EDUCATION & POST GRADUATE TRAINING

Oregon Health & Science University

Portland, OR July 2018 – June 2020

Fellowship in Medical Toxicology

Inpatient toxicology service with over 200 bedside consults annually. Poison center catchment area includes Oregon, Alaska, Utah, and Guam with over 50,000 annual calls.

Education Scholars Program

One-year longitudinal faculty development program in education scholarship & curriculum design.

Kings County & Downstate Hospital

Brooklyn, NY July 2014 – June 2018

Residency in Emergency Medicine

Four-year categorical EM residency.

Kings County Hospital: Public inner-city Level I Trauma center with over 100,000 adult and 30,000 pediatric annual ED visits and 600 beds. Seventh busiest American emergency department in 2017.

University Hospital of Brooklyn: Tertiary care Transplant, Dialysis, Stroke, Cardiac center with 70,000 annual ED visits and 400 beds.

NYU Langone Hospital in Brooklyn: Community Level I Trauma, Stroke, Cardiac center with 70,000 annual ED visits and 400 beds.

Toxicology electives at New York City and Oregon Poison Centers.

State University of New York Downstate College of Medicine

Brooklyn, NY 2014 May

Doctor of Medicine

New York University Graduate School of Arts and Science

Manhattan, NY 2010 May

Master of Arts

World History

New York University College of Arts and Science

Manhattan, NY 2009 Ma

Bachelor of Arts

Major in History, Cum Laude. Minors in Classics and Chemistry.

PROFESSIONAL MEDICAL EXPERIENCE

Oregon Health & Science University Department of Emergency Medicine

Portland, OR July 2018 – Present

Attending Physician in Emergency Department

Tertiary Level 1 Trauma, Comprehensive Stroke, Transplant, Dialysis, and Cardiac center with 50,000 ED visits and 550 beds.

Portland VA Medical Center Department of Emergency Medicine

Portland, OR July 2018 – Present

Attending Physician in Emergency Department

U.S. Federal Department of Veterans Affairs Stroke, and Cardiac center with 30,000 ED visits.

PROFESSIONAL SOCIETY MEMBERSHIPS

LICENSES & CERTIFICATIONS

American College of Medical Toxicology – ACMT American Academy of Clinical Toxicology – AACT

Oregon Mycological Society – OMS

Oregon Medical Association - OMA

ABEM – Certified by the American Board of Emergency Medicine

OMB – Oregon Medical Board License

DEA - Drug Enforcement Administration License

HMTT - Certification in Hyperbaric Medicine Team Training

ATLS – Advanced Trauma Life Support

ACLS – Advanced Cardiac Life Support

PALS – Pediatric Advanced Life Support

BLS – Basic Life Support

HONORS & AWARDS

Kings County Hospital	2018	June	Research Division Award
Brooklyn, NY			Toxicology Division Award
			Toxicology Mini-Fellowship Award
			Simulation Mini-Fellowship Award
Downstate Medical College	2014	May	Alpha Omega Alpha Honors Society
Brooklyn, NY			Gold Humanism Honors Society
			Jakway Award for Anatomy Education
			Academic Development Award for Excellence in Leadership and Teaching
New York University	2009	May	Phi Alpha Theta History Honors Society
Manhattan, NY			Founder's Day Award
	2008	May	Dean's List
	2007	May	Dean's List

ACADEMIC LEADERSHIP EXPERIENCE

Oregon Health & Science University Department of Emergency Medicine Portland OR July 2018 Procent

Portland, OR July 2018 - Present

Clinical Assistant Instructor

Bedside teaching for residents & students while providing patient care. Cadaver lab procedure day, disaster drill day, transvenous pacemaker placement, advanced airway instructor.

Toxicology Podcast Producer

Recorded & Managed the Oregon Poison Center Journal Club podcast with over 1,000 downloads.

Podcast available on <u>iTunes</u>, <u>Google Play</u>, and <u>Sound Cloud</u>

American Association of Poison Control Centers January 2019 - Present

National Poison Data System Fatality Reviewer

Reviewed case fatalities reported to the national poison data system registry. Reviews are compiled into abstracts, providing data for epidemiological analysis of poisoning deaths and the NPDS annual report.

Kings County & Downstate Hospital Department of Emergency Medicine Brooklyn, NY July 2014 – June 2018

Course Instructor

Taught the following courses for junior residents, MD & PA students: peripheral IVs, phlebotomy, suturing, Seldinger technique, diagnostic ultrasound, pericardiocentesis, IO infusion, resuscitative thoracotomy.

