

UDAY CHINTAPULA

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EDUCATION

The University of Texas at Arlington

Doctor of Philosophy in Bioengineering, *Outstanding graduate student award*

PhD advisor: Dr. Kytai Nguyen

Thesis: Nanofiber-nanoparticle nanocomposites for enhanced cellular drug delivery

Arlington, TX

08/16-05/22

Southern Illinois University

Master of Science in Biomedical Engineering

Carbondale, IL

08/12-05/15

Jawaharlal Nehru Technological University

Bachelor of Technology in Biotechnology

Hyderabad, India

08/06- 05/10

POSITIONS HELD

Postdoctoral Researcher

University of Pennsylvania, Penn Medicine

Philadelphia, PA

07/22 – Present

STEM Graduate Teaching Assistant/Instructor

The University of Texas at Arlington

Arlington, TX

08/18 – 05/22

Cofounder & Scientific advisor

Active Biomed LLC

Arlington, TX

05/23-Present

PUBLICATIONS

- Under Rev. **Uday Chintapula**, Shujing Liu, Fernandez Andres, Yoonho Roh, Xiaowei Xu, Jina Ko, "Microfluidic platform for generation of EV hybrids to treat cancer"
- Under Rev. Jianhua Lim, Daniel Oh, Makayla Cheng, **Uday Chintapula**, Shujing Liu, David Reynolds, Xiaogang Zhang, Xiaowei Xu, Jina Ko, "Enhancing Plasmid DNA Delivery for CAR-T Cell Generation via Microfluidic Mechanoporation and Lipid Nanoparticles".
- Under Rev. Yoon Ho Roh*, Renee-Tyler T. Morales*, Emily Huynh, **Uday Chintapula**, David E. Reynolds, Renis J. Agosto Nieves, Daniel Oh, Akari J. Seiner, Jianhua Lim, Christopher B. Rodell, Jina Ko, "Squeezable Hydrogel Microparticles for Single EV Protein Profiling". [Small](#)
- 2024 **Chintapula U**, S Karim, Iyer P, Nepune B, Bai F, Nguyen KT, "Nanocomposites loaded with RDV as a drug delivery system against SARS-CoV-2 infections". [RSC Nanoscale advances](#), (Selected as Journal Front Cover) (Highlighted as popular advance paper)
- 2024 **Chintapula U**, Oh Danny, Cristina Perez, Sachin Davis, Stanger B, Ko Jina, "Anti-cancer effects of Sweet Basil Plant derived EVs to treat pancreatic cancer", [Journal of Extracellular Biology](#)
- 2024 Yaman S, Ramachandramoorthy H, Priyanka I, **Chintapula U**, Nguyen T, Sabnani M, Kotadia, T, Pop L, Hannan R, Weidanz JA, Nguyen KT, "Targeted Chemotherapy via HER2-based chimeric antigen receptor (CAR) engineered T-cell membrane coated polymeric nanoparticles", [Bioactive](#)

Materials. (Featured in **EurekAlert! Medical Xpress, SciTechDaily, Pharmacytimes & other news outlets, CPRIT grant \$250,000 awarded**)

