery Swan, MD  
Wayne Traetow, MD  
Katja Turner, MD  
David Yablok, MD

### **Clinical Associate Professor**

Luis Lopez, MD

### **Clinical Assistant Professor**

M. Farid Edwards, MD  
John Hohmann, MD  
Garrett Kelly, MD  
John Norton, DO  
Andrew Roth, MD  
Charles Seelandt, MD

### **Joint Appointment**

#### **Professor**

David J. Weeks, PhD  
Joseph Dasta, PhD

### **Auxiliary Clinical Faculty – Children’s Hospital**

#### **Clinical Assistant Professor**

Shari Benoit, DO  
Gregory Cambier, MD  
Olamide Dairo, MD  
Vyas Kartha, MD  
Terri Keegstra, MD  
David J. Martino, MD  
Veronica Miler, MD  
Aymen Naguib, MD  
Joseph Rossi, MD  
Christopher Sutton, MD  
D. Alan Tingley, MD

## Cardiothoracic and Vascular Anesthesia



### ***Michael J. Adritsos, MD***

Assistant Professor Clinical  
Director, Cardiovascular Anesthesia

The Division of Cardiothoracic and Vascular Anesthesia continued to prosper throughout the academic year of 2006-2007. Changes occurred in the areas of administration, research, education, and clinical care.

Clinically, we experienced a steady growth in the number of cardiac cases averaging just over 75 open heart cases per month. This included an increase in the number of ventricular assist device cases and a plateau of heart transplants. We continued with a consistent volume in performing thoracoscopic MAZE procedures.

In thoracic anesthesiology, we continued with the same volume of thoracotomies and lobectomies with the addition of the thoracic surgeon Dr. Susan Moffat-Bruce in the summer of 2006 and Dr. Alexander Vaida in the late spring of 2007. The lung transplant service now is starting to grow averaging one per month with the expertise of Dr. Moffat-Bruce.

In vascular anesthesiology, we continued to experience new trends in anesthesia for endovascular surgery of abdominal aortic and thoracoabdominal aneurysms. Our regional techniques for vascular anesthesia are becoming more sophisticated with the implementation of ultrasound guidance. Additionally, we expanded our horizons in cardiology by increasing our case load in performing anesthesia for catheterizations, ablations, and implantable defibrillators.

In echocardiography we are now streamlined and fully digital. All intraoperative transesophageal echocardiograms exams are uploaded via the intranet to the cardiology echocardiography database, Heartlab. With this intranet connectivity, surgeons, cardiologists, and anesthesiologists are now able to access intraoperative studies at any

time. This serves not only as a reference for medical treatment but also as an abundant teaching and research database.

From administrative perspective, the most notable transformation was the appointment of our Department Chairman, Dr. David Zvara. Dr. Zvara started his new position in January, 2007. Being a cardiac anesthesiologist himself, he has contributed toward the mission of the Cardiothoracic and Vascular Anesthesiology Division in the areas of clinical care, research, and education. His direction led to the formation for the first time in this department history of a manpower model which mathematically illustrates the required number of anesthesiologists necessary for proper function of the operating rooms. Dr. Michael Andritsos also joined the group in September, 2006 and was appointed Interim Division Director in March, 2007. Dr. Zvara also appointed Dr. Dimitrova as the Fellowship Director in March, 2007. Together they recruited two physicians for the Cardiothoracic and Vascular Fellowship, Dr. Michael Ingerski, who graduates from his residency here at Ohio State in July 2007 and Dr. William Perez, who comes from the state of Washington, where he was in private practice. Both commence their fellowship training in July 2007.

We also saw much improvement in operating room efficiency at the Ross Heart Hospital as reported by the Ross Heart Hospital Quality Management Committee with minimizing delays in OR start times, improving delivery of intraoperative antibiotics and reducing case turnover times.

In education and research we experienced great success. Dr. Andritsos was able to publish two book chapters in the field of cardiothoracic anesthesia. He also submitted to the Ohio State University Medical Formulary two medications for clinical use, tranexamic acid and inhaled epoprostenol. Dr. Gerhardt also continues his research with his Davis Grant and National Heart Foundation Grant in heart failure mechanisms and has published four anesthesia related book chapters. He was also the author of 18 publications this year. Dr. Elsayed-Awad also submitted 3 publications for his work on spinal cord injury and ocular damage during surgery. Dr. Nathan continues her work in echocardiography and has published 5 papers in areas specifically related to 3-D echocardiography and the mitral valve. Dr. Yanfu Shao submitted a poster case report related to transesophageal echocardiography to the Annual Meeting of the Society of Cardiovascular Anesthesiologists.

We continue to fine tune and make improvements in resident education. Our didactic lecture series is filled with interesting topics related to cardiothoracic and vascular anesthesia and residents participate in all of the presentations. Our database of interesting intraoperative transesophageal echocardiography cases continues to grow and is a useful teaching reference.

In summary, the Division of Cardiothoracic and Vascular Anesthesia has grown in all areas of clinical care, research, education, and administration. The addition of two

faculty, the enhancement of intraoperative echocardiography and growth of research has made us excel in all areas of clinical care, research, and education.

## Clinical Operations



### ***Luis A. Lopez, M.D.***

Clinical Associate Professor  
Director, Clinical Operations

## Summary of Clinical Activities

This academic year has brought exciting growth and new challenges in the Department of Anesthesiology.

- We implemented the faculty swing shift to create coverage consistency in the Operating Rooms after 5:00 p.m. and that has improved efficiency in OR utilization and the proper utilization of overtime for anesthesia personnel. The system is working extremely well and we are able to finish cases without delay and maintain quality in patient care.
- We created the swing shift for the cardiovascular resident to have experience in the late cases and expose him in the emergencies in the Ross Heart Hospital.
- We expanded to four physician schedulers to facilitate anesthesia coverage in the ORs.
- The department implemented a new assignment for faculty – RAAMP – to teach and cover regional anesthesia. This area is covered by the acute pain service which has reduced operating expenses.
- The department has designated four faculty to the PACU to provide immediate post operative care, consistent teaching in the resident rotation, and help the residents meet their education objectives.

- The department hired seven new CRNA's to allow us to cover the needs of the OR on a daily basis. Also, we have assigned a new CRNA Saturday shift to have proper personnel to cover urgent/emergency cases on this day.
- OR98 was created for Neurosurgery angiography cases which have grown in number throughout the year.
- OR97 was created to provide coverage for the EP lab in Ross Heart Hospital, to manage the patients' needs of the anesthesia service in compliance with state law requiring anesthesia involvement in their cases. We are scheduling faculty and CRNA's daily to cover these needs.
- The department is working with the vendor, Spin Fusion, to create an anesthesia scheduling program.

Our department experienced an increase in the number of surgical procedures being done in the operating rooms as well as an increase in the number of operating rooms running past 5:00 p.m. for elective cases. We have opened one more OR in University Hospital. We have extended hours past 5:00 p.m. in the James Cancer Hospital.

With the growth experienced throughout the last year, we have maintained efficiency and quality of service.

New appointments in the department include the following:

Ronald Harter, M.D. was appointed Vice Chair Education and Professional Development.

Steven Severyn, M.D. was appointed as RAAPM Director, and Chronic Pain Director.

Ryan Dalton, M.D. was appointed Director of PACU.

Michael Andritsos, M.D. was appointed Director of Cardiovascular Anesthesia.

Martha Szabo, M.D. was appointed Director, Pre Operative Assessment Center (OPAC).

Fernando Arbona, M.D. was appointed Chief of Anesthesia Services at UH East.

Sergio Bergese, M.D. was reappointed Neuroanesthesia Director.

David Yablok, M.D., was reappointed as Director of Offsite Anesthesia Services.

John Rogoski, D.O. was reappointed as Director of the James Anesthesia Division.

Mona Halim-Armanios, M.D. was reappointed Director of Obstetrics Anesthesia.

I am proud of what our faculty, residents and staff members have accomplished not only for this academic year but for the last several years.

Together we look forward to a successful future.



## James Anesthesia



### *John S. Rogoski, D.O.*

Assistant Professor Clinical  
Director, James Anesthesia Section

### **Mission Statement**

The Cancer Center is one of six “Signature Programs” at the medical center and its volume and scope of services will continue to expand in the future.

Just as it is the goal of the medical center to have the cancer center represent a top tier 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 the past year numbered 5392; this is a 17% increase from the previous year’s total of 4618. This represents 898 procedures for each of the 6 OR Rooms.

The cases were distributed as follows:

43% ASU	(46% 2006)
35% ADS	(37% 2006)
22% In-patient	(18% 2006)

The department of anesthesiology performed the following procedures during 2007:

338	central venous catheter placements
311	pulmonary artery catheter placements
912	arterial line placements
518	epidural catheter placements
608	lung isolation procedures

Improvements that have been made to help increase patient safety and overall efficiency included

- Purchase of a new anesthesia machine which provides multiple modes of ventilation and greater ventilatory capability.
- Purchase of a McGrath video laryngoscope. This device is similar to the Glidescope, but provides for much greater portability for use outside the operating suites.
- Purchase of the Ctrach LMA system. This device ventilates in the same manner as a LMA and provides for a conduit for intubation like the Fastrach, but adds video capability for visualization during the procedure.
- Creation of a pediatric emergency cart utilizing the Broselow system to determine the appropriate equipment and medications as indicated by patient size.
- Budgeting for an additional Glidescope system. There has been an increased demand placed on the current systems as the practitioners are more frequently incorporating their use in airway management.
- Continued education and reinforcement regarding timely preoperative antibiotic administration to help decrease surgical wound infections. Up to date antibiotic administration guidelines have been placed on all back stands.
- Continuing education and reinforcement of the need for tighter perioperative glucose control. Guidelines for the management of insulin infusions have been placed on all the back stands. The literature is supporting tighter glucose control for decreased morbidity, mortality and wound infections and we would like to offer these benefits to our patients.
- First case start, patient entry to incision, and back to back times has been tracked. Our first focus will be on increasing the number of first cases that start on time. The causes of delays have been multifactorial. We expect that the anesthesia related component of the delays will be drastically reduced. And we will help to facilitate the reduction of the other components.

There have been problems with the high cost of repair and excessive down time associated with fiberoptic bronchoscope breakage. There was a 32% decrease in the cost of maintaining each bronchoscope during 2007, and a maintenance contract which includes the bronchoscopes was put in place in July.

## Neuroanesthesia



### ***Sergio Bergese, M.D.***

Assistant Professor Clinical  
Director, Neuroanesthesia Services

The vision of the Neurosciences signature program is to develop a top-ranked Neurosciences Institute with a strong foundation of research, education, and patient care. It will be known for its compassionate, full-service, individualized “state of the art” care, cutting edge research, and scholarly environment.