Clinical Assistant Instructor

Bedside teaching for students while providing patient care. "Pre-attending" role as preceptor for junior residents.

CURRICULUM DESIGN

Oregon Health & Science University Department of Emergency Medicine Portland, OR February 2019 – Present

Toxicology Simulation Curriculum Developer

Developed and ran weekly simulation sessions for residents and medical students with emphasis on diagnosis & management of poisoned patients, procedures, critical care, communication, and teamwork.

QRunner & ToxRunner

Software Developer

Brooklyn, NY October 2013 – Present

Developed the software platforms QRunner and ToxRunner, which provide USMLE style examinations for medical students and toxicology review questions for residents, respectively www.ToxRunner.net

Kings County & Downstate Hospital Department of Emergency Medicine Brooklyn, NY July 2014 – June 2018

Emergency Medicine Video Lecture Series

Received funds and equipment from Emergency Medicine department to enhance resident education using videography.

Filmed weekly academic lectures and uploaded them to <u>YouTube</u>. Viewership is international. Over 100,000 views.

Filmed All NYC EM Conference and NYC ACEP.

Created medical student education videos.

Created several procedure videos.

Medical Simulation Mini Fellowship

Filmed weekly simulation sessions to provide residents with feedback on performance

Assisted with weekly case debriefings Simulation curriculum & case design

Toxicology Mini Fellowship

Curriculum design

Organophosphates and the Assassination of Kim Jong-nam Cyanide Antidotes and the Jonestown Massacre Naloxone and the Moscow Theater Hostage Crisis Snake Oil Poisoning and Medical Quackery

State University of New York Downstate College of Medicine Brooklyn, NY June 2011 - May 2014

Creator of the Downstate Video Atlas of Anatomy

Created almost 40 educational videos profiling various anatomical regions. The videos are used by MD, PA, and OT students on the university's intranet.

A DVD with videos is available on request.

PEER-REVIEWED PUBLICATIONS

Clinical Toxicology

DOI: 10.1080/15563650.2019.1657883

August 2019

4 | Methemoglobinemia Associated with Massive

Acetaminophen Ingestion: A Case Series

Rianprakaisang T, Blumenberg A, Hendrickson RG

Clinical Toxicology

DOI: 10.1080/15563650.2019.1609685

May 2019

3 | A letter reporting a case of fatal ventricular

dysrhythmia associated with

the LSD analog AL-LAD Blumenberg A, Hendrickson RG

Emergency Medicine

DOI: 10.12788/emed.2018.0094

June 2018

2 | Sarcoidosis Resulting in Exsanguinating

Esophageal Variceal Hemorrhage

Blumenberg A, Sharifali S, Sinert R

Journal of Medical Toxicology

DOI: 10.1007/s13181-017-0636-2

March 2018

1 | Utility of 2-Pyridine Aldoxime Methyl chloride

(2-PAM) for Acute Organophosphate Poisoning: A Systematic Review and Meta-Analysis

Blumenberg A, Benabbas R, Sinert R, DeSouza I, Wiener S, et al.

