

The following is a brief overview of Force Impact Technologies 's medical partners, researchers, and validations strategies.

### 1. Dr. Cohen – Necksafe

- a. Dr. Cohen created Australia's NeckSafe which is a Not For Profit Charity started over 20 years ago, and the NeckSafe and HeadSafe monitors are the labels under which educational courses, promote awareness and advocacy and seek to research these important areas are provided. In the last year, this organization has conducted the Randwick Project and received press, radio and television focus on this study, in addition to the educational aspects of our work [www.necksafe.com.au/training](http://www.necksafe.com.au/training) and [www.headsafe.com.au/training](http://www.headsafe.com.au/training), with both face-face and online courses.
- b. Attached you will find a letter of intent from Dr. Cohen

### 2. Dr. Koshida – Ryotokuji University

- a. **Background** In Japan, head injuries such as acute subdural hematoma sustained during judo participation among young and inexperienced judo practitioners are gaining widespread public attention because of the frequency and severity of these types of injuries. Not only such severe injuries, a great number of mild traumatic brain injuries can occur during judo practice/competition. The previous research demonstrated approximately one-third of judo practitioners had experienced at least single episode of MTBI through their athletic career. However, there research was conducted retrospectively with a questionnaire.
- b. **Purpose** Using a wearable device that allows quantitative measurement of applied impact to the head, we aim to investigate the frequency ( and severity) of the head impact during judo practice in a whole season.
- c. Attached you will find a letter of intent from Dr. Koshida

### 3. Rika Carlsen, Ph.D. Assistant Professor of Mechanical/Biomedical Engineering Robert Morris University | School of Engineering, Mathematics and Science

- a. Dr. Carlson will be assisting in the clinical validation and testing of the sensor that can be used in for peer-reviewed medical journals. In order for this to happen the FIT team needs to work with an OEM to develop a sensor capable of measuring 10,000 samples per second. Dr. Carlsen is the medical advisor for this portion of the project.
- b. Attached you will find a letter of intent from Dr. Carlsen

#### 4. Dr. Lexy E. Richards, Arizona State University

- a. Research Study: Validating Force-Sensing Mouthguards Against Expert Concussion Analysis to Guide Removal from Play in Collegiate Athletics
- b. ASU student athlete volunteers will be recruited from club sports and/or competitive programs to be determined in consultation with ASU athletics. These sports all incorporate full contact practices and athletes are known to have moderate-to-high risk of sustaining mTBI. Volunteer study subjects will receive a customizable instrumented mouthguard (FITGuard) to be fitted to the athlete's individual mouth. Each instrumented mouthguard records linear and angular head momentum and transmits a colored LED display indicating risk of possible mTBI. After fitting, investigators will modify the mouthguard to obscure the LED indicator for mTBI risk in order to blind athletes and athletic trainers to mouthguard signals during the study.
- c. Attached you will find a letter of intent from Dr. Richards

#### 5. Walt Schneider | Professor Bioengineering, Neurosurgery, Radiology & Psychology University of Pittsburgh & University of Pittsburgh Medical Center

- a. Dr. Schneider's mission includes providing advice to and work with sensor vendors to improve the science and clinical utility of TBI dosimetry. Dr. Schneider looks forward to working with FIT to advance the technology to be effective and deploy at scale. This will involve creating science and engineering that does not yet exist. Dr. Schneider and FIT hope we can work together on this mission. FIT expects good sensor/post processing system soon and a great one in a few years.
- b. Attached you will find a letter of intent from Dr. Schneider

#### 6. Don Muzzi, DMD, MD | Association of Ringside Physicians

- a. **A former dentist, turned Neuroanesthesiologist, Dr. Muzzi now sits on the board of Association of Ringside Physicians.** His organization is involved in every professional boxing, kickbox, and mixed martial arts fight. We are working with Dr. Muzzi to better understand how we can support his organization. The long term goal is to have Dr. Muzzi fill the role as FIT's Medical Advisor due to his duality of a Dentist and neurology background.
- b. Attached you will find a letter of intent from Dr. Muzzi

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THE UNIVERSITY OF  
SYDNEY



HEADSAFE



SAVE SIGHT  
INSTITUTE

1 September 2016

Mr A Gonzales and Mr B Merriman  
FITGuard  
By email

## LETTER OF INTENT RE FITGUARD and HEADSAFE

Gentleman

Thank you for your time in introducing the FITGuard system and heritage to me.