Key opportunities were identified and prioritized by reviewing the OSUMC neurosciences program’s current state, external competition, scientific advances by disease state, *US News and 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:

- Consolidation of the neuroscience research programs to facilitate translational research and collaboration between clinicians, clinical researchers and basic science researchers.
- Consolidation of the inpatient and outpatient care areas to maximize expertise specific to the neurosciences population and improve care coordination.
- Enhance the educational aspect through additional fellowships.
- Development of a Neurosciences Institute to coordinate all neurosciences activity, drive strategic development and uphold accountability for financial performance.

Expected outcomes include an increase in average daily census of 20 patients per day (from 60 to 80).

While the residency programs are robust, we are finalizing the application for a Neuroanesthesia fellowship under the supervision of Dr. Bhagwandas Gupta.

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 60 to 80 patients per day. Dr. Barbara Rogers will be working closely with Dr. Louis Caragine on the development of a Neuro-SICU program.

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 responsible and accountable for all financial aspects as well.

Neuroanesthesia, as part of the Neurosciences program, will continue recruiting to meet our surgical clinical needs. Our number of neuro-anesthesiologists will increase to six (a 200 percent growth since January 2005.) with Dr. William Roberts who was recently hired and with the addition of Dr. Marthabootham Mani. Dr. Roberts holds a 60% clinical appointment and a 40% translational research appointment in the department. In the research arena, he will be mentored by Dr. E. Antonio Chiocca as well as Dr. Fedias Christofi. This will be our first step in cross collaboration between the two departments. On July 2006, Dr. Roberts started his post graduate training in Clinical Research.

Also, Neuroanesthesia will continue its expansion of clinical research. A total of ten research protocols are active and IRB approved as well as participation in three clinical trial-multi-center studies, phase 3. Two new grants were obtained and four others are undergoing the approval process. We have budgeted \$350,000 in grants for the 2006-2007 year. Two papers were approved for publication and several abstracts were presented at scientific societies. Currently we have seven residents working in different research projects and five abstracts for the upcoming MARC meeting are planned.

Resident education continues to be one of our priorities. The weekly lecture (CME category 1), which was added to the curriculum last year, continues with great success. A monthly Journal Club is in the planning stages with Dr. Charles Seelandt in charge of the organization aspects of the club. He will also play a pivotal role for our equipment maintenance and replacement.

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.

Twenty-four-hundred neurosurgical cases including gamma knife, endovascular neuro-radiology, ENT-middle fossa craniotomies, and spine surgery (Neurosurgery and Orthopedics) are staffed by our service. This represents phenomenal growth considering that in 2004 less than 600 cases were performed. Our need for neuro-anesthesiologists

will continue to grow as well. An active recruitment plan is underway to meet those needs.

Clinically, we continue to grow stronger. Since late last year we have been providing a sub-specialty call to match the vision of our medical center. This call covers Neurosurgical and spine cases, endovascular procedures, and MRI and Stroke treatment.

Another successful project started in 2005 was the Intraoperative MRI-OR suite. It was inaugurated on April 2005 and almost 160 cases have been done thus far. This has provided better patient care with a 35% reduction of early re-operations. Also, due to our high performance, we were chosen as a “visit site” by the manufacturer and a visitor site contract was signed. An anesthesia technologist fully dedicated to Neuro was hired this year (Ray Etheridge) to focus mainly on the equipment setup and management. This year a similar project will be started for the intra operative angio suite. This multi million project is scheduled to be finalized in August 2007.

Our goal of providing excellent clinical care with efficiency remains our priority. Our major asset is team work as defined in our 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.*

## Obstetric Anesthesia



### ***Mona Halim, MD***

Assistant Professor Clinical  
Director, Obstetric Anesthesia

### **Clinical activities**

#### *Overview of our numbers in 2007*

The number of live births at OSUMC continued to rise to a record number of 4363 live births. Cesarean deliveries constitute about 33% of the total number of deliveries. About 11% were performed under general anesthesia. This includes both emergency and elective cesarean deliveries.

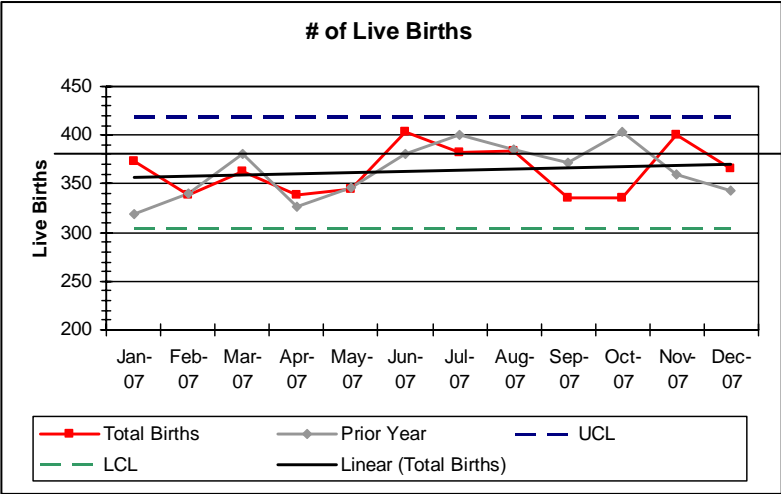
- Our involvement in providing labor is over 80% of total deliveries. We do utilize lumbar epidural catheter placement, combined spinal epidural techniques as well as continuous spinal. Patient controlled epidural analgesia is utilized in all cases.
- Over 45% of our population is “High Risk Obstetrics” whether by their co-existing complex medical issues such as the morbidly obese patients or other co-existing/OB cardiac, neurological, or other confounding medical issues in the pregnant patients. It also includes patients with rare conditions like X-linked-lympho-proliferative condition, Malignancies, Arnold Chiari Malformations, Harrington rods, severe pre-eclampsia, special versions of HELLP Syndrome and thrombophilias/thrombocytopenias.
- The number of live births is different than the number of cases we are actually involved in. Some planned vaginal deliveries end up with cesarean sections for which we may choose a subarachnoid block in lieu of utilizing a pre-existing epidural. Additionally, we are involved in anesthesia for other procedures: for

cerlage, postpartum tubal ligations, some dilatation and curettage for removal of the placenta, and fetal procedures such as twin to twin transfusions.

- In 2007 we created a core group of cardiologists, obstetricians, and obstetric anesthesiologists as well as nursing in order to focus on the care of the pregnant patients with congenital heart disease. This has allowed proper communication and planning for this particular patient population. We are in the process of developing specific protocols for the care of this particular group of high risk patients.
- In October of 2007 the American Society of Anesthesiologists published updated OB anesthesia guidelines. Those important guidelines were presented and discussed in Grand rounds to increase awareness among our faculty and anesthesia personnel. A dedicated session in a smaller group discussion format was also offered for the night nurse anesthetists covering OB.
- Continued efforts to improve communication on the obstetric floor with the obstetric service, amongst ourselves, and with nursing through one to one exchange of information, attending sign out meetings as well as writing on the anesthesia board in the work room regarding important patient information and situations as well.
- Reinforcement of strict asepsis in performance of neuraxial analgesia/anesthesia through hand washing/use of alcohol rubs in the absence of obvious soiling of the hands as well as the use of hats for the patients and hats and masks for any observing person. Time outs have been strictly followed for correct patient and correct procedure in accordance with JACHO requirements.
- Leaving intrathecal catheters in place for 20-24 hours post delivery was utilized in a large number of patients who may have an accidental dural puncture. We have been successful in decreasing the need for an epidural blood patch in a good number of those patients. Reinforcing and educating nursing and other personnel about the importance of tight dressings when patients leave the labor and delivery floor with an intrathecal catheter have been a priority.

## Women and Infants

The # of live births for the OSU Women and Infant Unit at OSU for calendar year to date (Dec) has *decreased* by 4 births from this time last year. This is a *1% decrease* from last year. The # of births for the most recent month of December 2007 is **UP** 23 births from December 2006.



	1/07	2/07	3/07	4/07	5/07	6/07	7/07	8/07	9/07	10/07	11/07	12/07	CYTD
# of Births	373	339	362	338	344	403	382	384	335	335	400	366	4361
Prior Year	319	340	381	327	346	381	401	385	371	404	359	343	4357

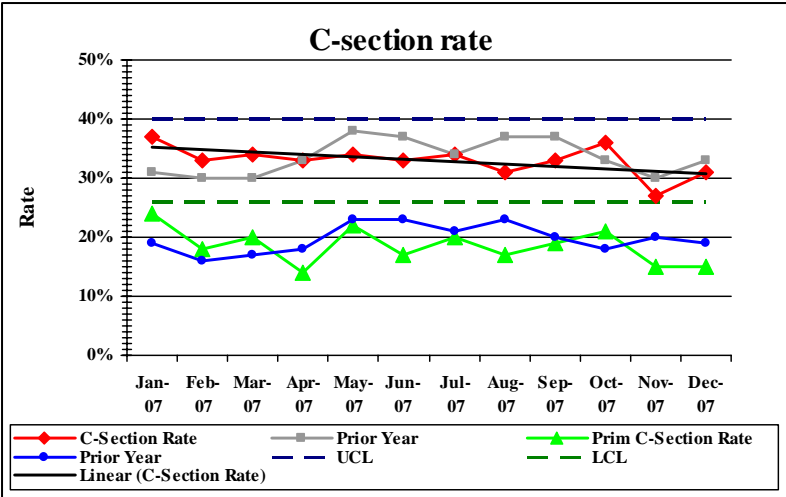
**Source:** Women and Infant Birth Log and the IW Labor and Deliver Data Mart

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# Women and Infants

The C-section rate for the OSU Women and Infant Unit at OSU has exhibited a **DOWNWARD** trend over the past 12 months. The rate for the current calendar YTD is the **DOWN 1%** from this time last year. The current month of December is **DOWN 2%** from December of 2006.



	1/07	2/07	3/07	4/07	5/07	6/07	7/07	8/07	09/07	10/07	11/07	12/07	CYTD
C/S Rate	37%	33%	34%	33%	34%	33%	34%	31%	33%	36%	27%	31%	33%
Prior Year	31%	30%	30%	33%	38%	37%	34%	37%	37%	33%	30%	33%	34%
<b>Prim C/S Rate</b>	24%	18%	20%	14%	22%	17%	20%	17%	19%	21%	15%	15%	19%
Prior Year	19%	16%	17%	18%	23%	23%	21%	23%	20%	18%	20%	19%	20%

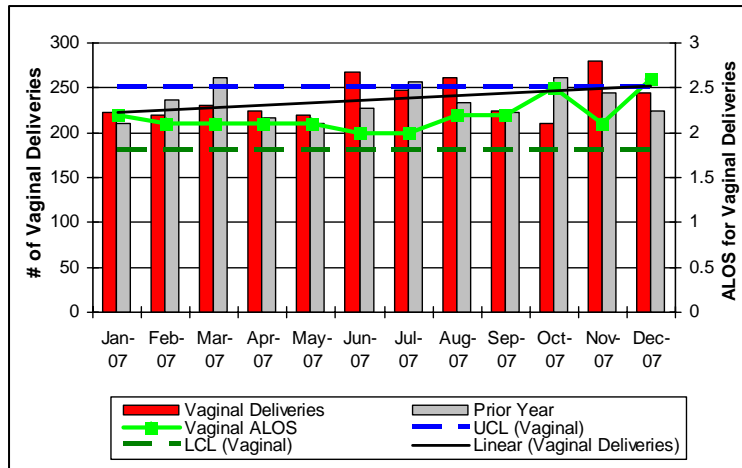
**Source:** Women and Infant Birth Log

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# Women and Infants

The # of vaginal deliveries for the OSU Women and Infant Unit at OSU for calendar year to date (Dec 2007) has **increased** by 45 from this time last year. The Average LOS for Uncomplicated Vaginal Deliveries for December 2007 is **UP .6** from this time last year.