NON PEER-REVIEWED PUBLICATIONS

Medscape Drugs and Diseases

Updated May 2017

6 | Arsenic Toxicity

Blumenberg A, Wiener S

http://emedicine.medscape.com/article/812953

Medscape Drugs and Diseases

Updated November 2016

5 | Emergent Treatment of Alcoholic Ketoacidosis

Blumenberg A, Wiener S

https://emedicine.medscape.com/article/765856-overview

The Medical Dialog Review

April 2009 4:32-38

4 | Scientific and Religious Assessments of

Physicality and Sexuality During the Middle Ages

Blumenberg A

The NYU Historian

April 2009 50:24-28

3 | Medieval Obstetrics, or How I Learned to Stop

Worrying and Love the Womb

Blumenberg A

The Medical Dialog Review

April 2008 2:39-43

2 | The Continuity of Medieval Medical

Knowledge

Blumenberg A

The NYU Historian

April 2008 49:20-28

1 | Logic and Intuition in Arabic Medicine

Blumenberg A

ABSTRACTS

Clinical Toxicology DOI: 10.1080/15563650.2019.1636569 August 2019	20 Acute Fluoride Toxicokinetics Modelled Via Electrolyte Disturbance Velocity in a Single Patient Blumenberg A, Rudy C, Girardi F, McKeown N, Hendrickson RG
Clinical Toxicology DOI: 10.1080/15563650.2019.1636569 August 2019	19 Feasibility of Incorporating Medical Simulation into a Poison Center's Medical Toxicology Curriculum Blumenberg A, Murphy L, Hughes A, Rianprakaisang T, Horowitz BZ, Hendrickson RG
Clinical Toxicology DOI: 10.1080/15563650.2019.1636569 August 2019	18 Shotgun pellet embolism to the right atrium with elevated blood lead concentrations Hughes A, McKeown N, Rianprakaisang T, Murphy L, Blumenberg A, Hendrickson RG
Clinical Toxicology DOI: 10.1080/15563650.2019.1636569 August 2019	17 Toxic brain death mimics Murphy L, Wolfer H, Blumenberg A, Rianprakaisang T, Hughes A, Hendrickson RG
Clinical Toxicology DOI: 10.1080/15563650.2019.1636569 August 2019	16 Misinterpretation of carbon monoxide reference range leading to mass public concern Murphy L, Rianprakaisang T, Hughes A. Blumenberg A, Hendrickson RG
Clinical Toxicology DOI: 10.1080/15563650.2019.1598646 May 2019	15 Do patients die with or from metformin- associated lactic acidosis (MALA)? Systematic review and meta-analysis of pH and lactate as predictors of mortality in MALA Wiener S, Benabbas R, Jeng A, Blumenberg A, Sinert R
Journal of Medical Toxicology DOI: 10.1007/s13181-019-00699-x March 2019	14 Case Report of the LSD Analog AL-LAD Associated with Ventricular Fibrillation and Death Blumenberg A, Murphy L, Hughes A, Rianprakaisang T, Hendrickson RG
Journal of Medical Toxicology DOI: 10.1007/s13181-019-00699-x March 2019	13 HiddenPoisonNextDoor: Breaking News and its Effects on Poison Center Calls and Social Media Presence Blumenberg A, Murphy L, Hughes A, Rianprakaisang T, Lopez A
Journal of Medical Toxicology DOI: 10.1007/s13181-019-00699-x March 2019	12 Case of somnolence due to ingestion of a liquid designer benzodiazepine Murphy L, Blumenberg A, Hughes A, Rianprakaisang T, Hendrickson RG
Journal of Medical Toxicology DOI: 10.1007/s13181-019-00699-x March 2019	11 Sudden cardiac death in a bodybuilder Murphy L, Blumenberg A, Rianprakaisang T, Hughes A, Hendrickson RG
Journal of Medical Toxicology DOI: 10.1007/s13181-019-00699-x	10 Clinical Course and Management of the Heroin Body Stuffer

Hughes A, Murphy L, Rianprakaisang T, Blumenberg A, Hendrickson RG

March 2019

March 2019	Hughes A,
DOI: <u>10.1007/s13181-019-00699-x</u>	Toxicit
Journal of Medical Toxicology	9 Asso
Journal of Medical Toxicology	9 I A:

9 | Association of Ingested Dose and Severity of Toxicity in Heroin Body Stuffers.

Hughes A, Murphy L, Blumenberg A, Rianprakaisang T, Hendrickson RG

Hughes A, Blumenberg A, Murphy L, Rianprakaisang T, Hendrickson RG

DOI: 10.1007/s13181-019-00699-x March 2019

8 | Predictors of Poisoning Severity in Diphenhydramine Overdose

Journal of Medical Toxicology

DOI: <u>10.1007/s13181-019-00699-x</u> March 2019 7 | Does Co-Ingestion with Benzodiazepines Reduce the Rate of Seizures in Overdose? A Review of the Toxicology Investigators Consortium Database.

Rianprakaisang T, Prather C, **Blumenberg A**, Murphy L, Hughes A, Hendrickson RG

Journal of Medical Toxicology

DOI: $\underline{10.1007/s13181-019-00699-x}$

March 2019

6 | Rates of Serotonin Toxicity and Factors Associated with Seizures in SNRI Overdose: a Review of the Toxicology Investigators Consortium Database.