NeckSafe is the Not For Profit Charity I started over 20 years ago, and the NeckSafe and HeadSafe monikers are the labels under which we provide educational courses, promote awareness and advocacy and seek to research these important areas. In the last year, we have conducted the Randwick Project and received widespread press, radio and television focus on this study, in addition to the educational aspects of our work at [necksafe.com.au/training](http://necksafe.com.au/training) and [headsafes.com.au/training](http://headsafes.com.au/training), with both face-face and online courses.

Currently I'm heading a multiphasic research study here in Australia using a number of cognitive tests (we intend to add BrainCheck to that list) as well as balance plate testing, Transcranial Magnetic Stimulation and oculomotor testing (King Devick) based at the Save Sight Institute of the University of Sydney.

We are most impressed with what FITGuard has to offer in terms of impact monitoring and concussion mitigation, and would like to add it to our research armamentarium. We currently are entering the third year of our study with some 30 rugby players and have the opportunity to conduct annual baseline pre-seasons studies with them shortly. It would be a tremendous opportunity to equip these players with FITGuard technology and be able to monitor them throughout the season as well as compare our injury rates to the previous two years where players were free to choose their own style and composition of mouthguard.

We believe that by measuring head impacts with the FITGuards on our players we can help to validate their usage in non-helmeted sports and ultimately lead to the introduction of the product here to this market under the Headsafe banner. We can also assist in the customisation of the software and algorithms for the rugby union, rugby league, and Australian Rules Football markets as well as soccer.

As a NFP we are look at for "best of breed" solutions and I am currently lecturing across the country. Of note too, our research has been accepted for the 5<sup>th</sup> International Concussion Consensus Conference in Berlin this October where we will be exposed to the very latest in "concussionology" and able to contribute our own experiences.

The potential for collaboration with your company offers a win-win-win outcome, and we very much look forward to working with you.

Kind regards

Dr. Adrian Cohen  
Director

# RE: Question

越田専太郎 <koshida@ryotokuji-u.ac.jp>

Wed 5/18/2016 20:12

To: Anthony Gonzales <Anthony@fitguard.me>;

Dear Anthony:

Thank you for your prompt reply.

Here is VERY BRIEF summary of our pilot research plan.

## Background

In Japan, head injuries such as acute subdural hematoma sustained during judo participation among young and inexperienced judo practitioners are gaining widespread public attention because of the frequency and severity of these types of injuries.

Not only such severe injuries, great number of mild traumatic brain injuries may be occurring during judo practice/competition.

The previous research demonstrated approximately one-third of judo practitioners had experienced at least single episode of MTBI through their athletic career. However, there research was conducted retrospectively with a questionnaire.

## Purpose

Using a wearable device that allows quantitative measurement of applied impact to the head, we aim to investigate the frequency ( and severity) of the head impact during judo practice in a whole season.

I am discussing with judo coaches of some club team in our community for cooperation and getting positive response so far.

I may ask a couple of young adult judo athletes at novice level to wear the device during grappling and collect the head impact data.

## Significance

The Ministry of Education, Culture, Sports, Science, and Technology of Japan mandated instruction in Japanese martial arts, including judo, for junior high school students in 2012. Therefore, considering the recent and sustainable growth in the popularity of judo participation among young and inexperienced individuals, I believe that it is essential to provide knowledge of judo-related injuries that frequently occur in judo practitioners or judokas to athletic directors, coaches, teachers and healthcare providers.

If you can help me out to pursue my research goal, I will appreciate it.

(Forgive me if the text above confuse you. English is not my first language. )

Sentaro "Sen" Koshida  
Ryotokuji University

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**From:** Anthony Gonzales [mailto:Anthony@fitguard.me]  
**Sent:** Thursday, May 19, 2016 10:49 AM  
**To:** 越田専太郎  
**Subject:** Re: Question

Hello Dr. Koshida,

We have a few research partners here in the US and Canada, but don't currently have any research partners in Nippon. Therefore, we would be very interested to learn about what you are researching.

We currently do NOT ship our product, as we are still validating and testing our methodology. Can you provide a summary of your pilot research program? We would be more than willing to send research-devices for academic purposes.

We are very interested in supporting independent research, and we look forward to learning more about your project

さようなら

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**ANTHONY M. GONZALES** | Executive Director  
818-620-1913 | [www.FITGuard.me](http://www.FITGuard.me)  
Force Impact Technologies Inc.