## Vaginal Deliveries



	1/07	2/07	3/06	4/06	5/07	6/07	7/07	8/07	9/07	10/07	11/07	12/07	CYTD
# of Vag Deliveries	222	220	230	224	220	267	248	261	225	210	280	244	2851
Prior Year	210	236	262	216	210	228	257	234	223	262	244	224	2806
Uncomplicated Vaginal Del. ALOS	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.2	2.2	2.5	2.1	2.6	2.2
Prior Year	2.0	2.2	2.5	2.1	2.2	2.2	2.0	2.1	2.1	2.2	2.4	2.0	2.2

Source: Women and Infant Birth Log

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- Getting actively involved with customer service surveys and any comments to continue to improve care to our unique patient population. The information has been communicated to appropriate personnel in a timely manner.
- Quarterly sessions for our night nurse anesthetists were scheduled in order to achieve uniformity and quality patient care 24/7.
- Our morbidly obese population has been very challenging and increasing both in numbers and sizes. We started utilizing diagnostic ultrasound on some patients in an attempt to identify the interspace, the midline, and an approximate depth of the epidural space.
- Thorough post delivery/postoperative follow up of patients as a continuum of optimum clinical care is very rewarding and this allows us to practice good medicine.
- Maintaining detailed information about our cases. We will use the information to develop statistical analysis and quality indicators.

## **Equipment and Technical Support**

- Dedicated anesthesia technical coverage has been accomplished. An anesthesia technician covers L&D for three shifts during the week.
- That same technician also has weekend coverage and an important part of his job is to make sure OB is ready from the supply and equipment standpoint and that we are really well equipped.
- We replaced our old manual operating room tables in the three rooms on labor and delivery with three new tables that can handle our morbidly obese populations. They have marvelous and flexible automatic controls and can handle patients in excess of 800 pounds.
- Acquiring partial technical coverage for L&D allowed us to re-organize and label equipment in the work room by the operating room. This facilitates finding any necessary equipment quickly, thus providing for timely patient care.
- We are consistent in using the ASTM guidelines for labeling drugs on labor and delivery as a measure to reduce the chances for medication errors.

- Researching and entertaining the possibility of acquiring new airway devices on our obstetric airway cart in order to optimize our preparedness for a potentially difficult airway on the sixth floor.

## **Educational activities**

- Gathering data on the OB excel log has greatly improved. There is great potential for generating proper data and quality indicators. I am grateful to the effort of the nurse anesthetists who are putting in this work in addition to every person who is being vigilant and thorough in entering the data.
- Case reports and presentations are being prepared by our residents for some of the complex cases for the MARC and SOAP meetings.
- Intralipid in Pyxis was added as a treatment option for local anesthetic toxicity together with an instruction sheet about its use in an emergency.
- Review of procedures and protocols for an obstetric emergency on the obstetric floor. Particular focus was dedicated to the obstetric hemorrhaging patient.
- Collaboration with nurses in developing an obstetric hemorrhage algorithm.
- Simulation training for the residents regarding emergency scenarios on obstetric floor in the simulator lab.
- Reactivation of our OB anesthesia fellowship program and actively recruiting for July 2008.
- Participation in OB resident lecture series: “Cardiac disease in the pregnant patient”. March 2007.
- OB lectures for our residents.
- Attendance and participation in OB/Peds/Anesthesia Thursday noon conference. Special lecture about the obstetric airway was given by Dr. Robert Small.
- OB anesthesia Grand rounds: “Quality and safety on labor and delivery” was presented in June 2007.

- MARC presentations: MARC is the Midwest anesthesia resident conference, this year is in Indianapolis: we will have four Obstetric anesthesia related presentations:
  - Management of anesthesia for a cesarean delivery in a patient with bicuspid aortic valve and a dilated aortic root to the orifice of the coronary arteries.
  - Cesarean delivery in a patient with X-linked lymphoproliferative disease.
  - Anesthetic management of a patient with Pott's syndrome for vaginal delivery.
  - Ultrasound guided subarachnoid block in a patient with Harrington rods and scoliosis.

## Off Site Anesthesia Services



### ***David O. Yablok, MD***

Assistant Professor Clinical  
Director, Off Site Anesthesia

2007 has been a year of growth, change, innovation, and education for the off site (out of OR) anesthesia service. Providing anesthesia care in locations other than the operating room continues to be an increasingly important part of the health care delivery system.

### **Growth**

- The service now consist of up to five separate unique anesthesia locations designated as OR 99, 98, 97, 96 and 95.
- The total number of cases has increased throughout the year. The average number of monthly cases in the first quarter of 2007 was 76.3. The average monthly case count in the last quarter was 124. This represents an increase of 62.5%.
- Added coverage of the electrophysiology procedures. State of Ohio law forbids registered nurses to administer deep sedation or to give propofol and therefore we have been asked to provide general anesthesia for a potentially large number EP cases. While this is still in the crescendo stage, the EP lab potentially will represent a significant number of procedures.
- We worked closely with nursing, EP physicians, and EP technologists to develop protocols, relationships, and to obtain the capital equipment necessary for this new service.

## **Change**

- We no longer provide anesthesia for Blood Brain Barrier Disruption procedures mostly do to Medicare changes.
- The number of GI procedures has increased. The GI services have also greatly improved their facilities by moving to a new building.
- The number of MRI procedures has also increased.

## **Innovation**

- We are continually improving and refining our techniques for patient care.
- 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 \$2000 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 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.

## **Education**

- We have developed a one week rotation for residents to learn to perform anesthetics out of the operating room. This is in association with their week of PACU. With feedback, the experience will constantly be improved.
- At the beginning of the year, almost all cases were performed by an anesthesiologist solo. Currently, with our generous staffing situation, coverage in most cases includes a resident or CRNA along with an anesthesiologist. Therefore, more and more members of the department are becoming comfortable, experienced, and efficient in the out of OR environment.
- This educational component, while still in development, is important because it seems on the local and national level, off site (out of OR) cases are becoming a larger part of our anesthetic experience.

## OSU Hospital East



### ***Fernando Arbona, MD***

Assistant Professor Clinical  
Clinical Director, Ohio State University Hospitals East

The surgical volume at OSU East Hospital continued to grow over the past year, with the additional cases provided by new surgeons specializing in several areas of orthopedics, thoracic surgery, and ENT. With the surgical volume increasing by 435 cases (+5.7%) this past calendar year, we were still able to continue our quality and efficient care, while further expanding our focus on regional anesthesia. The further development and application of ultrasound guidance in regional anesthesia, as well as the increased use of perineural catheters, over the past year has led to a significant improvement of our patient satisfaction scores in regards to pain control in the operating room venue. This also has had a positive impact on the public relations of our department, with focused televised stories and interviews that have been aired on 10 TV's Health Watch, the Ohio News Network, and a national video news release, as well as published techniques in the anesthesia literature.

Dr. Fernando L. Arbona is Clinical Director for Anesthesiology at OSU East. The other members of the anesthesia faculty with a 100% FTE allocation to OSU East are Drs. Babak Khabiri, John Norton, and Alan Kover. Other faculty members who have 25% to 50% FTE allocation to OSU East include Drs. Thomas Reilley, M. Farid Edwards, Andrew Roth, and W. Daniel Traetow. We all continue to work well with the preoperative nurses, the surgeons, and the Medical Management Team (MMT) to ensure high-quality and efficient preparation of the operative patients. Over the past year, the operating room management team has developed an OR block time schedule, with the availability of the time based on the surgeon's utilization of their blocked time, to further improve the efficiency of the operating rooms. Currently there are a total of 13 functioning operating rooms, of which 12 to 13 have blocked surgical time almost every day.



For the upcoming year, we expect our surgical volume to continue to grow significantly. The area specific to anesthesia that we wish to develop the most during this time 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.

<b>OSUHE</b>	
<b>SURGICAL CASES</b>	
<b>FOR CALENDAR YEARS 2006 AND 2007</b>	
<b>TOTAL CASES CY2007</b>	<b>8010</b>
<b>TOTAL CASES CY2006</b>	<b>7575</b>
<b>INCREASE</b>	<b>435</b>
<b>% INCREASE</b>	<b>5.7%</b>

## **Pain Medicine Services**



### ***Steven A. Severyn, M.D., M.B.A***

Assistant Professor Clinical

Director, Pain Medicine Services

Director, Pain Section, The Ohio State University Comprehensive Spine Center

Director, Multi-disciplinary Pain Medicine and Regional Anesthesia Fellowships

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

Within the past year we combined outpatient non-cancer chronic pain services and inpatient pain services under a dedicated provider group of one full-time and four part-time physicians. Three of these physicians participate in both outpatient and the full spectrum of inpatient services and bring a common skill set to both settings that results in coordination of patient care efforts to a degree that the department has not previously enjoyed. The inpatient service more overtly provides care across a spectrum of acute and chronic pain conditions, primarily in a consulting role while also actively managing components of patient care concerning painful conditions. In daily practice, the perioperative epidural and peripheral catheter infusion service (the Regional Anesthesia Acute Pain Management or RAAPM service) has been absorbed into the inpatient service, and three of the program physicians undertake simultaneous assignment to the RAAPM service and the inpatient program. My impression is that although quality of service has improved, this service sector is not yet fully utilized within the institution. Outreach programs to the several surgical and medical services need to be undertaken during the coming year.

Patient care responsibilities have been coordinated between the anesthesiology-based and the internal medicine-based pain services. Excluding intrathecal drug delivery cases, the Department of Anesthesiology-based service is responsible for all perioperative (non-cancer and cancer related) and for all other non-cancer (acute and chronic) pain issues. The Department of Internal Medicine-based Pain & Palliative Medicine service is responsible for non-perioperative cancer pain issues.

In addition, the Department of Anesthesiology-based service provides intrathecal catheter and programmable infusion pump implantation in the care of patients of several categories. These are patients with pain due to chronic non-cancer conditions, pain due to cancer conditions, and spasticity. Such patients receive their primary 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 prescribing for cancer pain. The (Cancer) Pain & Palliative Medicine service and the PM&R Service routinely call on the Department of Anesthesiology to participate in management of hospitalized patients receiving intrathecal infusions of opioids, baclofen, or a combination thereof. Consideration and implantation of intrathecal and pump infusion drug delivery devices during initial inpatient service contact has become more frequent and routine. Establishing the regular presence of physicians experienced in pump management on the inpatient service has resulted in a much closer integration of the individual services, benefiting patient satisfaction and efficient provision of care.

