

Michelle (nee Hazel) Scerbo

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CITIZENSHIP United States

UNDERGRADUATE EDUCATION

2002-2006 Bachelor of Science, Neurobiology with Special Honors Austin, TX
The University of Texas at Austin

GRADUATE EDUCATION

2014-2016 Master of Science, Health Informatics Houston, TX
UTHealth School of Biomedical Informatics

2008-2012 Doctor of Medicine Houston, TX
UTHealth McGovern Medical School

POSTGRADUATE TRAINING

2019-2020 Fellow, Minimally Invasive and Bariatric Surgery Houston, TX
UTHealth McGovern Medical School, Memorial Hermann
Hospital

2013-2019 Categorical Resident, General Surgery Houston, TX
UTHealth McGovern Medical School

2012-2013 Categorical Intern, General Surgery Houston, TX
UTHealth McGovern Medical School

LICENSURE Texas Medical Board (Q1736)

CERTIFICATIONS

2020 Fundamentals of Electrosurgery
2018 Fundamentals of Endoscopic Surgery
2017 Fundamentals of Laparoscopic Surgery
2017 Advanced Surgical Skills for Exposure in Trauma

2016 Advanced Cardiac Life Support
 2015 Advanced Trauma Life Support

HONORS AND AWARDS

2017 Raleigh Ross Scholar, Texas Surgical Society
 2016 Resident Clinical Research Award, UTHealth Department of Surgery
 2016 Surgical Infection Society Foundation Clinical Research Training Fellowship
 2015 Recipient of the American College of Surgeons, Committee on Trauma South Texas Chapter Resident Trauma Competition for Clinical/Investigative Research
 2014 Recipient of the American College of Surgeons, Committee on Trauma South Texas Chapter Resident Trauma Competition for Clinical/Investigative Research
 2014 T32 Research Fellowship, Center for Translational Injury Research, UTHealth
 2010 Alpha Omega Alpha Carolyn L. Kuckein Student Research Fellowship
 2009 C. Frank Webber Prize for Student Research, First Place, UTHealth
 2006 Special Honors in Biological Sciences, UT Austin
 2005 University Honors, UT Austin
 2005 Outstanding Research in the Field of Addiction Research, The University of Texas Medical Branch
 2004 College Scholar, UT Austin
 2003 College Scholar, UT Austin
 2002 College Scholar, UT Austin

WORK EXPERIENCE

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| 2014-2016 | <p>T32 Research Fellow Research focus: application of molecular methods to detect organisms in sepsis, utilizing computer applications to improve identification of sepsis and venous thromboembolism Faculty Mentor: John Holcomb, MD</p> | <p>UTHealth, Center for Translational Injury Research, Houston, TX</p> |
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| 2009 | Medical Student Summer Researcher Research focus: application of computer modeling to practices Translational Faculty Mentor: John Holcomb, MD | UTHealth, Center for improve triage Injury Research, Houston, TX |
| 2009-2011 | Data Collector Collected continuous data of trauma patients for PROMMTT (PProspective, Observational, Multi-center Massive Transfusion sTudy) | UTHealth, Center for Translational Injury Research, Houston, TX |
| 2006-2008 | Research Associate I Research focus: resuscitation of burn injury and hemorrhagic shock Responsible for anesthetic and surgical procedures, care, data collection and analysis for large animal studies | The University of Texas Medical Branch, peri-operative Galveston, TX |
| 2004-2006 | Undergraduate Research Assistant Research focus: alcohol abuse and addiction Faculty mentor: Adriana Alcantara, PhD | UT Austin, Austin, TX |
| 2004, 2005 | Summer Undergraduate Research Assistant Research focus: chronic pain and affective disorders Faculty mentor: Volker Neugebauer, MD, PhD | The University of Texas Medical Branch, Galveston, TX |
| 2004 | Undergraduate Laboratory Assistant Assisted Graduate Teaching Assistants in a basic biology laboratory course | UT Austin, Austin, TX |

PATENT

US Patent No 10,262,108 B2. "System and Method for Determining Triage Categories"

PUBLICATIONS

Koh EY, Oyeniyi BT, Fox EE, **Scerbo MH**, Tomasek JS, Wade CE, Holcomb JB. Trends in potentially preventable trauma deaths between 2005-2006 and 2012-2013. *Am J Surg*. 2018 Dec 15.