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**From:** 越田専太郎 <[koshida@ryotokuji-u.ac.jp](mailto:koshida@ryotokuji-u.ac.jp)>  
**Sent:** Wednesday, May 18, 2016 18:38  
**To:** Anthony Gonzales  
**Subject:** Question

Dear Anthony:

My name is Sentaro Koshida, an associate professor at Ryotokuji University, Japan.  
I am interested in using your product for research purpose, so I am wondering if you can ship your product internationally.

I am planning to purchase a couple of your device and start doing some pilot research for this year.  
Thank you for your help.

9/2/2016

RE: Question - Anthony Gonzales

Sentaro Koshida Ph.D, ATC, CSCS  
Ryotokuji University

# Re: Request Return Call Walter Schneider VA Brain Trust

rwright21@gmail.com on behalf of Rika Wright Carlsen <carlsen@rmu.edu>

Fri 6/24/2016 05:30

To: Anthony Gonzales <Anthony@fitguard.me>;

Cc: Schneider, Walter <wws@pitt.edu>; Bob Merriman <Bob@fitguard.me>; John Kasha <john@kaiengineering.com>; Jama Mohamed <jama.a.mohamed@gmail.com>;

Hi Anthony,

Thank you for giving me the opportunity to join the conference call with STMicro the other day. It sounds like there is some potential to increase the sampling rate of these modules, which is great! I discussed the sampling rate issue with another researcher who works with wearable sensor systems, and he also agreed that the current sampling rate of these sensor systems is a major limitation, especially with obtaining accurate angular acceleration measurements. Although the 10 kHz sampling rate is an ideal goal, any significant improvement in the sampling rate of these devices would be helpful in achieving accurate angular acceleration values.

Thanks!

Rika

Rika Wright Carlsen, Ph.D.

Assistant Professor of Mechanical/Biomedical Engineering

Robert Morris University | School of Engineering, Mathematics and Science

6001 University Blvd, Moon Township, PA 15108

John Jay 222 | 412-397-3531 (office) | 412-397-2593 (fax)

On Tue, Jun 21, 2016 at 12:43 PM, Anthony Gonzales <[Anthony@fitguard.me](mailto:Anthony@fitguard.me)> wrote:

Hello Dr. Walter,

We are having a meeting with the director of MEMS manufacturing for STMicro, tomorrow, Wednesday 22nd 8am PST. You and Rika and are more than welcome to join if you would like. I will forward the calendar invite shortly.

We will be discussing requirements and technical constraints for a new module. We will be using the following information provided by Rika:

- **Adjustable trigger threshold:** to have the option to use the angular velocity output from the gyroscopes as a trigger





# Validating Force-Sensing Mouthguards Against Expert Concussion Analysis to Guide Removal from Play in Collegiate Athletics

**Methods:** Prior to implementing any study protocol, we will collaborate with ASU Athletic Trainers and work with the ASU Athletics Research and Technology Committee to design a study protocol that accommodates all NCAA guidelines and does not interrupt play for any athlete. All observational study protocols will be evaluated by the ASU Institutional Review Board.

ASU student athlete volunteers will be recruited from club sports and/or competitive programs to be determined in consultation with ASU athletics. These sports all incorporate full contact practices and athletes are known to have moderate-to-high risk of sustaining mTBI. Volunteer study subjects will receive a customizable instrumented mouthguard (FITGuard) to be fitted to the athlete's individual mouth. Each instrumented mouthguard records linear and angular head momentum and transmits a colored LED display indicating risk of possible mTBI. After fitting, investigators will modify the mouthguard to obscure the LED indicator for mTBI risk in order to blind athletes and athletic trainers to mouthguard signals during the study.

Athlete volunteers will wear the instrumented mouthguard for regular training sessions that will be observed by investigators. Athletic trainers will assess athletes during training sessions for mTBI as indicated, per their customary and usual practice. Investigators will observe instances of Athletic Trainer assessment, and athlete disposition (return to training or remove from training). At the end of observed training sessions, investigators will use proprietary software to download measurements from the instrumented mouthguard. These measurements will be correlated to Athletic Trainer assessments and athlete disposition. Investigators will collaborate with Athletic Trainers and coaches to determine an observational schedule throughout the practice season. Instrumented mouthguards and study observations will not be used during contested sporting events.