Lastly, the Department of Anesthesiology established weekend attending physician presence for care of hospitalized patients. Routine physician hospital presence benefits from service economic performance, availability of pain medicine patient consultation and follow-up to other inpatient services, efficient delivery of continuous care, and patient satisfaction. These benefits have been particularly noticed by the Division of Thoracic Surgery.

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

One full-time and three part-time (60% FTE) physicians participate in this program and provide 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 is out-performing budgetary projections for FY 2008-2009. Department of Anesthesiology physicians serve in intake, procedural and procedural referral, and follow-up care capacities. The service location for operative care moved to Ohio State University Hospital East during this year, including the performance of more complex invasive procedures in the Invasive Radiology suites of that site so as to allow for conscious sedation and associated patient recovery.

Through this sector of responsibility (although never at the Spine Center facility), the Department of Anesthesiology physicians provide pain medicine consultative and procedural services to inmates of the Ohio Department of Corrections and in doing so satisfy an obligation of OSUMC to provide full-spectrum tertiary care to the state

correctional program. 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. However, at present, fluoroscopic procedures for this patient population can only be provided utilizing an OSUMC operating room facility due to security issues, and at a rate of only four patients in an afternoon (as opposed to eight to ten or more non-institutionalized patients in a Spine Center afternoon), a time-consuming, inefficient, and dis-incentivizing circumstance of practice. We are clearly providing insufficient physician resources to meet the referral base demand for care of this population at the present time. However, it is unclear the degree to which even our present level of service is appreciated or rewarded by OSUMC.

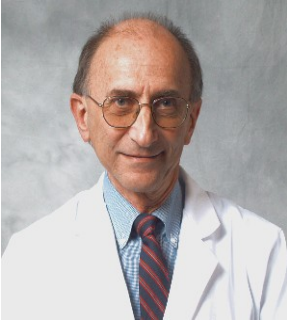
The availability of our physicians for care of chronic pain conditions not due to spinal diseases appears still to be under-recognized within the Medical Center at large as indicated by a limited occurrence of referrals for conditions other than of spinal etiology. Patient referral for non-spinal pain conditions from outside the institution is even less common, and may yet be falling subject to scheduling bias or role appreciation. Our capacity to accept new patients for medical management, regardless of physician practice affiliation, remains capped. Approaching these obstructions to growth opportunities will require the re-establishment of a Pain Medicine Center that if not housed at a separate location will be at least recognizable as a distinct clinical entity. Our ability however to respond to such growth opportunities will depend upon our ability and financial capacity to recruit several more physicians and retain those we currently have. At present, conditions do not appear favorable for attaining these outcomes.

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

ACGME requirements of fellowship education in the subspecialty of pain medicine became effective July 1, 2007. Our program responded by establishing an educational program that 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 outpatient clinics of the three non-Anesthesiology departments. Morbidity and Mortality Conferences and Pain Medicine Journal Club Meetings have become category 1 credit activities. Research activity remains scant despite encouragement. Multiple online educational programs to satisfy ACGME competency-related objectives have been added. The faculty complement is at an institutional all-time high. A program site visit took place in November of which a report has not yet been returned but concerning which we felt went extremely well. We have submitted a request for an increase in trainee complement from the present one fellow accreditation to a new complement of four fellows.

We are in the process of establishing a non-accredited Regional Anesthesia Fellowship to begin July, 2008 and have extended an invitation to an interested Department of Anesthesiology CA4 resident. The didactic material will incorporate new areas more specific to regional anesthesia and will retain significant portions of the Pain fellowship material content. Clinical service sites will emphasize OSUMC but will also incorporate OSUH-East locations. The Department has requested upgraded ultrasound units for needle localization. The program is expected to have significant research and academic potential and also to expand employment of regional anesthesia techniques for analgesia at the primary practice location.

## Transplant Anesthesia



### ***Ernesto Goldman, MD***

Associate Professor

Director, Transplant 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 38 liver transplant cases.
- Interact with the transplant surgeons regarding scheduling, assignment, and management of difficult cases.
- Teaching residents and CRNA's and supporting junior faculty in the complex liver and kidney transplant cases.
- Data gathering for an active IRB protocol #2004H0168, PI E.Goldman M.D., part of a multicenter study on the effect of vasopressin on renal function during liver transplantation.
- Membership OSU Liver Program Strategic Program. Work in progress: Assessment and policy on the blood products usage during liver transplantation (December 15, 2006 presentation).
- Manuscript in progress (E.Goldman M.D. 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. (2006 ILTS presentation).

## Education



### ***Ronald Harter, MD***

Vice Chair of Education and Professional Development  
Residency Program Director

What defines the ideal anesthesiology residency program? In my opinion, it combines a clinical experience filled with challenging cases across the spectrum of anesthesiology subspecialties, combined with a strong didactic program that facilitates successful completion of the Board examination process. It is critically important that this all transpire in an environment that is friendly, supportive, and stimulating. OSU's anesthesiology residency program provides all of those components.

The extensive list of required cases and procedures, as delineated by the ACGME's Residency Review Committee for Anesthesiology, helps to assure that residents trained in anesthesiology have adequate exposure to cases across all anesthesiology subspecialties. The clinical experience available at OSU is sufficient to permit our residents to complete the majority of their clinical case requirements by the end of their CA-2 year, essentially leaving the CA-3 year for the pursuit of subspecialties of interest, including a variety of clinical and basic science research opportunities, without being encumbered by having to complete case requirements. With the exception of the rotations in Pediatric and Regional Anesthesia, all rotations are conducted at the OSU Medical Center complex, fostering a "team" approach, and allowing great friendships and camaraderie to develop during residency training.

OSU's Anesthesiology Residency program has a long-standing tradition of excellence in preparing its graduates for success in the board certification process. Year in and year out, our pass rates for the written and oral exams are above the national average. In the past twenty years, virtually 100% of our graduates have successfully obtained ABA certification. The relatively small size of this residency program ensures that a resident here will get individual attention and not become "lost," while being large enough to

provide peer support and interaction. In our resident selection process, we value those residents who have demonstrated a commitment to teamwork, cooperation, and leadership. The end result is a terrific group of residents who work well together, becoming excellent anesthesiologists while building lifelong friendships.



## Research



### *Fedias Christofi, PhD*

Professor Anesthesiology, Physiology & Cell Biology  
Vice Chair of Research

**In 2007, beginning with Dr. Zvara's appointment, progress was made in research in the following areas:**

- 1) Developed research infrastructure.
  - 2) Provided seed funds, mentors, non-clinical time, laboratory space and the research infrastructure for 4 physician scientists to develop their independent research programs and seek extramural/NIH funding.
  - 3) Expansion of basic and clinical research programs.
  - 4) Improve our funding record.
  - 5) Established metrics of accountability based on national standards to evaluate success and progress. We established a time line for achieving goals.
  - 6) We invested in research with fiscal responsibility.
- There are 56 research personnel in the department that includes 14 principal investigators, 8 Co-Principal investigators, 13 research support personnel, 4 undergraduate/graduate students, 3 foreign national fellows, 1 MSP student, 1 surgical fellow, 1 cardiac clinical research fellow, 2 NIH road-map fellows and ten other medical students and residents doing research. **This represents an increase of 24 new recruits in research in 2007 compared to 2006; and 4 new physician investigators on clinical trials.**
  - **Created an internal jump start fund mechanism and extended the OSARF grant mechanism to support small seed grants for clinical or basic research of our faculty/residents (5-10K/grant; awarded two grants, one for a new clinical trial aimed at improving the standard of care for patients)**

- **Technical Editor:** We recruited a technical editor who will start in July 2007.
- **MOU with Center for Biostatistics:** signed an MOU with the Center of Biostatistics and Dr David Jarjoura to provide team support of our research programs, and education for the residents.
- **Cramblett Hall research space:** Construction on our Cramblett Hall shared research staff space has begun and we anticipate having our research personnel relocating by June 1<sup>st</sup> 2008. A research secretary was recruited who will work in this new space.
- **More Protected time awarded:** Non-clinical protected research time awarded increased every year since 2004. In 2007, non-clinical research time increased by 18% over 2006.
- **Journal articles with more impact:** We published 21 journal articles in 2007 that was the same as 2006, but the number of impact publications has doubled in the past year. The average impact factor was 2.52, slightly up from 2.2 in 2006. These include publications in JBC, Antioxid Redox Signaling, Obesity Surgery, AJP, IJP, NGM, Anesthesia & Analgesia, J Neurosurgery, ASAIO, J. Clinical Anesthesia, etc. There were 6 chapters, reviews published compared to 3 in 2006.
- **Book Publishing:** Dr Zvara published a book on Anesthesia for Cardiac Surgery.
- **Increase in abstracts:** 73 abstracts presented at national and international meetings in 2007 compared to 55 in 2006.
- **Increase public awareness and reputation:**
  - 8 news releases/media publications from our department in 2007 compared to 1 news release in 2006; includes a news release on JBC publication by one of our investigators
  - Research conference/symposium: In 2008, January 11<sup>th</sup>, we had an Anesthesiology research conference/symposium with 15 faculty, fellows, residents and students presenting their ongoing research projects. It was held in 518A/B James and attended by 100 people including faculty and others in the College.
  - National advertising initiative to introduce our department.
  - Landacre Honor Society Research Fair 2007, pamphlets etc.
- **Doubling in Grand rounds:** 77 grand rounds presented at local or national centers given by our faculty compared to 37 in 2006.

- **Growth in Clinical Trials:** In 2007 we had 11 active clinical trials that represent an increase of 7 new clinical trials from 2006. A total of \$515,000 was awarded from industry compared to \$197,740 in the previous year. A total of \$337,227 was received from clinical trials at OSURF in 2007 compared to \$63,563 in 2006.
- **NIH grants:** We have a 5 year R01 NIDDK grant and a 5 year K08 NIDDK grant totaling \$414,000 in 2007. One physician scientist received a RIF for \$42,000 and an AHA small grant for \$25,000.
- **Awards increased:** Overall, in 2007 we saw an increase of 87.5% in number of awards (8 to 15), an increase of 53% in \$ awarded (\$971,238 vs. \$634,978) and a 58% increase in \$ received by OSURF (\$793,465 vs. \$502,801).
- **NIH Grant submissions:** Additional efforts to secure NIH/other funding that were so far unsuccessful include 12 grants totaling \$8,654,748 in 2007 (NIH NHLBI, AHA, NIH NIDDK, R21 or R01 grants, IARS grants or Children's Cardiomyopathy Assoc).
- **2008 progress:** In the first 3 months of 2008, 5 clinical trials and 2 NIH grants brought to OSURF \$408,000. We also have \$2,501,000 in extramural grants pending.
- **Scored NIH grants:** Two other NIH grants were scored. A clinical NIH CIDO R21 grant on obesity surgery (PI, Christofi, Co-PI Awad, Wunderlich, Needleman, Huang, Fernandez, Emery) received a score of 184 and will be resubmitted July 2008 (-an NRSA for a visiting professor received a 296 score from a Neurosc study section).
- **New Clinical Investigators:** There are 4 new Principal Investigators on new clinical trials involving kidney protection, factor VII, post-operative ileus (POI) and opioid induced bowel obstruction (OBD); these areas are important considerations for us in 2008 new research initiatives that have potential for NIH grant submissions (i.e. OBD, POI).
- **Fiscal responsibility** – In terms of salary expenditures in 2007, the department invested \$382,786 while OSURF or other support mechanisms cost-shared \$485,885 (i.e. foreign national fellowships, NIH road map funding, NIH grants, clinical trial funds, etc). The total salary expenditures in 2007 were \$868,672 from department and OSURF/other support. Therefore, OSURF: Dept salary cost sharing was 56%:44%. If we look at all expenditures, the total costs for salaries, supplies and equipment for 2007 is \$1,018,672 and the OSURF: Dept cost share was 48%:52% - this includes ~ seed-funds for 4 physician scientists to develop their extramural funded programs over 2-3 years.

