

RUKESH CHINTHAPATLA

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Resume

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EDUCATION

North Carolina State University, Raleigh, NC
B.S. Biochemistry | Biological Sciences – Human Biology
Minors: Biotechnology | Microbiology
Honors: *Magna Cum Laude* (GPA: 3.505)

Aug 2014 – May 2018

AWARDS AND HONORS

- Inaugural NC State & UNC Joint Department of BME Undergraduate Researcher of the Month Fall 2016
- NC State Chancellor's Innovation Fund Spring 2016

PEER-REVIEWED JOURNAL ARTICLES

- Rosell, A., Moser, B., Hisada, Y., **Chinthapatla, R.**, Lian, G., Yang, Y., ... & Mackman, N. (2020). Evaluation of different commercial antibodies for their ability to detect human and mouse tissue factor by western blotting. *Research and practice in thrombosis and haemostasis*, 4(6), 1013-1023. **(2020 IF: New Journal)**
- Cummins, B.M., **Chinthapatla, R.**, Ligler, F.S., Walker, G.M., (2017). Time-Dependent Model for Fluid Flow in Porous Material with Multiple Pore Sizes. *Analytical Chemistry* 89(8), 4377-4381. **(2016 IF: 6.32)**
- Cummins, B.M., **Chinthapatla, R.**, Lenin, B., Ligler, F.S., Walker, G.M., (2017). Modular pumps as programmable hydraulic batteries. *Technology*, 5, 21-30. **(2017 IF: New Journal)**
 - a. Featured on NC State News in Research and Innovation on March 8, 2017

PRESENTATIONS/CONFERENCE PROCEEDINGS/ABSTRACTS

- Rich, M.J., Mohd, O., **Chinthapatla, R.**, Sivashankar, S., Ligler, F.S., Walker, G.M. (2018, March). *Hydrodynamic Batteries for Microfluidic Devices*. Eurotrode XIV, Naples, Italy. (Poster)
- **Chinthapatla, R.**, Young, A., Sivashankar, S., Ligler F.S., Daniele M.A., Walker G.M. (2017, April). *Morphological Changes of HUVEC Under In Vitro Hemodynamic Conditions Using Modular Paper Pumps*. NCSU Undergraduate Research Symposium, Raleigh, N.C. (Poster)
- Cummins, B.M., **Chinthapatla, R.**, Lenin, B., Ligler, F.S., Walker, G.M., (2016). Design-to-order paper pumps for microfluidic devices. Biosensors 2016, Gothenburg, Sweden, May 25-27, Biosensors. (Oral Presentation by F.S. Ligler)
- Cummins, B.M., **Chinthapatla, R.**, Lenin, B., Ligler, F.S., Walker, G.M., (2016, March). *Shaped Paper Pumps for Microfluidic Devices*. Eurotrode XIII Conference on Optical Chemical Sensors and Biosensors, Graz, Austria. (Poster)
- Cummins, B.M., **Chinthapatla, R.**, Hentz, N.G., Yeh, J.J., Caddell, K.A., Hammett-Stabler, C.A., Husar, G., Lochhead, M.J., Ligler, F.S., Walker, G.M. (2015, June). *A Portable Diagnostic Test for Parathyroid Hormone for Use at the Point-of-Care*. 2015 Postdoctoral Research Symposium. Raleigh, N.C. (Poster, 1st Place Winner)

RESEARCH AND WORK HISTORY

Cameron-Arnold Lab, UNC School of Medicine, Department of Microbiol. & Immunol. August 2020 – Current
Research Technician, Advisors: Craig E. Cameron (Dept. chair), Jamie J. Arnold

- Researching SARS-CoV-2. Current work includes cloning, expression, purification, biochemical and biophysical assays to study core replicase and its sub-assemblies, utilization of incorrect nucleotides and nucleotide analogues, and the mechanism of error correction by the exoribonuclease.
- Future work includes optimizing microfluidic platform to study single-cell virology and viral infection dynamics

Mackman Lab, UNC School of Medicine, Department of Medicine June 2019 – March 2020
Research Technician, Advisor: Nigel Mackman

- Improving in-house extracellular vesicle tissue factor activity (EVTF) assay using a viscoelastic based microfluidic device to separate EVs based on size (Nov. - Mar.)
- Using Emulate Bio's "Blood Vessel-Chip" to determine what mediates binding of the labeled EVs to activated endothelium and how the EVs enhance fibrin deposition on activated endothelium using plasma (Feb. - Mar.)
- Determining TF expression in mouse neutrophils using genetic and pharmacological approaches (Nov. - Mar.)
- Validation of commercial anti-Tissue Factor (TF) antibodies for Western Blotting (Aug. - Jan.)
- Determine Mechanism by which Rivaroxaban Reduces Atherosclerosis in LDLR^{-/-} Mice (Jul. - Oct.)
- Industrial contracts: Measurement of EVTF activity in canine plasma for Larimar Therapeutics, Inc. (Oct.)
- Collaborations and other include: Effect of low TF mice on bone strength (OSHU), Investigating characteristic distinctions in platelet derived exosomes and EVs (Pitt), Hematopoietic cell tissue factor drives diet-induced obesity in mice (Cincinnati), and Measuring procoagulant EVTF activity in various cancer patients

