

February 2<sup>nd</sup>, 2023

Dear MPOG Outcomes Research Fellowship Committee,

Please accept this letter expressing my interest in applying for the MPOG Outcomes Research Fellowship for the years 2023-2024.

I have been an NIH T32 Postdoctoral Research Fellow in the UCSF Department of Anesthesia and Perioperative Care since February 2022. I conduct clinical research under Dr. Matthieu M. Legrand's mentorship, focusing on perioperative and critical care. My position allows me to dedicate 100% of my time to research.

I am a Brazilian physician, with residency training in general surgery, fellowship training in critical care, and post-graduate training in clinical nutrition and tropical medicine. Through my clinical experience, I have strong knowledge of surgery, postoperative outcomes, infectious disease, clinical nutrition, and patient-centered care. In 2021, I became a U.S. permanent resident and obtained ECFMG certification. My professional goal is to become a physician-scientist focused on outcomes research in perioperative and critical care in the U.S.

Since I started my position at UCSF, I have gained experience in clinical research and data bank manipulation. I have taken trainings to support my career development, including courses on clinical research design, R programming for health data management (basic and advanced courses), responsible conduct of research, and workshops in biomedical and grant writing. My current research under Dr. Legrand is a large observational study centered on data analysis of the Veterans Affairs National Data Bank. This study investigates the incidence and risk factors for euglycemic diabetic ketoacidosis among diabetic and non-diabetic patients undergoing surgery, in regular use of SGLT2 inhibitors. I recently received a UCSF seed grant to help support this study. I believe that this project will provide me with the initial skills to be able to conduct research using MPOG data.

The MPOG Outcomes Research Fellowship learning objectives align with my T32 postdoctoral research training and my goal of advancing patient outcomes through data bank research. I will also dedicate my time to understanding new modalities of clinical research design such as pragmatic trials and target trial emulation that can be implemented in research protocols using the MPOG registry. The initial study proposal will focus on a retrospective analysis of pulmonary outcomes of obese patients under general anesthesia based on the type of airway management (endotracheal tube vs. laryngeal mask airway). After acquiring more experience using MPOG, I intend to propose a Target Trial Emulation study using MPOG and submit it for an NIH-mentored grant (F or K).

For all these reasons I believe I am a strong candidate who can learn and contribute to the MPOG research efforts now and in the future.

Sincerely,

*Roberta Teixeira Tallarico*

Roberta Teixeira Tallarico, MD, FCCM  
NIH T32 Postdoctoral Research Fellow  
Department of Anesthesia and Perioperative Care - UCSF

**University of California, San Francisco  
CURRICULUM VITAE**

Roberta Teixeira Tallarico, MD

**Position:** NIH T32 Postdoctoral Research Fellow  
Anesthesia & Perioperative Care  
School of Medicine

**Address:**  
521 Parnassus Ave, [REDACTED]  
University of California, San Francisco  
San Francisco, CA 94143  
[REDACTED]  
[REDACTED]

**EDUCATION**

2001-2007	Escola Superior de Ciências da Saúde, Brasília, DF, Brazil.	MD	School of Medicine
2007-2007	University of Brasilia, Brasília, DF, Brazil.	Post-Graduation	Tropical Medicine
2010 - 2012	Hospital Beneficência Portuguesa de São Paulo, São Paulo, SP, Brazil.	Residency	General Surgery
2012 - 2014	Hospital Beneficência Portuguesa de São Paulo, São Paulo, SP, Brazil.	Fellow	Critical Care
2016 - 2016	Brazilian Nutrology Association – ABRAN/ICAN - São Paulo, SP, Brazil.	Post-Graduation	Clinical Nutrition/ Nutrology

**PRINCIPAL POSITIONS HELD**

01/2017 - 04/2017	Mayo Clinic, Jacksonville, Florida.	Observership	Neurocritical Care
10/2018 - 10/2018	University of Florida, Jacksonville, Florida.	Observership	Neurocritical Care
2014 - 2016	Hospital Brasilia, Brasilia, DF, Brazil.	Head Chief of ICU	General ICU and Neurocritical Care

**OTHER POSITIONS HELD CONCURRENTLY**

2010 - 2013	GANEP, São Paulo, SP, Brazil	Medical Consultant	Clinical Nutrition
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2013 - 2014	Hospital Brazil, Santo Andre, SP, Brazil	Medical Consultant	Clinical Nutrition
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**HONORS AND AWARDS**

1999	Recognition for Academic Excellence	UNICEUB	
2006	Student representative at Forum: Integration of Escola Superior de Ciências da Saúde - ESCS/FEPECS and SES services – 2 <sup>nd</sup> phase – Teaching Hospitals: Building a Model of Care, Teaching, and Research in SES/DF	ESCS/FEPECS and SES	
2021	EB1 visa – Category: Extraordinary Ability	U.S. Citizenship and Immigration Services	
2022	T32 Ruth L. Kirschstein Institutional National Research Service Award – awardee (PI: Dr. Judith Hellman)	National Institutes of Health	
2023	Fellow of Critical Care Medicine.	American College of Critical Care Medicine	

**KEYWORDS/AREAS OF INTEREST**

Critical Care, Perioperative Care, Sepsis, Chronic Critical Illness, Acute Kidney Injury, Patient and Family Care, and Clinical Research.

**CLINICAL ACTIVITIES**

**CLINICAL ACTIVITIES SUMMARY**

I worked as an attending in Internal Medicine and Infectious Disease as an Official Doctor for the Air Force. After my residency and fellowship training, I became a Critical Care and Clinical Nutrition consultant in Brazil from 2014 to 2021. I also held leadership positions on hospital committees and completed clinical research and residence and fellowship training (where I was supervising medical students, residents, and fellows daily). All my appointments included clinical activity and teaching. I volunteered as site principal investigator for National and International research trials, including eligible patients from my ICU. I moved to the US in December 2021 and started my position as an NIH T32 postdoctoral research fellow at UCSF Parnassus campus in February 2022. My time is 100% allocated to clinical research training and publication, where I participate in the POCCO lab (Peri-operative and Critical Care Outcome Research Group). I supervise medical students and residents from UCSF and international hospitals that join our lab to learn about clinical research.