## 2008

In 2008, as outlined and discussed at our annual faculty retreat March 1<sup>st</sup> 2008, our focus will be on impact publications, NIH submission/scored grants, continue to develop our research infrastructure and aggressively recruit an NIH funded Neuroscientist to complement our strengths. Areas of focus include neuroscience, ischemic spinal cord injury, neuroimaging, cardiovascular diseases, neurogastroenterology, POI, OBD. We need to develop and standardize our clinical research practice (budgets, billing, management, etc), set-up a certified clinical research lab, and further align with College Programs.

**National ranking:** We are currently ranked 35<sup>th</sup> among 138 Anesthesiology departments according to NIH rankings. Our goal is to align our selves with the College mission to be top 20. In this category, in 5 years, our target is to be at 23-24<sup>th</sup> in the country; this includes recruitment of 1 NIH funded Neuroscientist - 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).

### Honors/Awards

Dr. Bergese - Recipient of the 2007 OSUMC Research Day Award, The Ohio State University.

Monreal, G - 1<sup>st</sup> place, Oral Presentation Competition, Research Staff category (\$500 travel award). Dorothy M. Davis Heart and Lung Research Institute 2<sup>nd</sup> Annual Research Retreat and Abstract Competition. The Ohio State University, April 17, 2007.

Vogt, K - Landacre Honor Society induction, Ohio State University College of Medicine – 2007

Vogt, K - Educational stipend, International Society for Magnetic Resonance in Medicine – 2007

Vogt, K - 1<sup>st</sup> place presentation, Midwest Anesthesia Resident's Conference – April 2007

## **IRB Protocols**

### **Elsayed-Awad, Hamdy – Principle Investigator**

- The role of T cells and HSP70 in ischemic spinal cord injury after thoracoabdominal aortic aneurysm repair at The Ohio State University Medical Center – Prospective Analysis.
- The impact of comorbidities and a protonin administration on the change in creatinine in a single center study.

### **Bergese, Sergio – Principle Investigator**

- Evaluating the safety and efficacy of dexmedetomidine used for sedation during elective awake fiberoptic intubation.
- Evaluating the safety and efficacy of Dexmedetomidine for sedation during monitored anesthesia care.
- Awake intubation: Why not Dexmedetomidine for airway management?
- Aprepitant vs. Ondansetron in preoperative triple-therapy treatment of nausea and vomiting.
- Variation of the cerebral state index during carotid cross-clamping in patients undergoing carotid endarterectomy.
- Clinical validation of the MEDRAD MRI monitor.
- Intraoperative somatosensory evoked potential and Desflurane MAC levels for craniotomies.
- A phase III, randomized, double-blind, placebo-controlled, multicenter study evaluating the efficacy and safety of Dexmedetomidine in the prevention of postoperative delirium in patients undergoing heart valve surgery with cardiopulmonary bypass.
- 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).

### **Exempt protocols**

- Retrospective study of effects of Dexmedetomidine on intraoperative somatosensory evoked potentials.
- Economics of readmission of patients having undergone a surgical procedure and a case for the use of cost-saving anti-emetic prophylactic treatment for postoperative nausea and vomiting.
- A review of effects of dexmedetomidine during neurological surgery.

### **Christofi, Fievos – Principle Investigator**

- Neural bowel physiology and dysfunction in inflammatory bowel disease.
- Impact of gastric bypass/banding on adipocyte purine genes, diabetes, and depression. (Co-PI: Christofi)

### **Howie, Michael**

- Myocardial electrical impedance during myocardial revascularization in off-pump coronary artery bypasses surgery.
- Monitoring human cardiac allograft rejection via myocardial electrical impedance.

### **Xia, Yun – Principle Investigator**

- Effect of histamine on human enteric nervous system in vitro.
- A randomized, double-blind, placebo-controlled study of the dose-effects of Neostigmine in spinal anesthesia for knee surgery.
- A randomized, double-blind, placebo-controlled study of the dose-effects of Neostigmine in spinal anesthesia.
- Multicenter, randomized, placebo-controlled, double-blinded study of the efficacy and safety of Lubiprostone in patients with opioid-induced bowel dysfunction.

## **Research Funding**

### **Active:**

#### **Christofi, Fievos**

R01 DK44179-12 to 17 (Christofi, FL, PI)  
12/01/2005 to 11/31/2010

Source: NIH NIDDK

Title: *Purinergic regulation in Enteric Neural Reflexes*

Role: Principal Investigator

1R01 ES12991-01 (Wani, AA, PI)  
6/1/2004 – 5/31/2009

Source: NIH

Title: “Cross-talking pre-incision events of eukaryotic NER

Role: Consultant

**Gerhardt, Mark**

Source: National Heart Foundation:

4/1/2006 – 3/31/2008

Title: *PKA-phosphorylation of beta 2-adrenergic receptors in CHF.*

Role: Principal Investigator

**Xia, Yun**

K08 DK 60468-01 Yun Xia (PI)

07/01/2003 - 06/30/2008

Source: NIH/NIDDK

Title: *GDNF in The Enteric Nervous System*

Role: Principal Investigator

**Pending:****Gerhardt, Mark**

Source: National Institutes of Health

Type: R21

Period of funding: July 1, 2008 – June 30, 2010

Title: *Cytoskeletal alterations in congenital heart disease.*

Role: Principal Investigator:

Source: Davis/Bremer Medical Grant

Period of Funding: March 1, 2008 – March 1, 2010

Title: *Molecular remodeling in the absence of hemodynamic perturbations in a porcine model of ventricular septal defect.*

Role: Principal Investigator

Source: American Heart Association, Great Rivers Affiliate, GIA

Period of Funding: July 1, 2008 – June 30, 2010

Title: *Cytoskeletal abnormalities in pediatric heart disease: evidence for early repair of restrictive VSD?*

Role: Principal Investigator

Source: Society of Cardiovascular Anesthesiologists

Period of Funding: July 1, 2008 – June 30, 2010

Title: *Cytoskeletal alterations in a porcine model of restrictive ventricular septal defect.*

Role: Principal Investigator

**Hassanain, Hamdy**

Source: NIH

Type: R01

Title: *The Role of Profilin1 in Vascular Remodeling*

Role: Principle Investigator

Co-Investigators: Fievos Christofi, Arthur Strauch

**IACUC Protocols**

- #2007A0037 Expires 7/31/08. *Exploring the mechanisms of postoperative ileus in a canine model.*  
PI: **Christofi F**
- #2002A0100 Expires 07/31/2008. *Alterations of gut-nerve function in intestinal inflammation.*  
PI: **Christofi F**
- #2002A0110 Expires 8/31/08. *Mechanical assistance in an ovine model of chronic heart failure.*  
PI: **Gerhardt MA** and Phillips AB.
- #2005A0187 Expires 11/30/08. *Ovine model of right ventricular failure.*  
PI: **Gerhardt MA** and Phillips AB.
- #2007A0178 Expires 8/24/10. *Porcine model of ventricular septal defect.*  
PI: **Gerhardt MA** and Phillips AB.
- #2006A0001 Expires 1/31/08. *RAC 1 gene regulates cutaneous wound repair.*  
PI: **Hassanain H**
- #2005A0008 *Gene knock-out and transgenic rodents: Generation and training in use of*  
PI: **Hassanain H**
- #2007A0008 Expires 1/19/09. *Actions of glial cell derived neurotropic factor (GDNF) in the enteric nervous system.*  
PI: **Xia Y**



## **Resident Roster**

### **Interns**

**Christopher Annis, MD**

**Steven Beckley, MD**

**John Coffman, MD**

**Nicholas Franklin, MD**

**Feyce Peralta, MD**

**Tinu Thomas, MD**

### **CAI**

**Barrington Arthurs, MD**

**Eric Barua, MD**

**Nathan Beget, MD**

**Jason Chung, MD**

**Matthew Fabian, MD**

**Heather Gensel, DO**

**Omega Griffin, MD**

**Matthew McKiernan, MD**

**Alok Moharir, MD**

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Karl Amstutz  
Peggy Barnum  
Amber Billick  
Terry Craig  
Joe Culver  
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G. Reza Emami  
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Joseph Friessen  
Veronica Haverick  
Shawn Hedderman  
Andrew Hicks  
Eric Hoover  
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Sue Kirshner  
John Lymanstall  
Chuck Martin  
Tracey Marks  
Christine Marx  
Connie Moore  
Patty Moomaw  
Herb Neff  
Kami Nemcik  
Barbara Olcott  
Frank Pace  
Elizabeth Paul  
Frank Perin  
Christine Pitts  
Patty Rabinowitz  
Margaret Reichert  
Phil Rinehart  
Christopher Rosile  
Christina Saas  
Dick Saucier  
Raymond Sanzo  
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## Publications

### Peer Reviewed Journal Articles

1. Antonio BL, Royster RL, Kon ND, **Zvara DA**. 2007. Acute biventricular pacing after cardiopulmonary bypass decreases myocardial dyssynchrony and increases cardiac index. *Journal of Cardiothoracic and Vascular Anesthesia*, 21 (No 4): 570-571. IF = 1.075
2. Baig MN, Immesoete P, Lubow M, **Bergese SD, Elsayed-Awad H**, Mendel E. 2007. Visual loss after spine surgery: A review of literature. *Journal of Neurosurgery*, Volume 23: 1-9. IF = 2.242
3. Baig MN, Lubow M, Immesoete P, **Bergese SD, Hamdy EA**, Mendel E. Vision Loss After Spine Surgery: Review of the Literature and Recommendations. *Neurosurg Focus*. 2007;23(5):E15.
4. **Bergese SD, Khabiri B, Roberts WD, Howie MB, McSweeney TD, Gerhardt MA**. Dexmedetomidine for conscious sedation in difficult awake fiberoptic intubation cases. *J Clin Anesth*. 2007 Mar;19(2):141-4. Erratum in: *Journal of Clinical Anesthesia*. 2007 Jun;19(4):323. IF = 1.028
5. **Bergese SD, Khabiri B, Roberts W, Gerhardt M, McSweeney T, Howie MB**. 2007. Use of Dexmedetomidine for sedation in difficult awake fiberoptic intubation cases. *Journal of Clinical Anesthesia*, March, Volume 19 (Issue 2): 141-144. IF = 1.028
6. Brooker, Robert, F; **Zvara, David, A**; Roitstein, Alexander. 2007. Mediastinal mass diagnosed with intraoperative transesophageal echocardiography. *Journal of Cardiothoracic and Vascular Anesthesia*, 21 (2): 257-258. IF = 1.075
7. Chen Z, Suntres Z, Palmer J, Guzman J, Javed A, Xue J, Yu JG, Cooke H, **Awad H, Hassanain HH**, Cardounel AJ, **Christofi FL**. Cyclic AMP signaling contributes to neural plasticity and hyperexcitability in AH sensory neurons following intestinal *Trichinella spiralis*-induced inflammation. *Int J Parasitol*. 2007 Jun;37(7):743-61. IF = 3.337
8. **Elsharydah A**. Unusual Response to Dexmedetomidine in patient with brain injury on an intrathecal baclofen infusion. *The Internet Journal of Anesthesiology*. 2007. Vol.14 No. 2.