- 2024 D.E. Reynolds, J. Lim, Y. Roh, **U. Chintapula**, RT. Morales, D. Oh, J. Ko. "Droplet and Digital Microfluidics: Ideation to Implementation", Elsevier, Book Chapter
- 2023 D.E. Reynolds, P. Vallapureddy, RT. Morales, D. Oh, M. Pan, **U. Chintapula**, R. L. Linardi, A. M. Gaesser, K. Ortved, J. Ko. "Equine mesenchymal stem cell derived extracellular vesicle immunopathology biomarker discovery", Journal of Extracellular Biology
- 2023 **Chintapula U**, Chikatee T, Sahoo D, Amie K, Guerrero Rodriguez D I, Nguyen KT, Trott DW; "Immunomodulation in aging-related diseases and nanotechnology interventions", WILEY Bioengineering and Biotechnology Journal
- 2022 **Chintapula U**, Yang S, Nguyen T, Yang Liu, Dong H, Nguyen KT, Supermolecular Peptide Nanofiber/PLGA Nanocomposites for Enhancing Pulmonary Drug Delivery", ACS Applied Materials and Interfaces (Featured as Journal Cover)
- 2022 Weike Chen; Shan Hazoor; Ryan Madigan; Ashley A Adones; **Uday K Chintapula**; Kytai T Nguyen; Liping Tang; Frank W Foss," Alkaline-Responsive Polydiacetylene-Peptide Hydrogel for pH-Sensing and On-Demand Antimicrobial Release", Material Today Advances
- 2022 H. Asokan-Sheela, S. Yang, A. A. Adones, W. Chen, B. B. Fulton, **Uday K Chintapula**, K. T. Nguyen, C. J. Lovely, C. A. Brautigam, K. Nam, H. Dong, "Self-assembling Peptides with Internal Ionizable Unnatural Amino Acids: A new and General Approach to pH-responsive Peptide Materials", Chemistry an Asian Journal
- 2022 Messerschmidt VL, **Chintapula U**, Laboy S, Bonetesta F, Naderi A, Nguyen KT, Cao H, Mager E, Lee J, "In vivo evaluation of non-viral NICD plasmid loaded PLGA nanoparticles in developing zebrafish to improve cardiac functions", Frontiers in Physiology
- 2021 Messerschmidt VL, **Chintapula U***, Kuriakose AE, Laboy S, Truong TTD, Kydd LA, Jaworski J, Pan Z, Sadek H, Nguyen KT and Lee J, "Notch Intracellular Domain Plasmid Delivery via Poly (Lactic-Co-Glycolic Acid) Nanoparticles to Upregulate Notch Pathway Molecules", Frontiers in Cardiovascular Medicine
- 2020 Yaman S, **Chintapula U***, Rodriguez E, Ramachandramoorthy H, Nguyen KT, "Cell-mediated and cell membrane-coated nanoparticles for drug delivery and cancer therapy", Cancer Drug resistance
- 2020 **Chintapula U**, Iqbal S, Kim YT, "A compendium of single-cell analysis in aging and disease", AIMS Molecular Science

PATENTS

- 2022 Nanocomposites for enhanced cellular payload delivery
U.S. Provisional App No. 63/413, 102
- 2024 Hydrogels/Nanoparticle composites for pain medication delivery

PRESENTATIONS

- 2024 **Invited Speaker** at Center for Innovation & Precision Dentistry, "Developing Targeted Cancer Treatments with Microfluidic-Engineered Natural Vesicles"
- 2024 "Gene Therapy using Nanoparticles" Invited **Guest lecture** University of Texas at Arlington

- 2024 "Innovative chemotherapy approach shows promise against lung cancer", press release by EurekaAlert!, Medical Xpress, Scienmag, Pharmacy Times, World Pharma News, Bioengineer.org.
- 2023 Selected and presented for NIH Innovator to Entrepreneur program (ITEP) for the commercial translation of "Nanocomposites for inhalation treatment of Lung infections"
- 2023 Semi-final presentation of Targeted immunotherapy at Nucleate accelerator program
- 2022 "Drug Delivery using nanocomposites for treatment of COVID-19", Oral Presentation at BMES 2022 Annual Meeting.
- 2022 "Nanocomposites for drug delivery to treat MRSA bacterial infection ", Oral presentation at BMES 2022 Annual Meeting
- 2022 "Assessing Local Delivery Capability of a Novel Septal Ablation System via an Ex Vivo Pig Heart Model", Poster presentation at Summer Biomechanics, Bioengineering, and Biotransport Conference, Maryland.
- 2022 "Nanoparticle targeting E-CAM1 in atherosclerosis from age0related cardiovascular disease", Poster presentation at BMES 2022 Annual Meeting.
- 2022 "Development of Injectable nanocomposite hydrogels for stimuli responsive pain medicine delivery" University of Texas at Arlington Innovation Day.
- 2022 "Biomechanical and Microstructural Characterization of Human Healthy and hypertrophic Septal Tissues" Poster presented at Summer Biomechanics, Bioengineering, and Biotransport Conference.
- 2021 "Development of Lipid-based nanoparticles to treat SARS-CoV-2 lung infections in vitro" Poster presentation at Social Connection Conference, Texas.
- 2020 "Nanoparticle-mediated controlled myocardial Delivery for hypertrophic cardiomyopathy" poster presentation at BMES 2020 Annual Meeting. (**NIH R15 \$433,000 awarded**)
- 2020 "Invited Expert Opinion article on media for future of Biotechnology", Collaborative Drug Discovery, USA.
- 2020 "Development of nanoparticles to treat lung infections via delivery of antibiotics" Poster presentation at BMES 2020 Annual Meeting.