**CLINICAL SERVICES**

2008 - 2009	Air Force, Hospital da Força Aérea de Brasilia (HFAB), Brasilia, DF, Brazil	Medical Staff	Internal Medicine and Infections Disease
2014 - 2016	NUTEP, Brasilia, DF, Brazil.	Medical Consultant	Clinical Nutrition

2014 - 2016	NUTEPLAR, Brasilia, DF, Brazil.	Medical Consultant	Clinical Nutrition
2016 - 2018	Instituto de Cardiologia e Transplante do Distrito Federal (ICDF), Brasilia, DF, Brazil – Hospital for Cardiac, Liver and Kidney transplantation	ICU Consultant	Critical Care
2016 -	Instituto de Cardiologia e Transplante do Distrito Federal (ICDF), Brasilia, DF, Brazil.	Critical Care Fellowship Coordinator	Critical Care
2016 - 2021	Hospital Home, Brasilia, DF, Brazil.	ICU Coordinator and Consultant, Critical Care Fellowship Coordinator	Critical Care
2016 - 2021	Hospital Home, Brasilia, DF, Brazil.	Research Coordinator	Critical Care
2019 - 2021	Hospital Home, Brasilia, DF, Brazil.	Member	Mortality and Morbidity committee
2019 - 2021	Hospital Home, Brasilia, DF, Brazil.	President	Organ Donation Committee
06/2019 - 12/2021	Hospital Brasilia, Brasilia, DF, Brazil.	ICU Staff	Cardiology and Neurologic Critical Care

## PROFESSIONAL ACTIVITIES

### PEER REVIEW ACTIVITIES

#### Clinical Abstracts Evaluation and Judging Commission Member:

2011: Member of the Scientific Committee – Judge of Clinical Abstracts GANEPÃO 2011: XII Paulista Forum in Clinical and Experimental Nutrition Research (CBNI), XXXIV Parenteral and Enteral Nutrition International Course. São Paulo, SP, Brazil.

Abstract reviewer for the Society of Critical Care (SCCM) Congress:

2019: 30 abstracts

2020: 30 abstracts

2021: 18 abstracts

2022: 15 abstracts

Visual abstract editor and reviewer for the Neurocritical Care Journal: 2020 – present

Member of the Brazilian Intensive Medicine Association Member of the Board Committee to Board Certificate evaluation for the Critical Care Specialist Title:

2017: Board Certificate Clinical Cases Station

2019: Board Certificate Clinical Cases Station

2022: Invited to compose the Board Certificate Clinical Cases Station - The invitation was declined due to the impossibility to travel to Brazil.

### MEMBERSHIPS

2012 - present Brazilian Critical Care Association (AMIB)

2017 - present Society Of Critical Care Medicine (SCCM)  
 2018 - present Neurocritical Care Society (NCS)  
 2022 - present American Society of Anesthesiologists (ASA)  
 2022 - present International Anesthesia Research Society (IARS)

### **SERVICE TO PROFESSIONAL ORGANIZATIONS**

2017 - present	SCCM	Member
2017 - present	SCCM Annual Meeting Poster Sections	Moderator
2019 - present	SCCM Social Media Committee	Member
2022 - present	SCCM Social Media Ambassador	Member/Ambassador
2022 - present:	SCCM Thrive Patient and Family Committee	Member
2020 - present:	NCS Social Media Team	Member, Visual Editor, Official Portuguese Translator

### **INVITED PRESENTATIONS - INTERNATIONAL**

2011	Parenteral Nutrition Care GANEP, Post-Graduation in Clinical Nutrition course 2011. São Paulo, SP, Brazil	Speaker
2012	Access to enteral nutrition, indications, and complications GANEP, Post-Graduation in Clinical Nutrition course 2012. São Paulo, SP, Brazil	Speaker
2012	Access to parenteral nutrition. GANEP, Post-Graduation in Clinical Nutrition course 2012. São Paulo, SP, Brazil	Speaker
2014	Multimodal monitorization in Neurocritical patients I Neurointensive care Symposium of Hospital Brasília, Brasília, Brazil.	Symposium Director and Speaker
2015	Pulmonary Embolism Nurse Seminar, Brasília, Brazil, 2015	Speaker
2015	Clinical Nutrition Therapy in Neurocritical Care patients. XIX Nutrology Brazilian Congress – ABRAN- São Paulo, Brazil	Speaker
2016	Multidisciplinary approach of the neurocritical patient II Neurointensive care Symposium of Hospital Brasília, Brasília, Brazil	Speaker
2016	Clinical Nutrition Therapy in Cardiovascular Surgery XX Nutrology Brazilian Congress -ABRAN- São Paulo, Brazil.	Speaker
2017	Brain death diagnosis: new proposals? I COBRATI, Brasília, Brazil.	Speaker

2017	Clinical evidence in Parenteral Nutrition I COBRATI, Brasília, Brazil.	Speaker
2018	Stroke. LAMIN Seminars, Brasilia, Brazil	Speaker
2019	Trauma Brain Injury. II UniCEUB Critical Care Symposium, Brasília, Brazil	Speaker
2019	Trauma Brain Injury and patient care II COBRATI, Brasília, Brazil.	Speaker
2019	The importance of fluid balance and urine output in acute renal failure. I Sepsis and Kidney Symposium, Brasilia, Brazil	Speaker
2020	COVID-19, what we know until today. LAMIN Seminars, Brasilia, Brazil.	Speaker Speaker
2021	Nutrition in Neurocritically ill patients. Latin American Congress in Neurointensivism, CLaNi. November 18-19 <sup>th</sup> . Online.	
2021	Nutrition and ICU – what is new? XXVI CBMI – Intensive Medicine Brazilian Congress, November 7-8 <sup>th</sup> . Online.	Round Table Moderator
2022	Neurocritical treatment of Acute Stroke. I Integrated Congress of Goias and Distrito Federal Chapter	Speaker