9. Emery CF, Fondow MD, Schneider CM, **Christofi FL**, Hunt C, Busby AK, Needleman BJ, Melvin WS, **Elsayed-Awad HM**. Gastric bypass surgery is associated with reduced inflammation and less depression: a preliminary investigation. *Obesity Surgery* 2007 Jun;17(6):759-63. Erratum in: *Obesity Surgery* 2007 Jul;17(7):996. IF = 3.723
10. Gao N, Hu HZ, Liu S, Gao C, **Xia Y**, Wood JD. Stimulation of adenosine A1 and A2A receptors by AMP in the submucosal plexus of guinea pig small intestine. *Am J Physiol Gastrointest Liver Physiol*. Feb;292(2):G492-500, 2007. IF = 3.681
11. **Hachwa, Bachar; Walker, Michele; Dalton, Ryan; Gerhardt, Mark; Bergese, Sergio D**. 2007. Giant cerebral aneurysm clipping in combination with coronary artery bypass graft. *Anesthesia and Analgesia*, 104 (1): 220-1. IF = 2.131
12. **Hassanain HH**, Gregg D, Marcelo ML, Zweier JL, Souza HP, Selvakumar B, Ma Q, Moustafa-Bayoumi M, Binkley PF, Flavahan NA, Morris M, Dong C, Goldschmidt-Clermont PJ. Hypertension caused by transgenic overexpression of Rac1. *Antioxid Redox Signal*. 2007 Jan;9(1):91-100. IF = 4.491
13. Kim M, **Christofi FL**, Xue J, Robinson JM, Cooke HJ. Mechanically evoked 5-hydroxytryptamine release is mediated by caveolin-associated cholesterol rich membrane domains. *Neurogastroenterology & Motility* 2007 Apr;19(4):309-17. IF = 3.338
14. Miller RJ, Dean DE, Hamilton S, **Gerhardt MA**. Amniotic fluid embolism. *Fed Pract* 2007;24(2):17-20, 23-24, 32.
15. Monreal G, **Gerhardt MA**. Left ventricular assist device support induces acute changes in myocardial electrolytes in heart failure. *ASAIO J* 2007;53:152-158. IF = 1.534
16. Minhaj, Mohammed, M; **Zvara, David, A**; Nayyar, Pankaj; Maslow, Andrew. 2007. Case 1-2007 morbidly obese patient undergoing cardiac surgery. *Journal of Cardiothoracic and Vascular Anesthesia*, 21 (1): 133-143. IF = 1.075
17. Wang GD, Wang XY, Hu HZ, Liu S, Gao N, Fang X, **Xia Y**, Wood JD. Inhibitory neuromuscular transmission mediated by the P2Y1 purinergic receptor in guinea pig small intestine. *Am J Physiol Gastrointest Liver Physiol*. Jun;292(6):G1483-9, 2007. IF = 3.681



## **Books**

1. Burch TM, Groban L, **Zvara DA**. 2007. *Conquer the PTE Exam*. Philadelphia: Saunders
2. DiNardo JA, **Zvara DA**. 2007. *Anesthesia for Cardiac Surgery, 3rd Edition*. Blackwell Publishing Limited.

## **Chapters In Books**

3. Burch TM, Groban L, **Zvara DA**. 2007. "Transesophageal echocardiography-Examinations, questions, etc." In *Conquer the PTE exam*, ed. Longnecker DE, ed Anesthesiology. Atlanta: Saunders/Elsevier.
4. Chaney MA, Cheung AT, Troianos CA, Willert JL, **Zvara DA**, Sherman SK. 2007. "Cardiac Anesthesia." In *Anesthesiology*, ed. Longnecker DE, ed. New York: McGraw Hill.

## **Edited Chapters in Books**

1. Martin D, **Gravlee G** and Hensley F. 2007. *Introduction of Anesthesia*. Philadelphia: Lippincott Williams & Wilkins  
Martin D, Gravlee G and Hensley F. 2007. *Introduction of Anesthesia*. Philadelphia: Lippincott Williams & Wilkins.

## **Reviews**

**Zvara DA**. 2007. Review of Transesophageal Echocardiography. HSF Reviews.

## **Abstracts presented July 2006 to June 2007**

1. Carlos L. del Rio, Monica Kukielka, **Roger Dzwonczyk**, George E. Billman, Michael B. Howie.  $\beta$ AR activation alters electrical coupling during submaximal exercise in dogs with healed infarcts (abstract). *Anesthesiology* 2006:A657.
2. Fei G, Liu S, Wang G, Qu M, Wang X, Zou F, Du Y, **Xia Y**, and Wood JD. Stimulation of mucosal secretion by lubiprostone in guinea-pig small intestine and colon. *Gastroenterology*, 132 (4, Suppl 2): A-683. May 2007.
3. Monreal G, **Gerhardt MA**. Progressive accumulation of the acute stress protein  $\alpha$ B-crystallin in an ovine model of chronic heart failure. *Anesth Analg* 2007;104:S-39.

4. Monreal G, **Gerhardt MA**. Myocardial Akt/GSK-3 $\beta$  phosphorylation is region-specific in an ovine model of microvascular heart failure. *J Card Fail* 2007;13 Suppl 2:039.
5. Phillips AB, Monreal G, Cook AC, Bauer JA, Galantowicz M, **Gerhardt MA**. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. *JACC* 2007;49:1016-61.
6. Qu M, Wang X, Liu S, Wang G, Fei G, Zou F, Du Y, **Xia Y**, and Wood JD. Bradykinin-induced cyclooxygenase-2 expression and prostaglandin E2 release in the enteric nervous system of guinea-pig small intestine. *Gastroenterology*, 132 (4, Suppl 2): A-330. May 2007.
7. Qu M, Hu H, Gao N, Wang G, Wang X, Fei G, Zou F, Du Y, **Xia Y**, Wood JD, and Liu S. Synaptic activation of Trpc channels by metabotropic purinergic P2Y1 receptors in the submucosal plexus of the guinea-pig small intestine. *Gastroenterology*, 132 (4, Suppl 2): A-18. DDW meeting (Oral presentation) May 2007 in Washington DC.
8. Rybaczyk L, Wunderlich JE, Circle K, Needleman B, Melvin WS, Grants I, Huang K, **Christofi FL**. (2007). Differential dysregulation of ADORA3, ADORA2A, ADORA2B, and P2RY14 expression profiles from 37 purine-genes in mucosal biopsies and peripheral blood mononuclear cells in inflammatory bowel disease. *Gastroenterology*. **132**; Suppl. 2, A-246.
9. **Shao Y, Gravlee G, Gerhardt MA**. Left atrial compression by collapsed left upper lobe lung causes acute pulmonary hypertension after cardiopulmonary bypass – a case report. *Anesth Analg* 2007;104:SCA1-123.
10. **Vogt KM, Ibinson JW, Schmalbrock P, Small RH**. End-tidal CO<sub>2</sub> correction modulates thalamic activation in FMRI of pain. *Anesthesiology* 2007; 107: A2023
11. Wang G, Wang X, Fei G, Liu S, Zou F, Du Y, Qu M, **Xia Y**, and Wood JD. Synaptic behavior in the enteric nervous system (ENS) of guinea-pigs with experimentally-induced enterocolitis or Food Allergy. *Gastroenterology*, 132 (4, Suppl 2): A-332. May 2007.
12. Wang X, Wang G, **Xia Y**, Liu S, Fei G, Zou F, Du Y, Qu M, and Wood JD. Enteric mast cells in experimental allergic and non-allergic enterocolitis in guinea-pigs. *Gastroenterology*, 132 (4, Suppl 2): A-332. May 2007.

13. Xue, J, **FL Christofi** and HJ. Cooke. Mechanosensitive release of calcium or 5-HT;P2 mechanosensitive release of calcium or 5-HT:P2Y1receptor over-expression in human BON cells. *Gastroenterology* 132:A-242, 2007.
14. Xue, J, **FL Christofi** and HJ Cooke. P2Y12 receptors inhibit mechanosensitive release of 5-HT from human carcinoid BON cells. *Gastroenterology* 132:A547, 2007.
20. **Armen T, Nathan N.** Identification of segmental left ventricular ejection fraction changes with cardiac positioning during off-pump coronary artery bypass (OPCAIB) using 3D echocardiographic left ventricular analysis. Presented at SCA Annual Meeting. 2007.
21. **Armen T** and N. Nathan .Identification of segmental left ventricular ejection fraction changes with cardiac positioning during off-pump coronary artery bypass (OPCAB) using 3D-Echocardiographic left ventricular analysis. Midwest Anesthesia Residents Conference, St. Louis, 2007
22. **Armen TA, K. Turner, N. Nathan.** Minimal asymmetric septal hypertrophy without physiologic impact in a normally positioned heart causing LVOT obstruction during heart positioning for OPCAB surgery: A 2D and 3D-Echocardiographic assessment. Midwest Anesthesia Residents Conference, St. Louis, 2007
23. **Awad H, Louis L, Abdeldayem M, Yanssens T, Blais D, Sun B.** Anesthetic experience with off pump left ventricular assist device implantation: A single center review of the first twenty consecutive cases. Presented at SCA Annual Meeting. 2007. [Peer Reviewed]
24. **Awad H, Ohr M, Patel V, Kirk-Fetsko L, Yan W.** Effects of Deep Trendelenburg positioning and anesthesia on intraocular pressure during robotic prostatectomy. Presented at 2007 Ophthalmology Research Symposium. 2007. [Peer Reviewed]
25. **Barua E., Dzwonczyk R., Rogers B, Bergese SD.** The OSU iMRI Experience. Presented at 6th Annual Graduate and Postgraduate Research Day, Columbus, Ohio. March 29, 2007.
26. **Barua E., Dzwonczyk R., Rogers B, Bergese SD.** The OSU iMRI Experience. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.