SKILLS

- Prototyping:** Soft Lithography, Laser Micromachining, 3D Printing, Various cleanroom and material deposition techniques (Wire bonding, Physical/Chemical vapor evaporation, Sputtering, Profilometer), electroplating, microfluidic device design
- Programming:** LabVIEW, MATLAB,
- Lab Skills:** **Biophysical characterization techniques:** Dynamic light scattering, Electron microscopy (TEM, SEM) DLS, Fluorescence microscopy, Infrared spectroscopy (FT-IR, Raman), DSC, Thermophoresis, Flow-based techniques (Flow cytometry, perfusion flow systems, later flow assay)
Biochemical characterization techniques: Genetic engineering (cloning, gel electrophoresis, PCR, RT-PCR), Western Blotting, ELISA, Histology, Immunohistochemistry.

Animal work: IACUC protocol design, sterile necropsy of rats and mice, xenotropic mice tumor model, retroorbital/intravenous/intramuscular injections, and pharmacokinetics of nanoformulations in mice.

Computer: ImageJ, Cell Profiler, SOLIDWORKS, AUTOCAD, Adobe Photoshop, Adobe Illustrator, Microsoft Office

Language: English (Superior), Telugu (Superior), Hindi (Superior), Tamil (beginner), Spanish (beginner)

LEADERSHIP/ VOLUNTEER/WORKING EXPERIENCES

2024	Invited Judge at IDEAL (Inclusion, Diversity, Equity, and Learner) research poster session at <i>University of Pennsylvania</i>
2022-2024	Reviewer for <i>BMES Annual Meeting</i>
2021-present	Editorial board Reviewer for <i>Frontiers in Biomaterials</i>
2023	Project Manager at <i>Penn Graduate Consulting Club</i>
2022- present	Reviewer for <i>MDPI Journals</i>
2022	Invited chair for Biomaterials and Drug Delivery sessions at BMES 2022 Annual Meeting
2024	Invited Guest Editor for <i>Frontiers in Bioengineering and Biotechnology</i>
2019-2021	Judge for Dallas Regional Science Fair
2018-2022	Judge and Chair at Fort Worth Regional Science Fair
2018,2021-22	Judge for graduate/undergraduate Innovation Day at University of Texas at Arlington
2020-2022	Senior Design Group Mentor, REU mentor, McNair Scholar mentor, University of Texas
2020-2021	Drug Delivery Lab instructor and development of course syllabus.
2016-2021	American Red Cross, Disaster program volunteer

HONORS/SCHOLARSHIPS

2022	R15 NIH award of \$433,000 for one of my PhD works of “Targeted nanoparticle for Cardiac Hypertrophy research
2016, 2018	Dr. Franklyn Alexander Scholarship for <i>Outstanding students</i>
2022	University of Texas Bioengineering Department <i>academic excellence</i> award
2019	<i>Mentoring Award, I-engage</i> from University of Texas
2020-2021	Undergraduate REU award and mentoring
2022	UTA innovation Day honor prize for <i>Nanoparticles for pain medication</i> poster
2022, 2024	Thesis Article published in journal front cover in American Chemical Society and Royal Society of Chemistry
2023-2024	Member of Society of Biomaterials

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