Rianprakaisang T, Prather C, Murphy L, **Blumenberg A**, Hughes A, Hendrickson RG

Journal of Medical Toxicology

DOI: <u>10.1007/s13181-019-00699-x</u>

March 2019

5 | A Case of Fatal Acetaminophen Ingestion Associated with Methemoglobinemia

Rianprakaisang T, Hughes A, Blumenberg A, Murphy L, Hendrickson RG

Journal of Medical Toxicology

DOI: <u>10.1007/s13181-019-00699-x</u>

March 2019

4 | Serum and Urine Detection of Phenibut: A Pharmacokinetic Analysis

Rianprakaisang T, Moss M, **Blumenberg A**, Hughes A, Murphy L, Hendrickson RG

Journal of Medical Toxicology

DOI: <u>10.1007/s13181-019-00699-x</u>

March 2019

3 | A Case of Pediatric AB-FUBINACA Toxicity from a Commercially Produced CBD Product Rianprakaisang T, Hughes A, Murphy L, Blumenberg A, Hendrickson RG

The FASEB Journal

26:529.15

April 2012

2 | The Downstate Video Atlas of Anatomy, A Project Powered by Dyad Pedagogy Blumenberg A and Marquez S

The FASEB Journal

25:495.3

April 2011

1 | Dyad Pedagogy and the Application of Video Education to Anatomy

Blumenberg A and Marquez S

POSTER PRESENTATIONS

its

NACCT Annual Conference Nashville, TN 2019 September	6 Acute Fluoride Toxicokinetics Modelled Via Electrolyte Disturbance Velocity in a Single Patient' accepted for Poster presentation
NACCT Annual Conference Nashville, TN 2019 September	5 Feasibility of Incorporating Medical Simulation into a Poison Center's Medical Toxicology Curriculum
ACMT Annual Scientific Symposium San Francisco, CA 2019 April	4 Case Report of the LSD Analog AL-LAD Associated with Ventricular Fibrillation and Death (In absentia)
ACMT Annual Scientific Symposium San Francisco, CA 2019 April	3 HiddenPoisonNextDoor: Breaking News and i Effects on Poison Center Calls and Social Media Presence (In absentia)
Experimental Biology Conference San Diego, CA 2012 April	2 The Downstate Video Atlas of Anatomy, A Project Powered by Dyad Pedagogy
Experimental Biology Conference Washington DC 2011 April	1 Dyad Pedagogy and the Application of Video Education to Anatomy
	MEDIA EXPERT CONSULTATION
KATU ABC Channel 2 News Portland, OR 2019 August	5 Television Interview about Acute Lung Injury and Vaping
The Statesman Journal Salem, OR 2019 August	4 Background Information on Cannabinoid Hyperemesis Syndrome
American Chemical Society & PBS Portland, OR 2019 July	3 Web Video Educating Public on Overdoses
The Register-Guard Newspaper	
Eugene, OR 2019 July	2 Background Information on Kratom

ACADEMIC PRESENTATIONS

Invited International Lectures

Bangkok Dusit Medical Services: Webinar

Bangkok, Thailand 2019 March Occupational Toxicology Lecture Series on Asbestos

Invited National Lectures

ACMT National Webinar

Portland, OR 2019 June 6 | Mass Sociogenic Illness Aboard a Naval Vessel

2018 December 5 | Sudden Sniffing Death

Multistate Poison Center Teleconference

Portland, OR 2019 June 4 | Mitragynine and Status Epilepticus

March 3 | Critical Care of Fluoride Poisoning

2018 October 2 | Acute Carbamate Toxicity

July 1| Encephalitis vs. Serotonin Syndrome in a Young Woman

Regional Lectures

OHSU: Didactic for Residents

Portland, OR 2019 September 21 Gastrointestinal Decontamination

August 20 | Pain Management in Sickle Cell Disease

2018 November 19 | Contrast Nephropathy: A Review of the Evidence

<u>Tualatin Fire & Rescue: Didactic for Paramedics</u>

Sherwood, OR 2019 April 18 | Paramedic HAZMAT: Drug-Contaminated Environments

17 | Paramedic HAZMAT: Pesticides, Carbon Monoxide, Cyanide

16 Introduction to The Poison Center

Kings County Hospital: Didactic for Residents

Brooklyn, NY

June

15 | Diagnosing Pulmonary Embolism

May

14 | Drug-Induced Hyperthermia Part 2

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February 13 | The RUSH Exam
2017 December 12 | Artifacts in CT Scan