Scerbo MH, Macaluso A, Pommerening MJ, Tomasek JS, Guerivl DK, Wade CE, Cardenas JC, Cotton BC, Miller CC, Holcomb JB. Aspirin Chemoprophylaxis Decreases Venous Thromboembolism in 13221 Trauma Patients. *J Trauma* 2017 [in revision]

Scerbo MH, Holcomb JB, Taub E, Gates K, Love JD, Wade CE, Cotton BA. The Trauma Center is Too Late: Major Limb Trauma Without A Pre-hospital Tourniquet has Increased Death from Hemorrhagic Shock. *J Trauma* 2017 Aug 31.

Chang R, **Scerbo MH**, Schmitt KM, Adams SD, Choi TJ, Wade CE, Holcomb JB. Early chemoprophylaxis is associated with decreased venous thromboembolism risk without concomitant increase in intraspinal hematoma expansion after traumatic spinal cord injury. *J Trauma Acute Care Surg*. 2017 Aug 31.

Oyeniyi BT, Fox EE, **Scerbo M**, Tomasek JS, Wade CE, Holcomb JB. Trends in 1029 trauma deaths at a level 1 trauma center: Impact of a bleeding control bundle of care. *Injury*. 2017 Jan;48(1):5-12.

Greives MR, Anderson CL, Dean RA, **Scerbo ML**, Doringo IL, Bebbington MW, Teichgraeber JF. Survey of parent experiences in prenatal visits for infants with cleft lip and palate. *Cleft Palate-Craniofacial J* 2016

Scerbo MH, Mumm JP, Gates K, Love JD, Wade CE, Holcomb JB, Cotton BA. Safety and Appropriateness of Tourniquets in 105 Civilians. *Prehosp Emerg Care* 2016 May 31:1-11.

Scerbo MH, Kaplan HB, Dua A, Litwin DB, Ambrose CG, Moore LJ, Murray CC, Wade CE, Holcomb JB. Beyond Blood Culture and Gram Stain Analysis: A Review of Molecular Techniques for the Early Detection of Bacteremia in Surgical Patients. *Surg Infect (Larchmt)*. 2016 Jun;17(3):294-302.

Moren AM, Hampton D, Diggs B, Kiraly L, Fox EE, Holcomb JB, Rahbar MH, Brasel KJ, Cohen MJ, Bulger EM, Schreiber MA; **PROMMTT Study Group**. Recursive partitioning identifies greater than 4 U of packed red blood cells per hour as an improved massive transfusion definition. *J Trauma Acute Care Surg*. 2015 Dec;79(6):920-4.

Cook MR, Holcomb JB, Rahbar MH, Fox EE, Alarcon LH, Bulger EM, Brasel KJ, Schreiber MA; **PROMMTT Study Group**. An abdominal computed tomography may be safe in selected hypotensive trauma patients with positive Focused Assessment with Sonography in Trauma examination.

Am J Surg. 2015 May;209(5):834-40.

Pommerening MJ, Goodman MD, Holcomb JB, Wade CE, Fox EE, Del Junco DJ, Brasel KJ, Bulger EM, Cohen MJ, Alarcon LH, Schreiber MA, Myers JG, Phelan HA, Muskat P, Rahbar M, Cotton BA; MPH on behalf of the **PROMMTT Study Group**. Clinical gestalt and the prediction of massive transfusion after trauma.

Injury. 2015 May;46(5):807-13.

Scerbo M, Radhakrishnan H, Cotton B, Dua A, DelJunco D, Wade C, Holcomb JB. Prehospital triage of trauma patients using the Random Forest computer algorithm. J Surg Res. 2014 Apr;187(2):371-6.