### **INVITED PRESENTATIONS - NATIONAL**

2017	Mayo Clinic Neurocritical Care Grand Rounds: Clinical Nutrition in Neurocritical Care patients. Mayo Clinic, Jacksonville, FL.	Speaker
2017	CRP/ECMO Workshop. Annual Neuro and Intensive Care: Review, Workshops, and Controversies 2017	Workshop Instructor

### **UNIVERSITY AND PUBLIC SERVICE SERVICE ACTIVITIES SUMMARY**

As a surgery resident and critical care fellow at Hospital Beneficencia Portuguesa de Sao Paulo and after that as an attending in the public and private ICU in Hospital in Brasilia, I have provided research and career advice to fellows, residents, and medical students. I have supervised and trained medical students, residents, and fellows to be able to improve their clinical knowledge and skills, including as a supervisor in invasive procedures and surgeries. Now my appointment is exclusively in research, and I do not have clinical duties. I believe in teaching and training the next generation of physicians and now I serve as a mentor for the international visiting students and residents at the anesthesia POCCO group at UCSF. I also help CRCs that are applying for medical school giving them advice and being someone they can talk to in moments of uncertainty. Since medical school, I believe in giving back to the

community by participating in multiple campaigns of vaccination, women's health advice, and pediatric service.

### **DEPARTMENTAL SERVICE**

2022 - present UCSF POCCO lab Member

### **COMMUNITY AND PUBLIC SERVICE**

2001 - 2003	Women's Public Health Advisor, Paranoa, DF, Brazil	Volunteer
2004 - 2005	Obstetrics Ultrasound assistant, Ceilandia, DF, Brazil	Volunteer
2003 - 2007	Pediatric Surgery, surgical instrumentation assistant, South Wing Regional Hospital, Brasilia, DF, Brazil	Volunteer
2004 - 2006	Orphanage primary care assistant, Cidade Ocidental, GO, Brazil.	Volunteer providing primary care orientations for foster kid institutions
2022 - present	Braid Mission, San Francisco, California	Volunteer – Youth Mentor

### **CONTRIBUTIONS TO DIVERSITY**

#### **CONTRIBUTIONS TO DIVERSITY**

Throughout my medical and graduate training at ESCS, and more recently during my residency and practice in Brasilia, I have been involved in many activities related to the recruitment and mentoring of high school, graduate, medical, and residency trainees in biomedical careers. I come from a Latin American background, my family is from Brazil, and I was born and raised there. I am also the first in my family to attend medical school and the first doctor. My involvement in mentoring younger generations is inspired by my own experience.

When I decided to apply for surgical residency, I also needed to understand how difficult it is for a woman to dedicate herself to this career. Since then, I've been dedicated to helping young females in their residency and fellow applications.

I was part of the fellowship program at Home Hospital in the capital of Brazil for 4 years, helping in recruitment and supporting residents and fellows during their training, always being aware of their challenges, and facilitating emotional support and well-being resources.

I am committed to helping young doctors from all genders to achieve their potential, but as a Latin American woman, I understand the challenges of these populations and intend to keep assisting the future generation of healthcare professionals.

Aside from working directly with healthcare professionals, I volunteer at Braid mission, mentoring a young girl of underprivileged background who intends to be a doctor someday.

### **TEACHING AND MENTORING**

#### **TEACHING SUMMARY**

Nowadays I'm involved in the informal teaching of medical students and CRCs at the POCCO lab. I also teach UCSF anesthesia residents in workshops on sedation and analgesia. Before

moving to the U.S. I was directly involved in medical and nursing school teaching as a volunteer in seminars and special classes. I was also responsible for training the residents, critical care fellows, and medical students that had their ICU rotation at the hospital I was part of the Critical Care fellowship coordination.

## **TEACHING SUMMARY**

- 2014 - 2016 Weekly instruction and teaching during clinical service with fellows, residents and medical students
- 2016 - 2021 Critical Care Mentor and Supervisor of Critical Care Fellowship at Home Hospital
- 04/2017 ECMO Workshop Instructor – Mayo Clinic annual Neurointensive and Critical Care course
- 2019 - 2021 Monthly meeting with medical students – discussion of neurocritical care cases
- 11/2022 UCSF CA1 Anesthesia Residency Workshop in Sedation and Analgesia - Instructor

## **MENTORING SUMMARY**

I have mentored high school students, undergraduate students, and medical students at different times during my training. I'm very involved in mentoring students from underrepresented backgrounds and first-generation students going into college. I recognize that early mentoring can really impact the development of a student's full potential. For that reason, I have been involved in different mentoring programs and in the development of resources in Brazil and now in San Francisco. I also have a personal blog that discusses Empathy in the ICU setting between all members of the multidisciplinary team, families, and patients. I participate in both the social media teams of SCCM and NCS where I also mentor other healthcare professionals.