**Trial Length: 1 year total – practice season for athletes.**

**ASU Principal Investigators:** Heather M. Ross, DNP

**ASU Co-Investigators:** Joshua Beaumont, MS, ATC, LAT, Athletic Trainer  
Lexy E. Richards, RN, Graduate Research Fellow

**Clinical Leadership:** Joshua Beaumont, MS, ATC, LAT, Athletic Trainer

**Clinical Partners:** ASU Athletics; programs TBD

**Device(s):** FITGuard head-injury awareness mouthguard

**Patient Population:** Collegiate athletes: sports and competitive level TBD



Research: Letter of Intent  
Force Impact Technologies Inc.  
May 2016

The Arizona State University, Center for Sustainable Health is performing research in the area of concussion or mild traumatic brain injury (mTBI) analysis. Concussion is an underreported problem in student athletes today and the current gold standard for diagnosis is made on the basis of cognitive, balance, and neuro examination at the point of injury by professional athletic trainers.

In laboratory settings, kinetic measures of linear and angular momentum have been shown to correlate with mTBI injuries. We would like to purchase and utilize 25 FITGuards to capture these measures of force during our research. We will be utilizing the FITGuards in a variety of athletic training environments, all of which incorporate full contact practices and athletes known to have moderate-to-high risk of sustaining mTBI.

We look forward to collaborating with Force Impact Technologies on this project

Sincerely,

A handwritten signature in blue ink, appearing to read "Lexy Richards", written over a horizontal line.

Lexy Richards, RN, BSN  
ASU Graduate Research Fellow  
Doctor of Nursing Practice Candidate

# RE: Request Return Call Walter Schneider VA Brain Trust

Schneider, Walter <wws@pitt.edu>

Fri 6/3/2016 06:01

Inbox

To: Anthony Gonzales <Anthony@fitguard.me>;

Cc: Bob Merriman <Bob@fitguard.me>; John Kasha <john@kaiengineering.com>; Rika Wright Carlsen <carlsen@rmu.edu>; Jama Mohamed <jama.a.mohamed@gmail.com>;

Anthony:

Thank you for your details. Our mission includes providing advice to and work with sensor vendors to improve the science and clinical utility of TBI dosimetry. We look forward to working with you to advance the technology to be effective and deploy at scale. This will involve creating science and engineering that does not yet exist. I have funding for that science effort. We hope we can work together on this mission. I like the plan you are laying out. We want a good sensor/post processing system soon and a great one in a few years.

In your email you identified the [military research grant](#). I have had several BAA1s funded projects from the Army and Navy. I note these work much better if there is someone within the DoD pushing for it and that you have operations on bases seeking to use the product in research studies. It has taken me years to develop such connections.

**For our Texas Dosimetry project, can you deliver 200 units (that we would pay for) by September 1 2016 that you think will be solid and provide us the raw data feed Rika needs?**

We need the acquisition and data transfer in September. Our need from your product is the raw data stream (sensor>mobile phone>Pittsburgh server). Our plan is to be running on a cloud based sophisticated program model for each player taking input from the sensors and cumulative hits for each player (once we advance the science to know how to add them and factor in healing) using the methods that Rika is developing with linkage to severe trauma MRI data that I am developing. I like that your system will create a sideline alert advisory and recognize that the mobile software takes time. We will not have real time computing with our models till late in the season. This is a research project that will collect data to build the biological evidence for setting alert levels.

We will be doing MRI scans post the serious concussion cases to relate sensor readings to likelihood of tissue damage. We will be building a sophisticated cumulative brain model. After an MRI scan we will use that players brain data to enhance the model. Our project seeks to go beyond G-force thresholds to directional anisotropic computational modeling over the career of the player. At the beginning of the game we might download to the sideline mobile app specific alert thresholds taking into account the cumulative damage of that player.

I suggest we schedule a web meeting to discuss possible collaborations. I would like to know more about the company and your plans and could share ours.

Walt Schneider

Professor Bioengineering, Neurosurgery, Radiology & Psychology

University of Pittsburgh & University of Pittsburgh Medical Center

Contact cell 412-901-4176 Lab web page <http://schneiderlab.lrdc.pitt.edu/> <http://HDFT.info>

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**From:** Anthony Gonzales [mailto:Anthony@fitguard.me]

**Sent:** Wednesday, June 1, 2016 3:43 PM

**To:** Schneider, Walter <wws@pitt.edu>

**Cc:** Bob Merriman <Bob@fitguard.me>; John Kasha <john@kaiengineering.com>; Rika Wright Carlsen <carlsen@rmu.edu>; Jama Mohamed <jama.a.mohamed@gmail.com>

**Subject:** Re: Request Return Call Walter Schneider VA Brain Trust

Hello Dr. Schneider,

Three congruent things are happening, and I think we should loop them all together.