Wade CE, del Junco DJ, Fox EE, Cotton BA, Cohen MJ, Muskat P, Schreiber MA, Rahbar MH, Sauer RM, Brasel KJ, Bulger EM, Myers JG, Phelan HA, Alarcon LH, Holcomb JB; **PROMMTT Study Group**. Do-not-resuscitate orders in trauma patients may bias mortality-based effect estimates: an evaluation using the PROMMTT study. J Trauma Acute Care Surg. 2013 Jul;75(1 Suppl 1):S89-96.

Rahbar MH, del Junco DJ, Huang H, Ning J, Fox EE, Zhang X, Schreiber MA, Brasel KJ, Bulger EM, Wade CE, Cotton BA, Phelan HA, Cohen MJ, Myers JG, Alarcon LH, Muskat P, Holcomb JB; **PROMMTT Study Group**. A latent class model for defining severe hemorrhage: experience from the PROMMTT study. J Trauma Acute Care Surg. 2013 Jul;75(1 Suppl 1):S82-8.

Fuchs PA, del Junco DJ, Fox EE, Holcomb JB, Rahbar MH, Wade CA, Alarcon LH, Brasel KJ, Bulger EM, Cohen MJ, Myers JG, Muskat P, Phelan HA, Schreiber MA, Cotton BA; **PROMMTT Study Group**. Purposeful variable selection and stratification to impute missing Focused Assessment with Sonography for Trauma data in trauma research. J Trauma Acute Care Surg. 2013 Jul;75(1 Suppl 1):S75-81.

Trickey AW, Fox EE, del Junco DJ, Ning J, Holcomb JB, Brasel KJ, Cohen MJ, Schreiber MA, Bulger EM, Phelan HA, Alarcon LH, Myers JG, Muskat P, Cotton BA, Wade CE, Rahbar MH; **PROMMTT Study Group**. The impact of missing trauma data on predicting massive transfusion. J Trauma Acute Care Surg. 2013 Jul;75(1 Suppl 1):S68-74.

Robinson BR, Cotton BA, Pritts TA, Branson R, Holcomb JB, Muskat P, Fox EE, Wade CE, del Junco DJ, Bulger EM, Cohen MJ, Schreiber MA, Myers JG, Brasel KJ, Phelan HA, Alarcon LH, Rahbar MH, Callcut RA; **PROMMTT study group**. Application of the Berlin definition in PROMMTT patients: the impact of resuscitation on the incidence of hypoxemia. J Trauma Acute Care Surg. 2013 Jul;75(1 Suppl 1):S61-7.

Hubbard A, Munoz ID, Decker A, Holcomb JB, Schreiber MA, Bulger EM, Brasel KJ, Fox EE, del Junco DJ, Wade CE, Rahbar MH, Cotton BA, Phelan HA, Myers JG, Alarcon LH, Muskat P, Cohen MJ; **PROMMTT Study Group**. Time-dependent prediction and evaluation of variable importance using superlearning in high-dimensional clinical data. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S53-60.

Barbosa RR, Rowell SE, Fox EE, Holcomb JB, Bulger EM, Phelan HA, Alarcon LH, Myers JG, Brasel KJ, Muskat P, del Junco DJ, Cotton BA, Wade CE, Rahbar MH, Cohen MJ, Schreiber MA; **PROMMTT Study Group**. Increasing time to operation is associated with decreased survival in patients with a positive FAST examination requiring emergent laparotomy. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S48-52.

Cohen MJ, Kutcher M, Redick B, Nelson M, Call M, Knudson MM, Schreiber MA, Bulger EM, Muskat P, Alarcon LH, Myers JG, Rahbar MH, Brasel KJ, Phelan HA, del Junco DJ, Fox EE, Wade CE, Holcomb JB, Cotton BA, Matijevic N; **PROMMTT Study Group**. Clinical and mechanistic drivers of acute traumatic coagulopathy. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S40-7.