## **RESEARCH AND CREATIVE ACTIVITIES**

### **RESEARCH AND CREATIVE ACTIVITIES SUMMARY**

I am an NIH T32 postdoctoral research fellow in the Department of Anesthesia and Perioperative Care. I conduct clinical research in perioperative and critical care, focusing on chronic critically ill patients (including COVID-19). My recent work is on the perioperative repercussions of medications of regular use and their impact on post-operative period changes in the metabolic and renal systems. Understanding the main risk factors associated with routine medications indicated in chronic disease treatments preoperatively can reduce complications in the postoperative period, avoid ICU admissions or reduce the length of stay. Early recognition of acute renal injury as a consequence of surgery is also in the scope of my research. By focusing on the perioperative period, I seek to improve both the information patients receive during the preoperative evaluation regarding the potential effects of their routine medication during and after surgery and also to develop potential approaches for improving care during the period of surgery and postoperative recovery. My short-term research goal is to continue to develop meaningful clinical research with results that will directly impact perioperative outcomes and quality improvement. My ultimate goal is to become an established anesthesiologist physician-scientist in a major academic medical center conducting clinical studies that will advance our knowledge about postoperative risk factors associated with chronic disease treatment and



specific protocols, in order to improve surgery recovery and reduce or avoid ICU stays among populations that are historically neglected (e.g., diabetic, obese).

I also volunteer at the Neurocritical care Journal as a visual abstract editor where I am responsible for producing infographics based on the latest publications of the journal. I also review my colleagues' infographics and translate all the contents into Portuguese. This volunteer work has increased my abilities in visual graphics that have enhanced my publications.

## RESEARCH FUNDING - CURRENT

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- |  |                              |             |
|--|------------------------------|-------------|
| 1. T32GM008440   | postdoctoral research fellow | 100% effort |
| NIH T32 Ruth L. Kirschstein Institutional National Research Service 02/22/2022 |                              |             |
| Award - Grant Recipient: Dr. Judith Hellman (PI)                               |                              |             |

I am a T32 postdoctoral research fellow with 100% time dedicated to research. I am funded by this grant which provides salary support.

I am developing the project Gliflozins use and the incidence of Euglycemic diabetic ketoacidosis (GLIPEK study) through Veterans Affairs National Data Bank.

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- |  |  |                                |
|--|--|--------------------------------|
| 2. UCSF FAST-CaR Seed Grant  |  | Complementary research efforts |
| 2022 – 2023 FAST-CaR Seed Grant - Grant Recipient: Dr. Roberta Teixeira Tallarico (PI) |  | 01/20/2023                     |

I am funded by this grant which provides additional support for data analysis.

I am developing the project Gliflozins use and the incidence of Euglycemic diabetic ketoacidosis (GLIPEK study) through Veterans Affairs National Data Bank.

## PEER REVIEWED PUBLICATIONS

1. **Tallarico RT**, Caldas AC, Teles LMM, et al. Home parenteral nutrition therapy: epidemiologic profile and prevalence of major complications in a private setting in Brasilia, DF. DOI: 10.37111/braspenj.2019344017. BRASPEN J 2019; 34(4): 408-13.

2. **Tallarico RT**, Pizzi MA, Freeman WD. Investigational drugs for vasospasm after subarachnoid hemorrhage. Expert Opin Investig Drugs. 2018:1-12. Doi:10.1080/13543784.2018.1460353

3. PR Margotto, MDR Moura, JTM Alves, **RT Tallarico**. Evaluation of the impact of prenatal therapy with corticosteroids in a referral maternity school. Brasília Med 2011;48(2):148-157

### Collaboration with publications:

4. Vincent, JL et al. Prevalence and Outcomes of Infection Among Patients in Intensive Care Units in 2017. JAMA. doi:10.1001/JAMA.2020.2717 Published online March 24, 2020. Co-investigator – **mentioned in supplement page 9. Brazil, Hospital Home: Tallarico, R.**

5. Zampieri FG, Machado FR, Biondi RS, Freitas FGR, Veiga VC, Figueiredo RC, Lovato WJ, Amêndola CP, Serpa-Neto A, Paranhos JLR, Guedes MAV, Lúcio EA, Oliveira-Júnior LC, Lisboa TC, Lacerda FH, Maia IS, Grion CMC, Assunção MSC, Manoel ALO, Silva-Junior JM, Duarte P, Soares RM, Miranda TA, de Lima LM, Gurgel RM, Paisani DM, Corrêa TD, Azevedo LCP, Kellum JA, Damiani LP, Brandão da Silva N, Cavalcanti AB; BaSICS investigators and the BRICNet members. Effect of Intravenous Fluid Treatment With a Balanced Solution vs 0.9% Saline Solution on Mortality in Critically Ill Patients: The BaSICS Randomized Clinical Trial. JAMA. 2021 Aug 10;326(9):1–12. doi: 10.1001/jama.2021.11684. Epub ahead of print. PMID: 34375394; PMCID: PMC8356144. Site PI. **Collaborator: Roberta T. Tallarico**

6. Zampieri FG, Machado FR, Biondi RS, Freitas FGR, Veiga VC, Figueiredo RC, Lovato WJ, Amêndola CP, Assunção MSC, Serpa-Neto A, Paranhos JLR, Andrade J, Godoy MMG, Romano E, Dal Pizzol F, Silva EB, Silva MML, Machado MCV, Malbouisson LMS, Manoel ALO, Thompson MM, Figueiredo LM, Soares RM, Miranda TA, de Lima LM, Santucci EV, Corrêa TD, Azevedo LCP, Kellum JA, Damiani LP, Silva NB, Cavalcanti AB; BaSICS investigators and the BRICNet members. Effect of Slower vs Faster Intravenous Fluid Bolus Rates on Mortality in Critically Ill Patients: The BaSICS Randomized Clinical Trial. JAMA. 2021 Sep 7;326(9):830-838. doi: 10.1001/jama.2021.11444. PMID: 34547081; PMCID: PMC8356145. Site PI. **Collaborator: Roberta T. Tallarico**

## **SIGNIFICANT PUBLICATIONS**

1. **Tallarico RT**, Neto AS, Legrand M. Pragmatic platform trials to improve the outcome of patients with acute kidney injury. *Curr Opin Crit Care*. 2022 Sep 29. DOI: 10.1097/MCC.0000000000000990. Epub ahead of print. PMID: 36170383.
2. **Tallarico RT**, Deniau B, Fong N, Ghosn J, Legrand M; French-COVID and the FROG-ICU Investigators. Differences in HADS and SF-36 scores 1 year after critical illness in COVID-19 patients. *Intensive Care Med*. 2022 Sep;48(9):1245-1247. DOI: 10.1007/s00134-022-06797-9. Epub 2022 Jul 8. PMID: 35804201; PMCID: PMC9267703.

