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# JASKARAN (JAY) RAKKAR

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Pittsburgh, PA • 678.910.0833 • [jrakkar3@gmail.com](mailto:jrakkar3@gmail.com)

CRITICAL CARE MEDICINE FELLOW | PEDIATRICIAN | BIOMEDICAL ENGINEER

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## MEDICAL EDUCATION & TRAINING

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|------------------------|--|
| July 2018 - Present    | Pediatric Critical Care Medicine Fellowship<br><i>UPMC Children's Hospital of Pittsburgh</i><br>Pittsburgh, PA |
| June 2015 - June 2018  | Pediatric Residency<br><i>Phoenix Children's Hospital/Maricopa Medical Center</i><br>Phoenix, AZ               |
| August 2011 - May 2015 | Doctorate of Medicine<br><i>Medical College of Georgia at Georgia Regents University</i><br>Augusta, GA        |
| August 2007 - May 2011 | Bachelor of Science, Biomedical Engineering<br><i>Georgia Institute of Technology</i><br>Atlanta, GA           |

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## LICENSURE & CERTIFICATIONS

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- Pennsylvania Medical Physician and Surgeon License (Number: MD465489); expires 12/31/2020
- Pennsylvania Graduate Medical Trainee License (Number: MT215751); expires 06/2021
- BLS expiration date: 08/2021
- PALS expiration date: 08/2021
- Arizona Training Permit (Type 1908, Number: R75153); expired 06/2018
- PCH DEA License: BP7644152-6547; expired 06/2018

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## PROFESSIONAL MEMBERSHIPS

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- Society of Critical Care Medicine
- Pennsylvania Medical Society
- American Academy of Pediatrics

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## HONORS & AWARDS

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- Resident of the Month Award, March 2017
- Medical Scholars Program Award, 2012
- Congress of Neurological Surgeons Annual Meeting Travel Award, 2011
- Provisional Patent, MitraRestore, 2011
- Georgia Tech Inventure Prize Semifinalist, MitraRestore, 2011
- BMEidea Contest, MitraRestore, 2011
- Dean's List, 2008, 2010 - 2011
- Alpha Eta Mu Beta Conference Award, 2010
- President's Undergraduate Research Travel Award, 2010
- Faculty Honors, 2007 & 2009
- Siemens Westinghouse Competition Semifinalist, Optimization of funds for Guinea worm eradication, 2005

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## APPOINTMENTS & LEADERSHIP

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- PICU Liaison, 2016 - 2018
- Residency Scholarship Oversight Committee (RSOC), 2016 - 2018
- PCH Residency, Treasurer, 2017
- PCH Residency, Outdoor Sports Coordinator, 2017
- PCH Residency, Community Service Chair, 2016

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## RESEARCH

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### 2018 - present

Division of Pediatric Critical Care Medicine, Children's Hospital of Pittsburgh of UPMC

- Electronic Pediatric Intensity Level of Therapy Score to Predict Mortality in ICP-Monitored Patients.
- Dynamic Assessment of Intracranial Compliance in Pediatric Traumatic Brain Injury: Proof of Concept
- Optimizing Outcomes: Clinical Pathway for Post-Operative Liver Transplantation Patients.
- QI projects:
  - Improving Nutrition in Critically Ill Patients: PICU nutrition iPhone app (TPN Calculator).
  - Enhancing Medical Trainee Learning and Teaching: PICU resource iPhone app (PICUbrain).

### 2012 –2018

Department of Surgery - Trauma Interdisciplinary Group for Research, Georgia Regents University

- Evaluation of Systemic Inflammatory Response Syndrome (SIRS) in increasing susceptibility to sepsis and organ failure following trauma.

Department of Pediatric ICU, Maricopa Integrated Health System

- Ketamine Use For Procedural Sedation in Pediatric Burn Patients.

Department of Radiology, Phoenix Children's Hospital

- MSSA Tibial Osteomyelitis with Septic Embolism in an Infant.

Department of General Pediatrics & Adolescent Medicine, Phoenix Children's Hospital

- Optimizing continuity of care in resident continuity clinic.
- Strategies in improving classification & treatment of asthma.
- Improving ACE (adverse childhood experience) screening and optimizing resource utilization in high risk populations.

Department of Surgery, Phoenix Children's Hospital

- Does the "July Effect" impact mortality among pediatric patients admitted with septic shock?
- Identifying pediatric patient characteristics associated with increased mortality risk from septic shock.