Holcomb JB, Fox EE, Zhang X, White N, Wade CE, Cotton BA, del Junco DJ, Bulger EM, Cohen MJ, Schreiber MA, Myers JG, Brasel KJ, Phelan HA, Alarcon LH, Muskat P, Rahbar MH; **PROMMTT Study Group**. Cryoprecipitate use in the PROMMTT study. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S31-9.

del Junco DJ, Holcomb JB, Fox EE, Brasel KJ, Phelan HA, Bulger EM, Schreiber MA, Muskat P, Alarcon LH, Cohen MJ, Cotton BA, Wade CE, Myers JG, Rahbar MH; **PROMMTT Study Group**. Resuscitate early with plasma and platelets or balance blood products gradually: findings from the PROMMTT study. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S24-30.

Rahbar E, Fox EE, del Junco DJ, Harvin JA, Holcomb JB, Wade CE, Schreiber MA, Rahbar MH, Bulger EM, Phelan HA, Brasel KJ, Alarcon LH, Myers JG, Cohen MJ, Muskat P, Cotton BA; **PROMMTT Study Group**. Early resuscitation intensity as a surrogate for bleeding severity and early mortality in the PROMMTT study. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S16-23.

Hampton DA, Fabricant LJ, Differding J, Diggs B, Underwood S, De La Cruz D, Holcomb JB, Brasel KJ, Cohen MJ, Fox EE, Alarcon LH, Rahbar MH, Phelan HA, Bulger EM, Muskat P, Myers JG, del Junco DJ, Wade CE, Cotton BA, Schreiber MA; **PROMMTT Study Group**. Prehospital intravenous fluid is associated with increased survival in trauma patients. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S9-15.

Fox EE, Bulger EM, Dickerson AS, del Junco DJ, Klotz P, Podbielski J, Matijevic N, Brasel KJ, Holcomb

JB, Schreiber MA, Cotton BA, Phelan HA, Cohen MJ, Myers JG, Alarcon LH, Muskat P, Wade CE, Rahbar MH; **PROMMTT Study Group**. Waiver of consent in noninterventional, observational emergency research: the PROMMTT experience. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S3-8.

del Junco DJ, Fox EE, Camp EA, Rahbar MH, Holcomb JB; **PROMMTT Study Group**. Seven deadly sins in trauma outcomes research: an epidemiologic post mortem for major causes of bias. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S97-103.

Holcomb JB, Fox EE, Wade CE; **PROMMTT Study Group**. The PRospective Observational Multicenter Major Trauma Transfusion (PROMMTT) study. *J Trauma Acute Care Surg*. 2013 Jul;75(1 Suppl 1):S1-2.

Holcomb JB, del Junco DJ, Fox EE, Wade CE, Cohen MJ, Schreiber MA, Alarcon LH, Bai Y, Brasel KJ, Bulger EM, Cotton BA, Matijevic N, Muskat P, Myers JG, Phelan HA, White CE, Zhang J, Rahbar MH; **PROMMTT Study Group**. The prospective, observational, multicenter, major trauma transfusion (PROMMTT) study: comparative effectiveness of a time-varying treatment with competing risks. *JAMA Surg*. 2013 Feb;148(2):127-36

Callcut RA, Cotton BA, Muskat P, Fox EE, Wade CE, Holcomb JB, Schreiber MA, Rahbar MH, Cohen MJ, Knudson MM, Brasel KJ, Bulger EM, Del Junco DJ, Myers JG, Alarcon LH, Robinson BR; **PROMMTT Study Group**. Defining when to initiate massive transfusion: a validation study of individual massive transfusion triggers in PROMMTT patients. *J Trauma Acute Care Surg*. 2013 Jan;74(1):59-65, 67-8; discussion 66-7.

Holcomb JB, Minei KM, **Scerbo M**, Radwan ZA, Wade CE, Kozar RA, Gill BS, Albarado R, McNutt MK, Khan S, Adams PR, McCarthy JJ, Cotton BA. Admission Rapid Thrombelastography Can Replace Conventional Coagulation Tests in the Emergency Department. *Annals of Surgery* 2012 256:3, 476-486

Kramer G, Hoskins S, Copper N, Chen JY, **Hazel M** and Mitchell C. Emerging Advances in Burn Resuscitation. *J Trauma* 2007 Jun; 62:S71-2.