## **CONFERENCE ABSTRACTS**

1. Fernandez, Carina; Szego, Tiago; **Tallarico, Roberta Teixeira**; Teixeira, Daniela Bertiol; Bertevello, Pedro Luiz. Endoscopic treatment for Plummer – Vinson Syndrom. Case Report. Hospital Beneficência Portuguesa De São Paulo, São Paulo, Sp, Brasil. XXIX Congresso Brasileiro de Cirurgia, 2011.
2. **Tallarico, RT**; Rojas S; Cavalcante, VV. Daptomycin as a cause of False Increasing of Prothrombin Time Test. VXII CBMI, Intensive Care Brazilian Congress - AMIB - Fortaleza, Brazil, 2012
3. Cavalcante, VV; Rojas S; **Tallarico, RT**. Impact of the Rapid Response Team in readmissions in Intensive Care. Oral Presentation. VXII CBMI, Intensive Care Brazilian Congress - AMIB - Fortaleza, Brazil, 2012
4. Cavalcante, VV; Rojas S; **Tallarico, RT**. Adhesion to a Sepsis Institutional Protocol by a High Complex Hospital. VXII CBMI, Intensive Care Brazilian Congress - AMIB - Fortaleza, Brazil, 2012

5. Cavalcante, VV; Rojas S; **Tallarico, RT**. Blood Stream infection prevention related to short-term central lines: data from Brazilian Program of Patient Safety. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
6. Cavalcante, VV; Rojas S; **Tallarico, RT**. Urinary tract infection prevention related to bladder catheter: data from Brazilian Program of Patient Safety. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
7. Cavalcante, VV; Rojas S; **Tallarico, RT**. Prevalence of Venous Thromboembolism in a Neurocritical Care Unit. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
8. Cavalcante, VV; Rojas S; **Tallarico, RT**. Construction and Validation of Bench markers of Quality in Neurocritical Care patients. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
9. **Tallarico, RT**; Cavalcante, VV; Rojas S. Impact of the Clinical Pharmacist work in a Neurocritical Care Unit. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
10. **Tallarico, RT**; Cavalcante, VV; Rojas S. Prevalence of Thyroid dysfunction in Critical Care and its impact on the clinical endpoint. Care Unit. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
11. Cavalcante, VV; Rojas S; **Tallarico, RT**. Skin lesions related to elastic sock and pneumatic boots in Neurocritical Care Unit. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
12. Cavalcante, VV; Rojas S; **Tallarico, RT**. Eligibility to sepsis protocol among patients admitted to a Neurocritical Care Unit, after an active search by the nurse team. XVIII CBMI, Intensive Care Brazilian Congress- AMIB – Rio de Janeiro, Brazil, 2013.
13. **Tallarico, RT**; Paschoal, M; Silva, R; Fagundes Jr, AA. Clinical Nutrition Follow-up in Trauma Brain Injury and Polytrauma Patients in a Brazilian Private Intensive Care Unit Neurocritical Care Society 16th Annual Meeting – Boca Raton, Florida, USA, 2018
14. Biondi, Rodrigo; Barzilai, Vitor; Rocha, Edvar Junior; Santos, Bruno Moraes; **Tallarico, Roberta**; Paiva, Auro Junior; Pio, Rodrigo; Vale, Ana Gabriela; Valadao, Leticia; Araujo, Milla; Conceicao, Rodrigo; Costa, Thais; Ulhoa, Marcelo Junior; Atik, Fernando. 579: NEW-ONSET ACUTE KIDNEY FAILURE REQUIRING RENAL REPLACEMENT THERAPY IN POST-HEART TRANSPLANT PATIENTS. Critical Care Medicine: January 2018 - Volume 46 - Issue 1 - p 275 doi: 10.1097/01.ccm.0000528595.31314.42
15. Tenorio, A; Tallarico, RT, Fagundes Jr. AA. Patient perception of hospitalization process at the Intensive Care Unit bedside – epidemiologic aspects including main complaints related to the length of stay. Congress of Intensive and Critical Care Medicine – XIX CBMI, Fortaleza, Brazil, 2019.
16. Biondi, Rodrigo; Barzilai, Vitor; **Tallarico, Roberta**; Junior, Marcelo Ulhoa; Moraes, Camila; Chaves, Renato; Cunha, Claudio; Atik, Fernando. 212: IS SHORTAGE OF HEART DONORS A

REAL PROBLEM? INSIGHTS FROM A BRAZILIAN HEART TRANSPLANT PROGRAM. Critical Care Medicine: January 2019 - Volume 47 - Issue 1 - p 88 doi: 10.1097/01.ccm.0000550967.70503.

17. **Tallarico, RT**; Paschoal, M; Silva, R; Fagundes Jr, AA. Assistance Impact after implantation of a Stroke Protocol in a General ICU of a Private Hospital. V COMIN – Brazilian Congress of Neurology Intensive Care, São Paulo, Brazil, 2019.
18. **Tallarico, RT**; Paschoal, M; Silva, R; Fagundes Jr, AA. Clinical profile of the patients diagnosed with neurologic pathologies and the decision about palliative care by non-palliative care trained doctors. V COMIN – Brazilian Congress of Neurology Intensive Care, São Paulo, Brazil, 2019.