Department of Pediatrics, Child Protection Team, Phoenix Children's Hospital

- Case Report: Sturge-Weber Syndrome Mimicking Child Abuse.

### 2009 – 2012

Department of Neurosurgery and Neurology, Emory University School of Medicine

- Simple indirect targeting is accurate for microelectrode mapping during Deep Brain Stimulation (DBS) surgery.
- Macrostimulation through the microelectrode guide cannula during DBS implantation for Parkinson's disease and tremor.
- Intraoperative stereotactic accuracy of the FHC microTargeting and Axon Instruments microdrives.
- Examining the catchment area for a neurosurgery service at a tertiary care facility in the southeast and the potential value of a Health Information Exchange (HIE).
- Impact of fusion with decompression and resection on recurrence rates of lumbar spine facet synovial cysts.
- Subgroup analysis of 30-day readmission of patients with stroke and cerebrovascular disease.

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## PRESENTATIONS & POSTERS

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- **Jaskaran Rakkar, MD**; Michael Wolf, MD; Dennis Simon, MD; Patrick Kochanek, MD, MCCM; Gilles Clermont, MD; Robert

- Clark, MD, FCCM; Christopher Horvat, MD. "Electronic Pediatric Intensity Level of Therapy Score to Predict Mortality in ICP-Monitored Patients". 2020 Critical Care Congress - Society of Critical Care Medicine. Orlando, FL.
- Michael Wolf, MD; **Jaskaran Rakkar, MD**; Christopher Horvat, MD; Dennis Simon, MD; Patrick Kochanek, MD, MCCM; Gilles Clermont, MD; Robert Clark, MD, FCCM. "Dynamic Assessment of Intracranial Compliance in Pediatric Traumatic Brain Injury: Proof of Concept". 2020 Critical Care Congress - Society of Critical Care Medicine. Orlando, FL.
  - **Jaskaran Rakkar, MD**; Eleanor Sharp, MD; Alicia Au, MD, MS; Rajesh Aneja, MD. "Development of a Mobile Application to Optimize Parenteral Nutrition in Pediatric Patients". 2020 Rita M. Patel Leadership Conference. Pittsburgh, PA.
  - Alexander Ruesch, BS; Samantha Schmitt, BS; Jason Yang, BS; Deepshikha Acharya, BS; **Jaskaran Rakkar, MD**; Michael Wolf, MD; Michael McDowell, MD; Elizabeth Tyler-Kabara, MD, PhD; Robert Clark, MD, FCCM; Matthew Smith, PhD; Jana Kainerstorfer, PhD. "Intracranial pressure estimated non-invasively in non-human primates and pediatric critical care". SPIE Photonics West – BIOS 2020. San Francisco, CA.
  - Jackie Calhoun, MSN, RN, CPNP-AC, CCRN; **Jaskaran Rakkar, MD**; Rajesh Aneja, MD; Kyle Soltys, MD. "Development of Post-Operative Liver Transplant Pathways". 2019 National Healthcare Quality Week at Children's Hospital of Pittsburgh. Pittsburgh, PA.
  - **Jaskaran Rakkar, MD**. "Button Battery Ingestion in Children". 2019 Fall Timely Trauma Topic Conference at Children's Hospital of Pittsburgh. Pittsburgh, PA.
  - Rachel Neville, MD; Dana Delaney, MD; **Jaskaran Rakkar, MD**; Jennifer Hall, MD; Adam Farmer, MD; Adam Frischknecht, MD; Erica Bohmer, MD; James Chang, MD; Katie Norris, MD; Jennifer Farabaugh, Brett Hurliman, MD; Kristen Samaddar, MD. "SPACE to Grow: Screening Patients for Adverse Childhood Experiences and Social Determinants of Health". 2018 Phoenix Children's Quality Day. Phoenix, AZ.
  - Elizabeth G. NeSmith, PhD, ACNP-BC; **Jaskaran Rakkar, BS**; Regina S. Medeiros, DNP, MHSA, CCRN; Colville H.B. Ferdinand, MD, FACS; Steven B. Holsten, Jr., MD, FACS; Saera Kim, BS. "Differences in the immune response to poly-trauma in the Emergency Department: Could stress be responsible?". 2014 3rd International Cairo University Faculty of Nursing Conference: "Nursing Specialties based on Community Needs: Challenges and Opportunities". Cairo, Egypt.