27. **Bender SP, Bergese SD.** Intraoperative anemia and brain monitoring depressions, a case report. Presented at 6th Annual Graduate and Postgraduate Research Day, Columbus, Ohio. March 29, 2007.
28. **Bender SP, Bergese SD.** Change in BIS value due to acute intraoperative anemia: A case report. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.
29. **Bender SP, William Roberts, Sergio Bergese.** BIS index change due to acute intraoperative anemia: A case report. Midwest Anesthesia Residents Conference, St. Louis, 2007
30. **Dzwonczyk R,** Brown CG. Noninvasive monitoring of subjects in cardiac arrest using ECG parameters predictive of outcome (abstract). BIO2007 International Conference, Boston, MA, May 8, 2007.
31. **Dzwonczyk R,** del Rio CL, Howie MB. Measuring human heart muscle viability with myocardial electrical impedance (abstract). BIO2007 International Conference, Boston, MA, May 8, 2007.
32. **Bergese Sergio, Fujii, Jeffrey, Nieves-Ramos, Dzwonczyk Roger.** Clinical evaluation of the MEDRAD versus MR iMRI patient monitor (abstract). Anesthesiology 2007 Annual Conference, A1713.
33. **Gerhardt MA,** Monreal G, Cook AC, Schanbacher BL, Han B, Huang H, Bauer JA. Intracellular remodeling: spatial mapping of desmin in chronic heart failure. AAAS 2007.
34. **Gerhardt MA,** Monreal G, Schanbacher BL, Han B, Huang H, Phillips AB, Bauer JA. Intracellular remodeling: spatial mapping of Desmin in chronic heart failure. Heart and Lung Research Institute – Research Retreat April 17, 2007.
35. **Gerhardt MA,** Monreal G, Cook AC, Schanbacher BL, Han B, Huang H, Bauer JA. Intracellular remodeling: spatial mapping of desmin in chronic heart failure. (*Abstract and Poster*) American Association for the Advancement of Science annual meeting February 15-19, 2007. Presenter, G Monreal. February 18, 2007;
36. **Gerhardt MA,** Monreal G, Schanbacher BL, Han B, Huang H, Phillips AB, Bauer JA. Intracellular remodeling: spatial mapping of Desmin in chronic heart failure. (*Abstract and Poster*) Heart and Lung Research Institute – Research Retreat 2007. April 17, 2007

37. **Godzik N, R. Dzwonczyk, Bergese SD.** Clinical evaluation of the MedRad Veris MR, iMRI patient monitor. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.
38. **Ibinson JW, Vogt KM, Small RH,** Beversdorf DQ, and Schmalbrock P. Correcting for expired carbon dioxide level does not improve FMRI repeatability for motor studies. International Society for Magnetic Resonance in Medicine 15th Scientific Meeting & Exhibition, #3475. Berlin, Germany. May 2007.
39. Little J, **Vogt K,** Reader B, & Schmalbrock P. Functional MRI of olfactory stimuli. The Ohio State University Medical Center Research Day. Columbus, OH. March 2007.
40. Karol HJ, Roberts C, Small RH: Electrical Analog Model of Ocular Pulse Amplitude as a Function of Systemic Pulse Pressure and Ocular Rigidity, ARVO Annual Meeting, Fort Lauderdale, FL May, 2007 #4946
41. Monreal G, Joshi MS, Bauer JA, **Gerhardt MA.** Alterations in the acute stress protein  $\alpha$ B-crystallin in chronic heart failure. Heart and Lung Research Institute – Research Retreat April 17, 2007.
42. Monreal G, **Gerhardt MA.** Progressive accumulation of the acute stress protein  $\alpha$ B-crystallin in an ovine model of chronic heart failure. (*Abstract and Poster Discussion*) International Anesthesia Research Society annual meeting, March 22-27, 2007. Presenter, **MA Gerhardt.** March 24, 2007;
43. Monreal G, Joshi MS, Bauer JA, **Gerhardt MA.** Alterations in the acute stress protein  $\alpha$ B-crystallin in chronic heart failure. Heart and Lung Research Institute – Research Retreat 2007. Oral presentation for Abstract competition. 1<sup>st</sup> place, Research Staff category, April 17, 2007. Presenter, G Monreal. April 17, 2007
44. **Moran K,** Mani M, **Bergese SD.** Anesthetics considerations of the McCune-Albright Syndrome: Anesthetic considerations. Presented at 6th Annual Graduate and Postgraduate Research Day, Columbus, Ohio. March 29, 2007.
45. **Moran K,** Mani M, **Bergese SD.** Acromegaly, endocrine dysfunction and polyostotic fibrous dysplasia associated with McCune-Albright Syndrome: Anesthetic considerations. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.
46. **Morris BN, Hachwa B.** Anesthesia for robot-assisted abdominal hysterectomy with lymph node dissection. Midwest Anesthesia Residents Conference, St. Louis, 2007

47. Phillips AB, Monreal G, Galantowicz M, **Gerhardt MA**, Bauer JA. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. (*Abstract and Poster Discussion*) Columbus Children's Research Institute – Research Retreat April 5-6, 2007.
48. Phillips AB, Monreal G, Galantowicz M, **Gerhardt MA**, Bauer JA. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. Heart and Lung Research Institute – Research Retreat April 17, 2007.
49. Phillips AB, Monreal G, Galantowicz M, **Gerhardt MA**, Bauer JA. Cytoskeletal remodeling in the right ventricle caused by pressure restrictive ventricular septal defect: A potentially important clinical marker. Heart and Lung Research Institute – Research Retreat April 17, 2007.
50. Phillips AB, Monreal G, Cook AC, Bauer JA, Galantowicz M, **Gerhardt MA**. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. (*Abstract and Poster Discussion*) American College of Cardiology annual meeting, March 24-27, 2007. Presenter, AB Phillips. March 2007
51. Phillips AB, Monreal G, Cook AC, Bauer JA, Galantowicz M, **Gerhardt MA**. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. (*Abstract and Poster Discussion*) Columbus Children's Research Institute – Research Retreat 2007. Presenter, AB Phillips. April 2007
52. Phillips AB, Monreal G, Cook AC, Bauer JA, Galantowicz M, **Gerhardt MA**. Desmin content in right and left ventricles in congenital heart disease: An indicator of heart failure. (*Abstract and Poster Discussion*) Heart and Lung Research Institute – Research Retreat 2007. Presenter, AB Phillips. April 17, 2007
53. Phillips AB, Monreal G, Galantowicz M, **Gerhardt MA**, Bauer JA. Cytoskeletal remodeling in the right ventricle caused by pressure restrictive ventricular septal defect: A potentially important clinical marker. (*Abstract and Poster Discussion*) Heart and Lung Research Institute – Research Retreat 2007. Presenter, AB Phillips. April 17, 2007
54. Roberts C, Small RH, Mahmoud AM, Twa MD, Karol HJ, Weber PA, Kanngiesser H. Comparison of PASCAL dynamic contour tonometry using a standard slit-lamp mounted device, a handheld configuration, and a contact lens mounted sensor: Implications for continuous 24 hour IOP monitoring. ARVO Annual Meeting, Fort Lauderdale, FL May 2007 #B209

55. **Sage K, Goldman E, Bergese SD.** Vigilance in detecting a venous air embolism in semi sitting craniotomy, A case report. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.
56. **Sage K, Bergese SD.** Midazolam versus Dexmedetomidine in awake fiber optic intubations. Presented at Midwest Anesthesia Residents Conference, St. Louis, MO. April 13, 2007.
57. **Sage K, Bender P, Bergese SD.** Midazolam versus Dexmedetomidine in awake fiber optic intubations. Presented at 6th Annual Graduate and Postgraduate Research Day, Columbus, Ohio. March 29, 2007.
58. Scipio P, Sun G, Alhaj M, **Christofi F, Awad H, Hassanain H.** The role of C-reactive protein (CRP) in atherosclerosis causal link or simple association? Presented at The Ohio State University Research Day. March 28, 2007.
59. Yan W, **Dimitrova G,** Ross P, **Awad H.** Poster case report: Role of permissive hypercapnia in hyperkalemic cardiac arrest during reperfusion phase of single lung transplant. Presented at IARS. 2007. [Peer Reviewed]
60. **Vogt KM, Ibinson JW, Small RH, and Schmalbrock P.** Combined correction with regression for measured respiratory, cardiac, and capnometry variations in pain FMRI studies improves model fit. International Society for Magnetic Resonance in Medicine 15th Scientific Meeting & Exhibition, #1825. Berlin, Germany. May 2007.
61. **Vogt KM, Ibinson JW,** Schmalbrock P, and **Small RH.** Correction of pain FMRI data for respiratory, cardiac, and capnometry variations changes functional activation maps. Midwest Anesthesia Resident's Conference. St. Louis, MO. April 2007.
62. **Vogt KM, Ibinson JW,** Schmalbrock P, and **Small RH.** The effects of correcting for physiologic fluctuations in pain FMRI experiments. The Ohio State University Medical Center Research Day. Columbus, OH. March 2007.
63. **Witte BF, Small R,** Samuels P. Platelet storage pool deficiency during pregnancy and regional anesthesia. International Anesthesia Research Society annual meeting, March 22-27, 2007.
64. **Zvara DA,** Presenter. Rescue TEE in non-cardiac surgery. Presented at Society of Cardiovascular Anesthesiologists 29th Annual Meeting Workshops, Montreal, Quebec, Canada. April 21, 2007.

## **Grand Rounds/ Forums**

1. **Andritsos, M.** Coagulation and Cardiac Surgery. Presented at Anesthesiology Subspecialty Conference, Cardiac Anesthesia. 2007.
2. **Andritsos, M,** Presenter. Open Forum. Presented at Anesthesiology Subspecialty Conference, Cardiac Anesthesia. 2007.
3. **Andritsos, M,** Presenter. Resident Education. Presented at Anesthesiology Grand Rounds, Residents. 2007.
4. **Andritsos, M,** Presenter. Case Presentation. Presented at Anesthesiology Subspecialty Conference, Cardiac Anesthesia. 2007.
5. **Awad H, Griffin O, Seelandt C.** Brain Oedema in Focal Ischaemia: Molecular Pathophysiology and Theoretical Implications. Presented at Neuroanesthesia lecture. 2007. [Peer Reviewed]
6. **Awad H,** Presenter. Paraplegia and Aortic Surgery. Presented at Anesthesiology Grand Rounds, Residents. 2007. [Editor Reviewed]
7. **Awad H,** Presenter. Cardiac Anesthesia and the Future Direction. Presented at Medical Student lecture, Medical Students. 2007.
8. **Awad H, Nathan N.** Coronary sinus and what Anesthesiologists need to know. Presented at CV meeting. 2007.
9. **Awad H,** Presenter. Pharmacology of vasoconstrictors. Presented at Resident lecture, residents. 2007.
10. **Awad H,** Presenter. Anesthetic Robotic Prostatectomy. Presented at Florida Hospital Celebration Health. 2007.
11. **Bergese, SD,** Presenter. Evoked Potentials, Anesthetic Considerations. Presented at Miami Valley Hospital, Department of Anesthesiology, Physicians, Dayton, Ohio. 2007.
12. **Bergese, SD,** Presenter. Hypertension Management and Neurosurgical Diseases, a Review. Presented at Saint Luke's Hospital, Physicians, Kansas City, MO. 2007.
13. **Bergese, SD,** Presenter. Pharmacologic Management of Evoked Potentials and its Anesthetic Considerations. Presented at Bethesda Hospital, Physicians, Cincinnati, Ohio. 2007.