### **BOOK CHAPTERS**

1. **Tallarico RT**. Transmembrane transportation and cellular signalization. in Physiology and Pharmacology applied to intensive care. Biondi et all, chapter 2, pages: 9-16. Atheneu. 2019.
2. **Tallarico RT**. Endothelial function, nutrient diffusion, electrolytes, and extracellular fluid. in Physiology and Pharmacology applied to intensive care. Biondi et all, chapter 4, pages: 27-34. Atheneu. 2019.

### **COURSEWORK FOCUSED ON RESEARCH**

1. 2017 Writing for Biomedical Publication, CCaTS Annual Workshop, Mayo Clinic, Jacksonville, Florida, United States, 2017.
2. NIH Grant Workshop - Neurocritical Care Society 16th Annual Meeting – Boca Raton, Florida, United States, 2018.
3. UCSF Catalyst Awards Internship Program (Summer 2022)
4. Responsible Conduct of Research Summer 2022 – UCSF
5. Evidence-Based Teaching (Summer 2022) – UCSF
6. EPI 202: Designing Clinical Research (Two Months) (Summer 2022) – UCSF
7. BIOSTAT 213: Introduction to Programming for Health Data Science in R (Summer 2022) – UCSF
8. BIOSTAT 214: Programming for Health Data Science in R II (Fall 2022) – UCSF
9. Funding Fest 2022: K99/R00 & the NIH Grant Process (TORREY PINES TRAINING CONSORTIUM).
10. Workshops from the UCSF Library:
  - a. R programming series
  - b. Python series
  - c. Dimensions research analytics database training
  - d. PubMed super search
11. Fellows Advancement Skills Training in Clinical Research (FAST-CaR) program 2022-2023 - UCSF



MICHAEL A. GROPPER, MD, PhD  
PROFESSOR AND CHAIR  
DEPARTMENT OF ANESTHESIA AND PERIOPERATIVE CARE  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
500 PARNASSUS AVENUE  
SAN FRANCISCO, CALIFORNIA 94143-0648



February 2, 2023

RE: Roberta Tallarico, MD MPOG Outcomes Research Fellowship Application

Dear MPOG Outcomes Research Fellowship Committee,

I'm writing to express strong support of Dr. Roberta Tallarico's MPOG Outcomes Research Fellowship application. Dr. Tallarico is an NIH T32 Postdoctoral Research Fellow working under the mentorship of Dr. Matthieu Legrand. We recruited her to our research training program due to her experience in perioperative and critical care and her unwavering motivation in pursuing a career as a physician-scientist in the U.S. Over the course of her NIH research training, she has gained clinical research skills and experience working with a large data base (the Veterans Affairs National Data Bank). The MPOG Outcomes Research Fellowship would further enhance Dr. Tallarico's research skills and prepare her for a future mentored research grant proposal.

As Chair of the Department of Anesthesia and Perioperative Care at UCSF, I confirm that Dr. Tallarico will have 100% protected non-clinical time devoted to the fellowship. We will support her salary and course fees through our NIH T32 training grant for the entire fellowship period. The department will provide her with additional career development opportunities through individualized mentoring, lectures, and workshops that are part of our larger Pathway to Scientific Independence research training program.

In summary, Dr. Tallarico is an ideal candidate for this fellowship and will receive the necessary support for her success. I give my highest endorsement for this application.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Gropper'.

Michael Gropper, MD, PhD  
Professor & Chair  
Department of Anesthesia and Perioperative Care

**UCSF** Department of  
Anesthesia and  
Perioperative Care

**Dr Matthieu Legrand, MD, PhD**  
*Anesthesiology & Critical Care Medicine*  
Full Professor in Residence  
Director of Clinical Research

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February 2<sup>nd</sup>, 2023

Dear MPOG Outcomes Research Fellowship Committee,

I am writing to convey my most enthusiastic support of Dr. Roberta T. Tallarico's application for an MPOG Outcomes Research Fellowship and the project entitled "**The use of laryngeal mask airway in obese patients undergoing general anesthesia**".

The project designed under my supervision for this application is a retrospective cohort analysis embedded in the database of the Multicenter Perioperative Outcomes Group (MPOG) in which Dr. Tallarico will explore the practice patterns across MPOG institutions of laryngeal mask airway among obese patients undergoing general anesthesia. Obesity is increasing globally, and specific guidelines for the airway management of this population have been neglected. The results of this study will have direct implications for patient care.

The MPOG Outcomes Research Fellowship will provide Dr. Tallarico with additional knowledge in research informatics, large dataset analysis, and performance measurement and improvement to build up her career as a physician-scientist.

Dr. Tallarico is dedicated to a research career that aims to improve patient outcomes during perioperative and critical care. She is extremely hard working, as shown by her 2 peer-reviewed publications over the first 6 months of her T32 fellowship (including in Intensive Care Medicine, IF=44) and her recent UCSF FAST-CaR Seed Grant. Dr. Tallarico has the training, knowledge, and institutional support to carry out this clinically impactful research study. I enthusiastically support Dr. Tallarico's application and endorse her as an ideal candidate for the MPOG Outcomes Research Fellowship.

I remain at your disposal for any further questions or concerns.

Matthieu Legrand



Professor  
Department of Anesthesia and Perioperative Care  
Division of Critical Care Medicine  
Director of Clinical Research

## **The use of laryngeal mask airway in obese patients undergoing general anesthesia**

### **SPECIFIC AIMS:**

General anesthesia (GA) causes deep sleep or unconsciousness, making it necessary to provide adequate oxygen delivery and ventilatory support to the patient. The options for airway maintenance include endotracheal tube (ETT) and supraglottic airway devices (e.g., laryngeal mask airway). [1–3]. Although described as an alternative approach to ETT, LMA use may present significant complications among obese patients under GA and is therefore associated with a higher risk of failure [4–7]. On the contrary, other experts in the field defended the use of LMA in GA in obese patients[8,9].