1. At the beginning of the year we approached [STM](#) (the OEM of the MEMS), and investigated the possibility of making a custom module with a higher sampling rate. The conclusion of that conversation was that it was technically no problem, but would cost over **\$1mm** in NRE cost.
2. We had engaged with you and learned about your goals and objectives.
3. We have been working on a [military research grant](#) to receive funding to investigate better ways of measuring TBI.

It seems to me that the most logical solution would be to pair these three previously-independent tasks, into a larger project. I think the most beneficial thing to do is to define the standards and expectations of technical abilities. We would then explain these expectations with STM and request a proposal. Finally, we would submit an application for grant funding on this premise. All while congruently working on our current iteration of the device to support testing in the near future. This would allow us to understand the current model, with improvements in the pipeline.

Jama/John,

Do you know if we can support the requested features outlined by Rika?

- *Adjustable trigger threshold: A trigger threshold of 10 g is commonly used; however, it would be nice to be able to adjust this threshold value and to have the option to use the angular velocity output from the gyroscopes as a trigger*
- *Adjustable recording duration: At least 100 ms*

We look forward to working with you and happy to support such a great cause.

Cheers,

**CURRICULUM VITAE**  
**DONALD A. MUZZI, DMD, MD**

**ADDRESS:**

3758 Torrey Pines Blvd  
Sarasota, Florida 34238  
e-mail: [donmuzzi@aol.com](mailto:donmuzzi@aol.com)  
Phone: 218-340-0453

**POSITIONS**

4/1993 to present	Staff Anesthesiologist at Essentia Health
4/1993 to present	Consultant Anesthesiology and Neuroanesthesia at Essential Health
10/2014 to present	Board Member Association of Ringside Physicians
1/15/16 to present	Executive Committee Association of Ringside Physicians
1/15/16 to present	Conference Program Director Association of Ringside Physicians
2/2011 to present	Medical Task Force Minnesota Office of Combative Sports
2/2012 to present	Chief Ringside Physician Black Bear Casino, Carlton MN
1/2014 to present	Chief Ringside Physician Gran Casino, Hinckley, Minnesota
6/10/15 to present	Panel Physician New York State Athletic Commission
10/1/15 to present	Member Association of Boxing Commissions Medical Committee

**PAST POSITIONS:**

8/2008 – 7/2011	Associate Chief of Surgery, Essentia Health East Region, Duluth, MN
7/2005-7/2008	Chief of Staff, St. Mary's Medical Center, Duluth, MN
7/1997-10/2008	Chief, Department of Anesthesia, St. Mary's Medical Center, Duluth, MN
7/2003-7/2005	Chief of Staff-Elect St. Mary's Medical Center, Duluth, MN
8/2008-7/2011	Duluth Clinic Board of Directors
7/1997-7/2011	Surgical Executive Committee
4/1999-10/2001	Medical Director, Miller Dwan Medical Center Pain Management Clinic, Duluth, MN
5/1998-9/2001	President, Anesthesia Associates Duluth Ltd., Duluth, MN
7/1989 -4/1993	Chief, Division of Neuroanesthesia, Mayo Clinic, Rochester MN
7/1988-4/1993	Consultant Anesthesiology Mayo Clinic, Rochester, MN
6/1986-6/1987	Chief Resident, Anesthesiology, Mercy Hospital of Pittsburgh
1/1988-7/1988	Chief Resident, Anesthesiology, Mayo Clinic, Rochester MN

**CERTIFICATION:**

7/1980	National Board of Dental Examiners
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**DONALD MUZZI, DMD, MD**

**PAGE 2:**

7/1980	Northeast Regional Board of Dental Examiners
7/1985	National Board of Medical Examiners
10/1988	American Board of Anesthesiology
5/2009	Physician Leadership College Saint Thomas University
5/2014	Association of Ringside Physicians/American College of Sports Medicine (Certified Ringside Physician )

