UDAY CHINTAPULA, PhD, MRSC

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SUMMARY

Bioengineering scientist with expertise in drug delivery and pharmacology, advancing EV–LNP hybrids and membrane-coated nanoparticles for infectious disease, cancer, aging and neuropharmacological therapeutics. My work integrates chemical biology, drug delivery, and translational nanomedicine to address fundamental pharmacological questions.

EDUCATION

The University of Texas at Arlington **Arlington, TX**
Doctor of Philosophy in Bioengineering, *Outstanding graduate student award* 08/16-05/22
PhD advisor: Dr. Kytai Nguyen
Thesis: Nanofiber-nanoparticle nanocomposites for enhanced cellular drug delivery

Southern Illinois University **Carbondale, IL**
Master of Science in Biomedical Engineering 08/12-05/15

Jawaharlal Nehru Technological University **Hyderabad, India**
Bachelor of Technology in Biotechnology 08/06- 05/10

POSITIONS HELD

Postdoctoral Researcher, **Philadelphia, PA**
University of Pennsylvania, Penn Medicine 07/22 – 06/25

Cofounder and Scientific Advisor, **Philadelphia, PA**
Bioterra LLC 07/25-Present

Cofounder & Scientific Advisor, *Nucleate Accelerator Semi-finalist & NIH ITEP cohort 2024* **Arlington, TX**
Active Biomed LLC 05/23-Present

STEM Graduate Teaching Instructor/ Research Assistant **Arlington, TX**
The University of Texas at Arlington 08/18 – 05/22

PUBLICATIONS: *19 published, 4 in preparation*

In Prep Uday Chintapula, Harish Ramachandramoorthy, Deepsundar Sahoo, Tringh Nguyen, Na Nguyen, Tam Nguyen, Luis-Soto Garcia, Kytai Nguyen," Inhalation of Nanofiber-coated Nanoparticles for Enhanced Intracellular Delivery of Antibiotics for MRSA Lung Infection Treatment *in vivo"*

2025 Deepsundar Sahoo, Edger Rodrigues, Kytai Nguyen, **Uday Chintapula**, "Probiotics as Drug Delivery Systems: design considerations and challenges "ACS Applied Biomaterials

2025 **Uday Chintapula**, Shujing Liu, Fernandez Andres, Jianhua Lim, Yoonho Roh, Renee Tyler Morales, Mark Sellmeyer, Xiaowei Xu, Jina Ko, "Droplet Squeezing Microfluidic Platform for Generation of Extracellular Vesicle Hybrids as Drug Delivery Systems". Small

2025 Copeland Katherine M. , Chen Houjia , **Chintapula Uday** , Almasian Milad , Chung Duc Khang , Taylor Alan M. , Ding Yichen , Sharma Gaurav , Jessen Michael E. , Hong Yi , Nguyen Kytai T. , Peltz Matthias , Bajona Pietro , Liao Jun, "Deteriorated biomechanical properties of human hypertrophied septum in response to cardiomyocyte enlargement, overexpressed collagen, and disarrayed microstructures", Frontiers in Bioengineering and Biotechnology

2025 David E. Reynolds*, Yoon Ho Roh*, **Uday Chintapula**, Emily Huynh, Phoebe Vallapureddy, Hong Huy Tran, Daeyeon Lee, Mark G. Allen, Xiaowei Xu, and Jina Ko," Vertically Aligned Nanowires for Temporal Profiling". ACS Nano

2025 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". Small

2024. 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-Sheeja, 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

2025 Droplet Microfluidics platform for generating EV-LNP hybrid drug delivery systems, U.S. Provisional App No. 63/838,146

2024 Hydrogels/Nanoparticle composites for pain medication delivery, IP submitted

2022 Nanocomposites for enhanced cellular payload delivery
U.S. Provisional App No. 63/413, 102

SELECTED PRESENTATIONS

2025 Invited for *Start Talking Science* presentation at Science History Institute at Philadelphia

2024 Invited Speaker at UPenn Center for Innovation & Precision Dentistry, "Developing Targeted Cancer Treatments with Microfluidic-Engineered Natural Vesicles"

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"

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 "Nanoparticle targeting E-CAM1 in atherosclerosis from age-related cardiovascular disease", Poster presentation at BMES 2022 Annual Meeting.

2020 "Invited Expert Opinion article on media for the future of Biotechnology", Collaborative Drug Discovery, USA.

MENTORING and TEACHING

2019-2021 Mentored undergraduate and graduate students in drug delivery and pharmacology research; several presented at BMES/NIH meetings

2020-2022	Drug Delivery Lab Instructor for graduate and undergraduate students (> 120 students), involving hands-on synthesis of various nanoparticle formulations and case studies.
2020-2022	Senior Design Group Mentor, REU mentor, McNair Scholar mentor, UT Arlington
2020-2021	Undergraduate REU award and mentoring.

LEADERSHIP/ VOLUNTEER EXPERIENCES

2025	Editorial board member, BMC Biomedical Engineering, Springer Nature
2024	Invited Judge at IDEAL (Inclusion, Diversity, Equity, and Learner) research session at the *University of Pennsylvania*
2022-2024	Reviewer for *BMES Annual Meeting*
2021-present	Editorial Board Reviewer for *Frontiers in Biomaterials*
2023	Project Manager at *Penn Graduate Consulting Club*
2022- present	Reviewer for *MDPI Journals*
2022	Invited chair for Biomaterials and Drug Delivery sessions at BMES 2022 Annual Meeting
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 the UT Arlington
2020-2021	Drug Delivery Lab instructor.
2018-2021	American Red Cross, Disaster Program volunteer

HONORS/SCHOLARSHIPS

2025	Peer-Reviewed Member of the Royal Society of Chemistry (MRSC)
2025	Sigma Xi member
2022, 2024	Thesis research published on the journal front cover in the American Chemical Society and the Royal Society of Chemistry
2022	R15 NIH award of $433,000 for one of my PhD works of “Targeted nanoparticle for Cardiac Hypertrophy research (awarded to PI: Jun Liao), and a CPRIT award of $250,000 awarded for cancer research (awarded to PI: Kytai Nguyen).
2016, 2018	Dr. Franklyn Alexander Scholarship for *Outstanding Student*
2022	University of Texas Bioengineering Department *academic excellence* award
2019	*Mentoring Award, I-engage* from the University of Texas
2022	UTA Innovation Day honor prize for the *Nanoparticles for pain medication* poster

Website: http://udaychintapula.com