Surgical Assistant Externship, Triangle Implant Center (Durham, NC) January 2019 – June 2019

- Manually supported the patient's airway during the surgery while simultaneously monitoring vital signs
- Set up surgical trays for full array of oral surgical procedures including extractions, implant delivery, jaw fractures, biopsies, etc. and sterilized instruments and trays
- Review post-operative instructions with patient's chaperone; escort patients post-sedation surgery to vehicle; maintain laundry and ensure fresh gowns are always available, and clean and restock rooms

Division of Clinical Trials, UNC School of Medicine, Department of Emergency Medicine January 2017 – May 2019
Volunteer Clinical Research Assistant, Advisor: Eugenia B. Quackenbush

- Assisted in conducting clinical trials by utilizing electronic medical records (EPIC) to screen for potential patients before visiting them to brief them on the study and ask for their consent to be enrolled
- Trials included: a pilot study for Redbud Labs, a UNC spin-off medical device startup using microfluidics, comparison of heart failure risk prediction tools in the ED (Feasibility Study) and VIOLET (Phase III)

Walker Lab, NC State & UNC Chapel Hill, Joint Department of Biomedical Engineering April 2015 – May 2018
Undergraduate Researcher, Advisors: Frances S. Ligler, Glenn M. Walker

- Developing paper pump powered microfluidic device to culture cells within incubator (2017-2018)
- Improving sensitivity and assay duration for a point-of-care diagnostic to quantify intraoperative parathyroid hormone levels in whole blood using paper pump technology (2016-2017)
- Developing a mathematical model for fluid flow in porous media with multiple pore sizes (2015-2017)
- Developed a programmable, passive pumping technology for microfluidic devices (2015-2016)
- Generated data that was crucial for winning prestigious Chancellor's Innovation Fund (\$75,000 grant)
- Received press releases and met with venture capitalists and investors for potential to license technology

LEADERSHIP/EXPERIENCE

Chief Executive Officer, RTP CPR Training Solutions, LLC (Raleigh, NC) May 2017 – May 2018

- Member, Board of Directors and Co-founder/owner. Certified Emergency Medical Technician (EMT), American Heart Association (AHA) Training Center Faculty Member, and AHA BLS/Heartsaver Instructor
- Established an AHA certified training site, personally recruited 16+ instructors (ranging from freshmen to an E.D. RN at UNC), and contributed most hours and ideas to the startup
- Secured contract with Habitat for Humanity of Wake County (3rd largest affiliate) as their CPR/AED/First Aid provider and taught Basic Life Support (BLS) to new homeowners pro bono
- Arranged instructors to teach the largest hands only CPR class of 175 athletes at Duke University as a member of Campus CPR Collegiate EMS Faculty (with: Wake Forest, MIT, Tufts, Duke, and more)

Technical Lead, CRAASH Course at CIMIT (Boston, MA) May 2016 – August 2016

- Commercialization Readiness Assessment and Accelerator for Solutions in Healthcare (CRAASH) course
- Focused on available technology options, requirements and architectural issues
- Interacted with a panel of experts by presenting and defending findings, attending lectures, and completing readings. Worked with accomplished industry veterans in close collaboration
- Conducted discovery interviews (100+) across key stakeholders focused on healthcare providers to understand needs and test hypotheses. Developed and validated value propositions and business models. Defined "killer" questions and experiments and created pitches to target funders

Teaching Assistant, Student Organizations and Other

- **Treasurer**, Habitat for Humanity at NC State (Aug. 2017 - May 2018)
- **Learning Assistant**, NC State Department of Physics & Department of STEM Education (Aug. - Dec. 2015)
- **Freshmen Representative** (Member, Executive Board), EKTA at NC State (Aug. 2014 - May 2015)
- **Tennis Instructor**, Self-employed (2012 - 2015)

SKILLS

- Research skills include: bacterial and mammalian cell culture, protein purification, manipulation of DNA, biochemical assays, molecular cloning, electrophoresis, paper microfluidics, microfluidic channel design, microfluidics device fabrication, photolithography, tissue harvesting, mouse handling and colony maintenance
- Excellent written and verbal communication skills, strong at problem solving, team player and adaptable
- Languages: English (fluent), Telugu (native)

REFERENCES

Frances S. Ligler, D.Phil., D.Sc.
Lampe Distinguished Professor
Department of Biomedical Engineering
UNC Chapel Hill & NC State University
fsligler@ncsu.edu

Glenn M. Walker, PhD
Professor
Department of Biomedical Engineering
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Associate Director, Blood Research Center
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