**MEDICAL LICENSURE ACTIVE:**

Florida: ME60909	Pennsylvania: MD034057E	NewYork: 273717-1
Minnesota: 31566	Wisconsin: 42651-20	North Dakota: 13526

**MEDICAL LICENSURE INACTIVE:**

Arizona 2052

**Dental Licensure:(Inactive)**

7/1980	Pennsylvania DS021745L
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**TEACHING EXPERIENCE:**

9/1994 - present	Adjunct Faculty, University of Minnesota-Duluth, School of Medicine, Duluth, MN
7/1991-3/1993	Assistant Professor of Anesthesiology, Mayo Medical School, Rochester, MN
7/1988-7/1991	Instructor in Anesthesiology, Mayo Medical School, Rochester, MN

**EDUCATION:**

9/2008-5/2009	Physician Leadership College, University of St. Thomas Minneapolis, MN
7/1987-7/1988	Fellow in Neuroanesthesiology Mayo Clinic, Rochester, MN
7/1984-6/1987	Anesthesiology Resident, Mercy Hospital of Pittsburgh
9/1980-5/1984	M.D., School of Medicine, University of Pittsburgh
9/1976-5/1980	D.M.D. School of Dental Medicine, University of Pittsburgh
9/1973-5/1977	B.S. College of Arts and Sciences, University of Pittsburgh (Degree granted on a combined basis with the School of Dental Medicine)

**HONORS/AWARDS:**

Summa cum Laude, University of Pittsburgh, College of Arts and Sciences  
Phi Eta Sigma Honors Society, University of Pittsburgh, College of Arts and  
Sciences

## **DONALD MUZZI, DMD, MD**

### **PAGE 3:**

Mosby Scholarship Award for Clinical Achievement, University of Pittsburgh, School of Dental Medicine  
Quintessence Scholarship Award for Academic and Clinical Achievement, University of Pittsburgh, School of Dental Medicine  
University of Pittsburgh, School of Medicine Departmental Honors: Anatomy and Histology Anesthesiology Internal Medicine  
Microbiology Psychiatry Surgery  
Service to the Association of Ringside Physicians Award (Presented September 26, 2015)

### **PROFESSIONAL MEMBERSHIPS AND SOCIETIES:**

American Society of Anesthesiologists  
Minnesota Society of Anesthesiologists  
American Board of Anesthesiologists  
International Anesthesia Research Society  
Association of Ringside Physicians  
USA Boxing (Physician Member)

### **COMMITTEES/ADMINISTRATIVE RESPONSIBILITIES:**

Board Member Association of Ringside Physicians  
Member Executive Committee Association of Ringside Physicians  
Member of Medical Subcommittee Association of Boxing Commissions  
Medical Task Force Minnesota Office of Combative Sports  
Chief Ringside Physician Black Bear Casino, Carlton Minnesota  
Chief Ringside Physician Gran Casino Hinckley  
Education Committee Association of Ringside Physicians  
Certification Committee Association of Ringside Physicians  
Past Member Duluth Clinic Board of Directors  
Past Member Surgical Executive Committee  
Ringside Physician Panel Member, NY,MN,WI, & FL

### **FUNDED RESEARCH/GRANTS RECEIVED:**

1. Anaquest grant: The effects of desflurane and isoflurane on intracranial pressure during Neuroanesthesia in patients with intracranial tumors. \$53,440
2. ICI Pharmaceuticals: The effect of propofol on intracranial pressure in patients with Supratentorial mass lesions. \$25,126.

### **PUBLICATIONS - JOURNAL ARTICLES:**

1. Muzzi DA, Cucchiara RF: Brain monitoring with the electroencephalogram. Seminars in Anesthesia 8(2):93-101, 1989
2. Muzzi DA, Black S: The lack of effect of succinylcholine on serum potassium in patients with Parkinson's disease. Anesthesiology 71:322, 1989