Fu Y, Han J, Ishola T, **Scerbo M**, Adwanikar H, Ramsey C and Neugebauer V. PKA and ERK, but not PKC, in the amygdala contribute to pain-related synaptic plasticity and behavior. *Molecular Pain* 2008, 4:26.

Kramer GC, Kinsky MP, Prough DS, Salinas J, Sondeen JL, **Hazel-Scerbo ML** and Mitchell CE. Closed-Loop Control of Fluid Therapy for Treatment of Hypovolemia. *J Trauma* 2008 Apr; 64(4 Suppl):S333-41.

Chen JY, **Scerbo M**, Kramer G. A review of blood substitutes: examining the history, clinical trial results and ethics of hemoglobin-based oxygen carriers. *Clinics*. 2009; 64(8): 803-13.

INVENTION

The Trauma Tablet for Decision Support (Applied for June 2007; FDA 510K application submitted 2011); Inventors: George C. Kramer, **Michelle Scerbo**, Benjamin Voigt and Rodrigo Lima

BOOK CHAPTERS

Scerbo MH, Alramahi B, Felinski MM, Bajwa KS, Wilson EB, Shah SK (2020) The Role of Robotics in Bariatric Surgery. In Ghaferi (ed) *Current Surgery Reports*. Springer, Cham [in press]

Scerbo MH, Felinski MM, Bajwa KS, Wilson EB, Shah, SK (2020) Robotic Gastric Bypass as an Antireflux Procedure. In: Farid Gharagozloo (ed) *Robotic Surgery*. Springer Nature

Scerbo MH, Felinski MM, Bajwa KS, Wilson EB, Shah, SK (2019) Endoscopic Primary Bariatric Procedures. In: Nguyen (ed) *ASMBS Textbook of Bariatric Surgery 2nd Edition*. Springer, Cham

Scerbo MH, Moore LJ (2017) Early Management of Sepsis, Severe Sepsis, and Septic Shock in the Surgical Patient. In: Moore L., Todd S. (eds) *Common Problems in Acute Care Surgery*. Springer, Cham

Scerbo MH, Moore LJ. (2016) The Decision-Making Process in Sepsis and Septic Shock. In: *Surgical Decision Making*. Springer, Cham

ORAL PRESENTATIONS

Scerbo MH, Macaluso A, Pommerening MJ, Tomasek JS, Guerivl DK, Wade CE, Cardenas JC, Cotton BC, Miller CC, Holcomb JB. Aspirin Chemoprophylaxis Decreases Venous Thromboembolism in 13221 Trauma Patients *American Association for the Surgery of Trauma Annual Meeting*. Waikoloa Beach, HI. September 2016.

Scerbo MH, Folkerson LA, Moore LJ, Kao LS, Wade CE, Holcomb JB. Unit Factors Contributing To Guideline Compliance Failure And Patient Complications. *South Texas Chapter of the American College of Surgeons Annual Meeting*. San Antonio, TX. February 2016.

Scerbo MH and Holcomb JB. Improved Compliance with Foley Care Guidelines Following the Implementation of a Patient Dashboard. *Academic Surgical Congress*. Jacksonville, FL. February 2016.

Scerbo MH, Holcomb JB, Gates K, Cotton BA. Civilian Tourniquets for Severe Extremity Injury: Decreased Mortality compared to Propensity Matched Controls. *Academic Surgical Congress. Jacksonville, FL. February 2016.*

Scerbo MH, Kaplan H, Dua A, Litwin D, Ambrose C, Moore LJ, Wade C, Holcomb JB. Early Detection of Bacteremia in a Surgical Intensive Care Unit Using Molecular Techniques. *South Texas Chapter of the American College of Surgeons Annual Meeting. Houston, TX. February 2015.*

Scerbo M, Radhakrishnan H, Cotton B, Dua A, DelJunco D, Wade C, Holcomb JB. Utilization Of The Random Forest Algorithm To Predict Trauma Patient Disposition Based On Pre-hospital Variables. *Academic Surgical Congress. New Orleans, LA. February 2012.*