  - Elizabeth G. NeSmith, PhD, ACNP-BC; **Jaskaran Rakkar, BS**; Regina S. Medeiros, DNP, MHSA, CCRN; Colville H.B. Ferdinand, MD, FACS; Steven B. Holsten, Jr., MD, FACS; Haidong Zhu, MD, PhD; Yanbin Dong, MD, PhD. "Optimizing health by determining factors associated with differences in baseline inflammation and susceptibility to sepsis in complex poly-trauma patients to prevent poor outcomes". 2014 Council for the Advancement of Nursing Science. Washington, DC.
  - Elizabeth G. NeSmith, PhD, ACNP-BC; Regina S. Medeiros, DNP, MHSA, CCRN; Colville H.B. Ferdinand, MD, FACS; Steven B. Holsten, Jr., MD, FACS; Yanbin Dong, MD, PhD; Haidong Zhu, MD, PhD; **Jaskaran Rakkar, BS**. "Health Disparities in Acute Outcomes of Life-Threatening Injury: Potential Mechanisms and Implications for Nursing Practice and Research". 2013 International Conference on Nursing & Emergency Medicine. Las Vegas, NV.
  - Elizabeth G. NeSmith, PhD, ACNP-BC; **Jaskaran Rakkar, BS**; Regina S. Medeiros, DNP, MHSA, CCRN; Colville H.B. Ferdinand, MD, FACS; Steven B. Holsten, Jr., MD, FACS; Christopher Hogan, MD; Michael L. Hawkins, MD, FACS; Keith F. O'Malley, MD, FACS; Saera Kim, BS; John D. Catravas, PhD. "Baseline Immunological Disparities in African American and Caucasian Trauma Patients". 2013 Society of Trauma Nurses Annual Conference. Las Vegas, NV.
  - **Jaskaran Rakkar, BS**; Saera Kim, BS; Elizabeth G. NeSmith, PhD, ACNP-BC. "Evaluation of Systemic Inflammatory Response Syndrome (SIRS) in increasing susceptibility to sepsis and organ failure following trauma in minorities". 2012 Medical Scholars Program. Augusta, GA.
  - **Jaskaran Rakkar, BS**; David V. LaBorde, MD; Jennifer M. Takesaka, MD; Steven D. Culler, PhD; Fadi B. Nahab, MD. "Risk Factors associated with 30-day readmission vary among stroke subtypes". 2012 American Academy of Neurology Annual Meeting. New Orleans, LA.
  - David LaBorde MD; **Jaskaran Rakkar, BS**; Nathaniel Bloodworth BS. "Time-trend analysis of patient transfers to a neurosurgical service at a tertiary care facility in the southeastern United States". 2011 Congress of Neurological Surgeons Annual Meeting. Washington, DC.
  - **Jaskaran Rakkar**; Nathaniel C. Bloodworth; David V. LaBorde, MD. "Retrospective analysis of the catchment area and referral trends for transfers to a neurosurgical service at a tertiary care facility in the southeastern United States". 2011 Georgia Neurosurgical Society Annual Spring Meeting. Sea Island, GA.
  - **Jaskaran Rakkar**; Klaus Mewes, PhD; Christine D. Esper, MD; Mahlon R. DeLong, MD; Robert E. Gross, MD, PhD. "Macrostimulation through the Microelectrode Guide Cannula During DBS Implantation". 2010 Biomedical Engineering Society Annual Meeting. Austin, TX.

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## COMMUNITY SERVICE

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- Pediatricians at the Capitol, 2017
- University of Arizona College of Medicine Annual Simulation Night, 2016
- Physical Diagnosis Substitute Teaching Assistant, 2014 - 2015
- Georgia Tech Mentor Jackets, 2013 - 2015
- Community Homeless Clinic, 2012 - 2015
- Hickey Alzheimer's Center Volunteering, 2013 - 2014
- Women's Clinic, 2013 - 2014

- Helping Hands Mental Health Clinic, 2012 - 2013
- Faith Care Clinic, 2012 - 2013

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## INTERESTS & SKILLS

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- Playing basketball, football and volleyball
- Contemplating inventions/innovations
- Data analytics: R, Matlab and Minitab
- Apple App Development: Swift Programing
- Language Fluency: English (Native), Hindi (Good), Punjabi (Good)