**PUBLICATIONS - JOURNAL ARTICLES (continued):**

3. Muzzi DA, Black S, Cucchiara RF: Labetalol and esmolol in the control of hypertension following intracranial surgery. *Anesth Analg* 70:68-71, 1990
4. Losasso TJ, Martino JD, Muzzi DA: Venous air embolism in the recovery room producing unexplained cardiac dysrhythmias: A case report. *Anesthesiology* 72:203-205, 1990
5. Muzzi DA, Losasso TJ, Black S, Nishimura RA: Comparison of a transesophageal and precordial ultrasonic Doppler sensor in the detection of venous air embolism. *Anesth Analg* 70:103-104, 1990
6. Black S, Muzzi DA, Nishimura RA, Cucchiara RF: Preoperative and intraoperative echocardiography to detect right – to-left shunt in patients undergoing neurosurgical procedures in the sitting position. *Anesthesiology* 72:436-438, 1990
7. Krohn, J Muzzi DA, Losasso TJ: Repair of a cerebral artery aneurysm in a patient with Persistent truncus arteriosus. *Journal Neurosurgical Anesthesiology* 2:131-135, 199
8. Losasso TJ, Dietz NM, Muzzi DA: Acromegaly and radial artery cannulation. *Anesth Analg* 71:204, 1990
9. Losasso TJ, Muzzi DA, Cucchiara RF: Doppler detection of intravenous mannitol crystals mimics venous air embolism. *Anesth Analg* 71:568-569, 1990
10. Muzzi DA, Losasso TJ, Cucchiara RF: Complication from a nasopharyngeal airway in a patient with a basilar skull fracture. *Anesthesiology* 74:366-368, 1991
11. Losasso TJ, Muzzi DA, Cucchiara RF: Response of fetal heart rate to maternal administration of esmolol. *Anesthesiology* 74:782-784, 1991
12. Cucchiara RF, Muzzi DA: Guide-wire retention after right atrial catheter insertion. *Anesth Analg* 74:303-304, 1992
13. Losasso TJ, Muzzi DA, Cucchiara RF: Jugular venous compression helps to identify the source of venous air embolism during craniectomy in patients in the sitting position. *Anesthesiology* 76:156-157, 1992
14. Meyer FB, Muzzi DA: Cerebral protection during aneurysm surgery with isoflurane anesthesia *J Neurosurg* 76:541-543, 1992
15. Muzzi DA, Losasso TJ, Dietz NM, Faust RJ, Cucchiara RF, Milde LN: The effect of desflurane and isoflurane on cerebrospinal fluid pressure in humans with supratentorial mass lesions. *Anesthesiology* 76:720-724, 1992
16. McGrail KM, Muzzi DA, Losasso TJ, Meyer FB: Ventriculoatrial shunt distal catheter placement using transesophageal echocardiography. *Neurosurgery* 30:747-749, 1992
17. Losasso TJ, Muzzi DA, Dietz NM, Cucchiara RF: Fifty percent nitrous oxide does not increase the risk of venous air embolism in neurosurgical patients operated upon in the sitting position. *Anesthesiology* 77:21-30, 1992
18. Losasso TJ, Black S, Muzzi DA, Michenfelder JD, Cucchiara RF: Detection and emodynamic consequences of venous air embolism: Does nitrous oxide make a difference? *Anesthesiology* 77:148-152, 1992



**PUBLICATIONS - JOURNAL ARTICLES (continued):**

19. Losasso TJ, Muzzi DA, Meyer FB, Sharbrough FW: Electroencephalographic monitoring of cerebral function during asystole and successful cardiopulmonary resuscitation. *Anesth Analg* 75:1021-1024, 1992
20. Turner CR, Losasso TJ, Muzzi DA, Weglinski MR: Brain relaxation and cerebrospinal fluid pressure during craniotomy for resection of supratentorial mass lesions. *Journal of Neurosurgical Anesthesiology* 8:2:126-132, 1996
21. Muzzi DA, Cucchiara RF, Oliver SB: Labetalol and esmolol in the control of hypertension following intracranial surgery. *Anesthesiology* 69:A548, 1988
22. Losasso TJ, Muzzi DA, Black S, Cucchiara RF: The "risk" of nitrous oxide in sitting neurosurgical patients: A prospective, randomized study. *Anesthesiology* 71:A1136, 1989
23. Losasso TJ, Black S, Muzzi DA, Cucchiara RF: Detection and hemodynamic consequences of venous air embolism: Does N<sub>2</sub>O make a difference? *Anesthesiology* 71:A620, 1989
24. Muzzi DA, Jones KA, Losasso TJ, Black S: Use of the sitting position in neurosurgical patients with mitral valve prolapse. *Anesthesiology* 71:A135, 1989
25. Santrach PJ, Williamson KR, Taswell HF, Cucchiara RF, Muzzi DA, Piepgrad DG: Intraoperative blood salvage in neurosurgery. American Association of Blood Banks, New Orleans, October 1989
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