POSTER PRESENTATIONS

Scerbo MH, Holcomb JB, Taub E, Gates K, Love JD, Wade CE, Cotton BA. The Trauma Center is Too Late: Major Limb Trauma Without A Pre-hospital Tourniquet has Increased Death from Hemorrhagic Shock *American Association for the Surgery of Trauma Annual Meeting. Waikola Beach, HI. September 2016.*

Scerbo MH, Macalusco A and Holcomb JB. Use of Clinical Decision Support to Display Real-Time Antibigrams and Unique Susceptibility Patterns of *P. aeruginosa* and *E. coli* in a Surgical Intensive Care Unit. *Surgical Infection Society. West Palm Beach, FL. May 2016.*

Scerbo MH, Radhakrishnan H and Holcomb JB. Human Error Facilitated by Lack of Effective Clinical Decision Support in the EMR: Missing Vancomycin Trough Levels Are Associated with Worsened Kidney Function). *Surgical Infection Society. West Palm Beach, FL. May 2016.*

Scerbo ML, Radhakrishnan H, Cotton B, Dua A, DelJunco D, Wade C, Holcomb JB. Utilization Of The Random Forest Algorithm To Predict Trauma Patient Disposition Based On Pre-hospital Variables. *Academic Surgical Congress. New Orleans, LA. February 2012.*

Scerbo M, Lakhole A, Fite JK, Podbielski J, Hinds D, Lopez S, Dipasupil E, David W, del Junco D, Duke JH, Holcomb JB. Reliable Reduction of Trauma Overtriage Based on Prehospital Data: A Conservation of Scarce Health Care Resources. *American Medical Association Interim Meeting, Houston, TX 2009; The University of Texas Medical School at Houston Summer Research Program Symposium, Houston, TX, 2009; Advanced Technology Applications for Combat Causality Care Conference, St. Pete's Beach, FL, 2009*

Steer GA, Wang T-Y, Mitchell C, **Scerbo M**, Salter MG, Green SK, Sookram CA, Kramer GC:

Capnographic Monitoring of Cardiovascular Function during Moderate and Severe Hemorrhagic Shock. *Advanced Technology Applications for Combat Causality Care Conference 2008, St. Pete's Beach, FL, 2008.*

Veluvolu A, **Hazel ML**, Copper NC and Kramer GC. Measuring Cardiac Output – A Comparison of Clinical Monitors. *Shock Society Annual Conference, Baltimore, MD, 2007.*

Hazel M, Voigt B, Veluvolu A, Liu Y, Kinsky M, Kramer GC. Closed-Loop Resuscitation of Severe Hemorrhage in Conscious and Anesthetized Sheep: Comparisons of Different Algorithms, Different Target Endpoints and Different Fluids. *Advanced Technology Applications for Combat Causality Care Conference, St. Pete's Beach, FL, 2007.*

Hazel ML, Camp MC and Alcantara AA. Dopamine D2 Receptors on Cholinergic Interneurons in the Prefrontal Cortex, Nucleus Accumbens and Dorsal Striatum Following Alcohol Drinking. *The University of Texas at Austin Research Forum, Austin TX. 2006*

Hazel ML, Han JS, Adwanikar H and Neugebauer V. PKA in the amygdala modulates pain-related vocalizations and synaptic plasticity. *The University of Texas Medical Branch Summer Undergraduate Research Program Poster Day. Galveston, TX. 2005*

Hazel ML, Han JS, Ishola T and Neugebauer V. Inhibition of MAP-Kinase, ERK1/2, cAMP, and PKA, but Not PKC, Reduces Synaptic Plasticity in Central Amygdala Neurons in vitro in a Model of Arthritic Pain. *The University of Texas Medical Branch Summer Undergraduate Research Program Poster Day, Galveston, TX. 2004; The University of Texas at Houston Undergraduate Research Day, Houston, TX, 2004*

PODCASTS

Prehospital Emergency Care Podcast. Civilian Tourniquet Use. Aired: 5/24/2018

SOCIETY MEMBERSHIPS

Society of American Gastrointestinal and Endoscopic Surgeons, 2019 - current

American College of Surgeons, Resident Member, 2012 – current

Surgical Infection Society, 2014 – current

Association for Academic Surgery, 2014 – current