September 11 Digitalis Toxicity

10 | Alcohol Withdrawal

August 9 | Drug-Induced Hyperthermia

June 8 | Valproic Acid Poisoning: GI Decontamination,

Carnitine, Hemodialysis & Critical Care

May 7 | Status Epilepticus

January 6 | Simulation: Left Ventricular Assist Device

2016 December 5 | Simulation: Amyotrophic Lateral Sclerosis and Palliative Care

October 4 | NOAC review

September 3 | Diagnosing Acute Cord Compression

May 2 | Simulation: Pediatric Myocarditis & ECMO

2015 November 1 | Skin Disorders in Children

Brief Lectures

Portland, OR 2019	2019	October	40 Wound Botulism
			39 Organophosphate Poisoning
	September	38 Naloxone Dosing	
			37 Shock in Cyanide Toxicity
	August	36 Titrating Atropine in Organophosphate Toxicity	
		35 Shock Management in Iron Toxicity	
		June	34 Diagnosis of Infantile Botulism
			33 How to Perform an Infant Needle Cricothyrotomy
			32 Alternative Antidotes for Atropine Shortage
			31 Intralipid Rescue
			30 Differential Diagnosis of Status Epilepticus
			29 Cyanide Antidotes
		May	28 Subtleties in Diagnosing Iron Poisoning
		27 Management of Torsade de Pointes	
		26 Altered Mental Status in Aspirin Poisoning	
		25 Tailoring Naloxone Dose	
			24 Pre-intubation Oxygenation Optimization
	April	23 Isoniazid Toxicity	
		22 Airway & Ventilator Management in Acidemia	
		21 Safely Escalating Benzodiazepines in Alcohol Withdrawal	
			20 Rapid Cooling Techniques in Hyperthermia
		March	19 High Dose Insulin Therapy for Calcium Channel Blocker Toxicity
			18 Benzodiazepine Refractory Status Epilepticus
			17 Hydrofluoric Acid and Electrolyte Disturbances
			16 Malathion Poisoning
			15 Opiates, Naloxone, and ARDS
			14 Acute Iron Toxicity
			13 Ethylene Glycol Poisoning
	February	12 Burns: Cyanide and Carbon Monoxide Toxicity	
		11 Salicylate Toxicity	
		10 Sympathomimetics and Hyperthermia	
	Hospital: Mo	orning Report	
Brooklyn, NY 2018	2018	June	9 Neurogenic Respiratory Failure
		April	8 Emergencies Related to Sexual Activity
		February	7 Diagnosing Death
		January	6 Pediatric Phosphide Poisoning
	2017	December	5 Uno Card Triage Simulation
		October	4 Organophosphate Mass Casualty Incident
		September	3 Complications of Massive Transfusion

August

July

2 | Palliative Care in the Emergency Department

1 | Renal Failure and Emergency Hemodialysis

ACADEMIC PODCAST EPISODES

Oregon Poison Center Podcast Available on <u>iTunes</u>, <u>Google Play</u>, and <u>Sound Cloud</u>

2019 August 9 | LSD: 50 Years after Woodstock

June 8 | Spiders and Scorpions

March 7 | Emerging Research on Toxicity of Antibiotics February 6 | Up in Smoke: Tobacco, Vaping, and Marijuana

January 5 | Cobinamide

2018 October 4 Aspirin

September 3 | Lead and Chelation

August 2 | Caustic Injuries

2017 August 1 | Sugammadex

ACADEMIC BLOG POSTS

Clinical Monster.com Available on blog.clinicalmonster.com/author/ablumenberg

2017 May 12 | Clinical CT: Hepatic Congestion in CHF
April 11 | ED Management of Spontaneous Human

Combustion (April Fool's Day)

10 | Clinical CT: Abdominal Aortic Aneurysm

January 9 | Toxicology Mystery Case: Wound Botulism

2016 November 8 | Toxicology Mystery Case: Citrate Toxicity
October 7 | Clinical CT: Subarachnoid Hemorrhage
September 6 | Toxicology Mystery Case: Insulin Overdose

August 5 | Clinical CT: Tibial Plateau Fracture

4 | Toxicology Mystery Case: Soy Sauce Toxicity

June 3 | Clinical Ultrasound: Testicular Torsion

2015 August 2 | Lateral Canthotomy & Cricothyrotomy,

July 1 | Suturing

LANGUAGES

Serbo-Croatian: Conversational

Spanish: Rudimentary

Latin: Written

HOBBIES & INTERESTS

Cooking

Urban Hiking

Thrift Stores

Filmmaking

Photography

Travel

Reading

Movies

History

Science Fiction