14. **Bergese, SD**, Presenter. The Management of Hypertensive Emergencies in the Neuro Acute Care Setting. Presented at Department of Anesthesiology, The Cleveland Clinic Health System, Fairview Hospital, Physicians, Cleveland, Ohio. 2007.
15. **Bergese, SD**, Presenter. The Management of Hypertensive Emergencies in the Neuro Acute Care Setting. Presented at Via Christy Medical Center, Department of Anesthesiology, Physician, Wichita, Kansas. 2007.
16. **Bergese, SD**, Presenter. The role of the Anesthesiologist and The Management of Hypertensive Emergencies for Interventional Radiology. Presented at Wesley Medical Center, Department of Radiology, Interventional Radiology, The University of Kansas School of Medicine, Wichita, Kansas. 2007.
17. **Bergese, SD**, Presenter. Evoked Potentials, Anesthetic Considerations. Presented at Via Christy Medical Center, Department of Anesthesiology and Medical Education, Kansas University School of Medicine, Wichita, Kansas. 2007.
18. **Bergese, SD**, Presenter. Electro-Physiologic Principles of Somato-Sensorial and Motor Evoked Potentials and their Anesthetic Considerations. Presented at Department of Anesthesiology, Ruby Memorial Hospital, West Virginia University, Morgantown, WV. 2007.
19. **Bergese, SD**, Presenter. Management of Evoked Potentials in the Pediatric Population and their Anesthetic Considerations. Presented at Department of Anesthesiology, Presbyterian Pittsburgh Children Hospital, UPMC, University of Pittsburgh School of Medicine, Pittsburgh, PA. 2007.
20. **Bergese, SD**, Presenter. Monitoring Consciousness. Presented at Department of Anesthesiology, Community Health Partners Hospital, CPH Regional Medical Center, Lorain, OH. 2007.
21. **Bergese, SD**, Presenter. Role of Consciousness Monitors Devices in Anesthesiology. An Overview of Electro Physiologic Principles and Current Marketed Technology. Presented at The Cleveland Clinic Health System, Department of Anesthesiology, Fairview Hospital, Cleveland, Ohio. 2007. [Peer Reviewed]
22. **Bergese, SD**, Presenter. Management of Hypertensive Emergencies in the Neuro Acute Care Setting. Presented at Departments of Neurological Surgery and Anesthesiology, St. Francis Hospital, Cape Girardeau, Missouri. 2007.

23. **Bergese, SD**, Presenter. The Role of the Anesthesiologist Managing Hypertensive Emergencies and Stroke for Interventional Radiology. Presented at Department of Neurology, St. Anthony Hospital, St. Louis, MO. 2007.
24. **Bergese, SD**, Presenter. Current uses and stage of Evoked Potentials (SSEP's and MEP's), Anesthetic Considerations. Presented at Department of Anesthesiology, Riverside Methodists Hospital, Columbus, OH. 2007.
25. **Bergese, SD**, Presenter. Newer Anesthetic Agents and Considerations for Neurophysiologic Monitoring. Presented at Department of Anesthesiology, Visitor Professor Series, University of Alabama School of Medicine, Birmingham, AL. 2007.
26. **Bergese, SD**, Presenter. Electro-Physiologic Principles of Somato-Sensorial and Motor Evoked Potentials and their Anesthetic Considerations. Presented at OSANA (Ohio State Association of Nurse Anesthetists), Columbus, OH. 2007.
27. **Bergese, SD**, Presenter. Evoked Potentials, Newer Anesthetic Agents and Considerations for Neurophysiologic Monitoring. Presented at Department of Anesthesiology, St. Louis University, St. Louis, MO. 2007.
28. **Bergese, SD**, Presenter. Management of Hypertensive Emergencies in the Neuro Acute Care Setting. Presented at Departments of Neurological Surgery, Anesthesiology and Emergency Department, St. Anthony's Hospital, St. Louis, MO. 2007.
29. **Bergese, SD**, Presenter. The role of the Anesthesiologist and The Management of Hypertensive Emergencies for Neurosurgery. Presented at Department of Neurological Surgery, St Mary's Health Center, St. Louis University, St. Louis, MO. 2007.
30. **Bergese, SD**, Presenter. Neurological Implications and Management of Hypertensive Emergencies. "A neurological Focus". Presented at Departments of Anesthesiology, Neurology and Neurological Surgery, SSM De Paul Health Center, Bridgeton, Missouri. 2007.
31. **Bergese, SD**, Presenter. Evoked Potentials, Anesthetic Considerations. A Close look to MEP's Clinical Correlation. Presented at Department of Anesthesiology, University Hospitals, The Ohio State University, Columbus, OH. 2007.

32. **Bergese, SD**, Presenter. Brain Function Monitoring on Monitoring Consciousness. Presented at TANA (Tennessee Association of Nurse Anesthetist), AANA (American Association of Nurse Anesthetists), 70th Annual Meeting and Convention, Franklin, TN. 2007.
33. **Bergese, SD**, Editor. Visiting Professor New York University, Department of Anesthesiology, Division of Neuroanesthesia. Presented at Visiting Professor, New York, NY. 2007. [Editor Reviewed]
34. **Bergese, SD**, Presenter. Visiting Professor Department of Anesthesiology University of Alabama School of Medicine. Presented at Visiting Professor, Birmingham, Alabama. 2007.
35. **Elsharydah A**, Presenter. Urine Toxicology Screen and Compliance Monitoring of Chronic Pain Patients. Presented at Pain Medicine Lecture Series, OSU Spine Center. 2007.
36. **Elsharydah A**, Presenter. Additives to Local Anesthetics in Peripheral Nerve Blocks. Presented at Department of Anesthesiology Grand Rounds. 2007.
37. **Elsharydah A**, Presenter. Management the Difficult Pain Patient. Presented at Pain Medicine Lecture Series, OSU Spine Center. 2007.
38. **Elsharydah A**, Presenter. Seminar & Discussion about DEA and Opioids. Presented at Pain Medicine Lecture Series, OSU Spine Center. May 29, 2007.
39. **Elsharydah A**, Presenter. Delayed Subarachnoid Migration of Epidural Catheter. Presented at Morbidity & Mortality Pain Medicine Lecture, OSU Spine Center. 2007.
40. **Elsharydah A**, Presenter. Anesthesia Adjuncts. Jeopardy form. Presented at CA-1 Lecture. 2007.
41. **Elsharydah A**, Presenter. Pharmacology of Local Anesthetics. Presented at Pain Medicine Lecture Series. 2007.
42. **Elsharydah A**, Presenter. ACLS/Code. Presented at Clinical Skills Immersion Experience for 3rd year Medical Students, Med Students. 2007.
43. **Gerhardt MA**, Presenter. Cardiac Tamponade. Presented at CA-2 and 3 Lecture, Residents. 2007.
44. **Gupta B**, Presenter. Neuro Board Review. Presented at CA III Lecture. January 10, 2007.

45. **Gupta B**, Presenter. Aneurysm Clipping. Presented at Morning Report, Oral Exam. February 15, 2007.
46. **Gupta B**, Presenter. Musculoskeletal Diseases. Presented at CA II Lecture. March 27, 2007.
47. **Gupta B**, Presenter. Rheumatoid Arthritis. Presented at Morning Report. March 29, 2007.
48. **Gupta B**, Presenter. NeuroAnesthesia and Airway Management Lecture. Presented at Prof. Seminar Exam Prep Course, Washington, D.C. April 9, 2007.
49. **Gupta B**, Presenter. Pituitary Tumors and Sitting Position. Presented at CA II Lecture. April 17, 2007.
50. **Gupta B**, Presenter. TURP & TURP Syndrome. Presented at Mock Orals. April 10, 2007.
51. **Gupta B**, Presenter. Muscular Dystrophy. Presented at Mock Orals. May 10, 2007.
52. **Khabiri B**, Presenter. Continuous Perineural Catheters. Presented at Ohio Society of Anesthesiologist. 2007.
53. Martin P, Gonzalez D, Lopez L, Watson D, **Bergese SD**, Presenter. How to improve the Anesthesia Service on Gaswork .com. ASA Business Administration Program Meeting. Presented at ASA Business Administration Program Meeting, The Woodlands (Houston) Texas. January 12, 2007.
54. **Zvara DA**, Presenter. Perioperative Echo. Presented at Society of Cardiovascular Anesthesiologists & American Society of Echocardiography, San Diego, CA. February 6, 2007.
55. **Zvara DA**, Panelist. Test Yourself. Presented at 10th Annual Comprehensive Review and Update of Perioperative Echo, Society of Cardiovascular Anesthesiologists & American Society of Echocardiography, San Diego, CA. February 9, 2007.
56. **Zvara DA**, Presenter. The Top Ten Perioperative Interventions That Impact Postoperative Outcome; TEE for the Non-cardiac Anesthesiologist. Presented at University of Alabama Birmingham, Birmingham, AL. February 26, 2007.

57. **Zvara DA**, Presenter. The Top Ten Perioperative Interventions That Impact Postoperative Outcome; TEE for the Non-cardiac Anesthesiologist. Presented at Michigan Society of Anesthesia, Troy, MI. March 10, 2007.

### **Multimedia, Databases, and Websites**

1. Leahy M, **Bergese SD**, N/A. 2007. MRI-compatible systems enable safe use of Infused Drugs in the Intraoperative Suite. *Advances in Infusion Technology*. Acuity Care Technology Magazine.
2. Leahy M, **Bergese SD**, N/A. 2007. Infusion Technology: "Magnetic Appeal". The Reilly Communication Group.
3. **Howie MB, Del Rio C, Khan F, Lopez LA, Bergese SD**, N/A. 2007. Service-Oriented Architecture Drives Improved Operational Efficiency and Quality of Data. *Microsoft.com/Business and Industry*.
4. Chiocca EA, **Bergese SD**, N/A. 2007. Waking up for Brain Surgery. *The Columbus Dispatch*.
5. Chiocca EA, **Bergese SD**, N/A. 2007. Chatting Under the Knife. *The Youngstown Vindicator, Associated Press*. May 20, 2007.
6. Chiocca EA, **Bergese SD**, N/A. 2007. Talking her way Through Surgery. *The Canton Repository*.
7. Chiocca EA, **Bergese SD**, N/A. 2007. Patients Response during Surgery Helps Doctors. *Zanesville Times Recorder*.