Obesity reduces chest wall compliance and pulmonary functional residual capacity. Under mechanical ventilation, obese patients may require high airway pressure to achieve adequate ventilation and there is an increased risk of complications during GA (e.g., atelectasis, impaired ventilation, disordered gas exchange, and barotrauma) [1,4,5,10]. Kheterpal et al. identified a body mass index (BMI)  $\geq 30\text{kg/m}^2$  as an independent factor for difficult mask ventilation combined with a difficult laryngoscopy [2]. Overall, obesity is correlated with a higher risk for intubation failure and a higher need for difficult airway maneuvers[1,3].

Furthermore, LMA placement in obese patients can be difficult due to anatomical neck changes such as an increase in upper airway tissue and limitations in neck mobility [6,11]. In a single hospital system analysis, including 15,795 patients in the use of LMA, where the mean BMI was  $29.3\text{kg/m}^2$ , BMI was identified as an independent risk factor for LMA failure (adjusted odds ratio 1.06 per unit body mass index increase, 95% CI 1,03-1,09) [7]. In a prospective study enrolling 1,874 patients in the use of LMA, where only 32% were obese (595 patients), obesity was associated with a higher risk of pulmonary events, including the need to convert into endotracheal intubation [4]. This study also showed that LMA complication rates in obese patients increase with BMI (3.3% in non-obese; 5.7% in obese class 1; 6.8% in obese class 2; and 21.3% in obese class 3) [4]. Other studies reporting safety in the use of LMA among obese patients are mostly single-center and have a small sample size (Wang et al.[11]: 20 patients and BMI  $\geq 35\text{kg/m}^2$ ; Turna et al. [5]: 80 patients and BMI  $\geq 35\text{kg/m}^2$ , 90 patients and BMI  $\geq 30\text{kg/m}^2$ ). Overall, there is a lack of research to support or contraindicate LMA use among obese patients.

In this proposal, we will use a large data bank (Multicenter Perioperative Outcomes Group - MPOG) to analyze patients with BMI  $\geq 30\text{ kg/m}^2$ , submitted to GA in use of LMA alone. We will evaluate trends in the use of LMA in GA in obese patients and compare clinical outcomes with those of obese patients in the use of ETT alone. We have two objectives with this research. The first is to describe the practice of LMA use for GA in obese patients among MPOG institutions, as there is no consensus for this population. Later, we will explore the risk for complications and outcomes associated with LMA use when compared to ETT use in patients with higher BMI. We hypothesize that patients with higher BMI will present worse outcomes. This is a retrospective cohort study designed to analyze patient baseline characteristics, intraoperative information, and clinical outcomes based on pre-specified phenotypes and standardized data files (see Table 1 for more details). The possibility of using a large sample size provided by the MPOG dataset will enable a multivariate analysis and identify risk factors associated with LMA use for GA among obese patients.

**AIM 1: To describe the practice patterns across MPOG institutions of laryngeal mask airway (i.e., supraglottic airway device) among obese patients undergoing general anesthesia.** We will analyze adult patients with BMI  $\geq 30\text{kg/m}^2$  undergoing GA in use of LMA and extract specific institution-related practices based on standardized MPOG data.

**AIM 2: To evaluate the outcomes of obese patients undergoing general anesthesia in the use of a laryngeal mask airway (supraglottic airway device) compared to endotracheal intubation.** We will evaluate the difference between both groups concerning pulmonary complications (primary outcomes), hospital length of stay, and 30-day mortality (secondary outcomes) among obese adult patients (BMI  $\geq 30\text{kg/m}^2$ ) under GA that used LMA vs. ETT, adjusting on predetermined characteristics.

**AIM 3: To describe the main risk factors associated with pulmonary complications in obese patients using LMA for general anesthesia procedures vs endotracheal intubation.** We will analyze the patient's baseline characteristics and procedure information to determine the risk factors associated with LMA use for GA in obese patients, including different strata of BMI.

### **EXPECTED OUTCOMES:**

**The overarching goal of this proposal is to evaluate the implications of using LMA for GA in obese patients and establish specific recommendations** for this patient population. The proposed research project and fellowship training will provide me with the tools and experience to submit an NIH mentored grant (F or K) and advance my research career towards independence.

## References

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**Table 1 – Preliminary selection of MPOG Phenotypes and Standardized Data files (MPOG Version 2021)**

<b>Phenotypes (also find in Standardized files)</b>		<b>Page</b>
<b><i>Demographics</i></b>		
Age	≥18 years old and ≤ 99 years old	9
BMI	Obese (4)	54
WHO BMI Classification	Obese Class I, II, III	309
Ideal Body weight		142
Height (cm)		138
Weight (kg)		308
Sex	all	287
Race	all	285
MPOG Patient ID		166
<b><i>Comorbidities</i></b>		
Elixhauser Comorbidity – AIDS/HIV		71
Elixhauser Comorbidity – Alcohol Abuse		73
Elixhauser Comorbidity – Blood Loss Anemia		75
Elixhauser Comorbidity – Cardiac Arrhythmias		77
Elixhauser Comorbidity – Chronic Pulmonary Disease		79
Elixhauser Comorbidity – Congestive Heart failure		83
Elixhauser Comorbidity – Deficiency Anemia		85
Elixhauser Comorbidity – Depression		87
Elixhauser Comorbidity – Diabetes (complicated)		87
Elixhauser Comorbidity – Diabetes (uncomplicated)		91
Elixhauser Comorbidity – Drug Abuse		93
Elixhauser Comorbidity – Fluid/electrolyte Disorders		95
Elixhauser Comorbidity – Hypertension (complicated)		97
Elixhauser Comorbidity – Hypertension (uncomplicated)		99
Elixhauser Comorbidity – Hypothyroidism		101
Elixhauser Comorbidity – Liver Disease		103
Elixhauser Comorbidity – Lymphoma		105
Elixhauser Comorbidity – Metastatic Cancer		107
Elixhauser Comorbidity – Obesity		109
Elixhauser Comorbidity – Other Neurological Disorder		111
Elixhauser Comorbidity – Peptic Ulcer Disease, Excluding bleeding		115
Elixhauser Comorbidity – Psychoses		119
Elixhauser Comorbidity – Pulmonary Circulation Disorders		121
Elixhauser Comorbidity – Renal Failure		123
Elixhauser Comorbidity – Rheumatoid Arthritis Collagen Vascular Diseases		125
Elixhauser Comorbidity – Solid Tumor without Metastases		127
Elixhauser Comorbidity – Valvar Disease		129
Elixhauser Comorbidity – Weight Loss		131
MPOG Comorbidity - Cerebrovascular Disease		159
MPOG Comorbidity - Coronary Artery Disease		161
MPOG Complication - Acute Kidney Injury (AKI)		163
<b><i>Preoperative laboratory exams</i></b>		
Preop Albumin		201

Preop Alk phosphatase		203
Preop ALT		204
Preop AST		205
Preop BUN		206
Preop Calcium ionized		207
Preop Carbon Dioxide (CO2), Arterial		209
Preop Carbon Dioxide (CO2), Mixed Venous		210
Preop Carbon Dioxide (CO2), Serum		211
Preop Carbon Dioxide (CO2), Venous		212
Preop Creatinine		214
Preop EGFR (lowest within 60 days)		216
Preop Glucose		218
Preop HgBA1c		226
Preop Hematocrit		222
Preop Lactate		229
Preop Platelet Count		231
Preop Potassium		233
Preop Protein		234
Preop Sodium		239
Preop Total Bilirubin		241
Preop Troponin (highest)		242
Preop Troponin (most recent)		244
<b><i>Intraoperative Information</i></b>		
ASA class	ASA 1-5, Excluded ASA 6	40
Arrived intubated	NO	13
Emergency Status (ASA Class) (Yes/No)		
Anesthesia CPT (All)	all	16
Anesthesia Duration		20
Anesthesia End		21
Anesthesia Start		22
Anesthesia technique: General		23
Induction End		143
Induction start		144
Case End		66
Case Start		67
Duration of Anesthesiology attending Sign-in		68
Duration of Anesthesiology resident Sign-in		69
Duration of CRNA and Anesthesia Assistant Sign-in		70
Patient In Room Date/Time		190
Patient Out Of Room Date/Time		191
Surgery End		288
Surgery Start		289
Surgical CPTs (All)		290
Tidal Volume Actual (Median)		291
Tidal Volume Set (Median)		293
Median Peak Inspiratory Pressure (PIP)		192
PEEP Actual Median		193
PEEP Set Median		195
Ventilator Respiratory Rate Actual (Median)		304
Ventilator Respiratory Rate Set (Median)		305

Halogenated Anesthetic Gases		135
Paralytics Used (all)		
Paralytics Used (non-depolarizing NMBs only)		
<b>Hospital information</b>		
Hospital Bed Size		141
Institution		146
Medical school affiliation		154
US institution		303
<b>Outcomes</b>		
Postoperative Destination		199
Last Known Alive		153
Mortality (in Hospital 30-day)		157
AHRQ Complication - Pulmonary - All		10
<b>Standardized data file not included in the phenotype section</b>		
MORT 01: 30 day In-Hospital Mortality		
PUL-01: Percentage of cases with median tidal volumes less than 10ml/kg.		
PUL-02: Percentage of cases with median tidal volumes less than or equal to 8 ml/kg.		
PUL-03: Percentage of cases in which Positive End Expiratory Pressure (PEEP) is used for patients undergoing mechanical ventilation during anesthesia. PUL 03 will determine if PEEP was administered (as defined by median PEEP $\geq$ 2) and also analyze distribution of PEEP levels:		
<ul style="list-style-type: none"> <li>• No PEEP (&lt;2 cm H<sub>2</sub>O)</li> <li>• Low PEEP (2-4 cm H<sub>2</sub>O)</li> <li>• Moderate PEEP (<math>\geq</math> 4 to &lt; 8 cm H<sub>2</sub>O)</li> <li>• High PEEP (<math>\geq</math>8 cm H<sub>2</sub>O)</li> </ul>		
SMOK-01:Percentage of patients, $\geq$ 18 years of age, with smoking status documented within 30 days prior to any procedure requiring anesthesia		
SMOK-02:Percentage of patients, $\geq$ 18 years of age, who are documented as current tobacco smokers and also receive an approved smoking cessation intervention from an anesthesia provider		
MED-01: Percentage of cases that required the use of nalaxone or flumazenil for medication overdose.		
NMB-01: Percentage of cases with a documented Train of Four (TOF) after last dose of non-depolarizing neuromuscular blocker.		
NMB-02Administration of Neostigmine, Sugammadex, and/or Edrophonium before extubation for cases with non-depolarizing neuromuscular blockade.		
TOC-01: Percentage of patients who undergo a procedure under anesthesia in which a permanent intraoperative anesthesia staff change occurred, who have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the next responsible anesthesia practitioner.		
TOC-02: Percentage of patients, regardless of age, who are under the care of an anesthesia practitioner and are admitted to a PACU in which a post-anesthetic formal transfer of care protocol or checklist which includes the key transfer of care elements is utilized.		
TOC-03: Percentage of patients, regardless of age, who undergo a procedure under anesthesia and are admitted to an Intensive Care Unit (ICU) directly from the anesthetizing location, who have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the responsible ICU team or team member		

