Nishil N. Desai, B.E. (Chem.), Ph.D.

Boston, Massachusetts • (770) 354 3906 • n.desai@northeastern.edu

PROFILE - VISION AND STRATEGIES FOR ACCELERATING PERFORMANCE

- Result oriented, well-organized professional experienced in working with diverse population and environment.
- Proficient in engaging professional and graduate students with different active learning strategies in classroom and evaluating their performance.
- Expertise in incorporating various technologies in classroom and to facilitate effective learning virtually.
- Quick learner with interest and aptitude for technology.
- Exceptional interpersonal and communications skills, with proven ability to work autonomously and effectively with interdisciplinary teams at all levels within and outside organizations.
- Self-motivated with good problem-solving skills and ability to juggle multiple projects simultaneously while aggressively maintaining timelines without compromising quality.
- Recognized for creativity, productivity, leadership, team building, motivating, managing resources, and commitment to the success of projects.
- Experience in publishing and presenting scientific work.

EDUCATION

- Doctor of Philosophy, **Ph.D.** (Pharmaceutical Sciences), Mercer University, Atlanta, Georgia.
- Bachelor of Engineering, **B.E.** (Chemical Engineering), Manipal University, India.

APPOINTMENTS

12/2018 – Present	**Associate Professor,** Department of Pharmaceutical Sciences, Northeastern University, Boston, Massachusetts.
2017 - 2018	**Medical Writer/Editor**, Independent contractor, working on CDC and Industrial projects, Atlanta, Georgia.
2016 – 2017	**Assistant Professor of Pharmaceutics/Pharmacokinetics**, Dept. of Pharmaceutical Sciences, College of Pharmacy, Larkin University, Miami, Florida.
2010 – 2016	**Assistant Professor of Pharmaceutics/Pharmacokinetics**, Dept. of Pharmaceutical Sciences, School of Pharmacy, Texas Tech University HSC, Abilene, Texas.
2008 – 2010	**Senior Scientist**, Altea Therapeutics, Atlanta, Georgia.
2007 – 2009	**Scientist**, BioTrans Pharma, Johns Creek, Georgia.

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AWARDS

2022 **Bouvé Distinguished Educator Award for Teaching**
Northeastern University, Boston (nominated)

Advisor of the Year by Center of Student Involvement
2021 Northeastern University, Boston

2014 **Best P1 Pharmacy Teaching Team Award**, Texas Tech University HSC, School of Pharmacy, Texas.
2014 **Best Student Advocate Award, for P1 students** Texas Tech University HSC, School of Pharmacy, Abilene, Texas
2013 **Best P1 Pharmacy Teaching Team Award**, Texas Tech University HSC, School of Pharmacy, Texas.
2012 **Winner at Student Pharmacist Compounding Competition**, Texas Tech University HSC, School of Pharmacy, Texas.

PROFESSIONAL EXPERIENCES

NORTHEASTERN UNIVERSITY, Boston, Massachusetts (2018 – Present)
ASSOCIATE PROFESSOR Department of Pharmaceutical Sciences

Teaching:

- Pharmacokinetics & Biophamaceutics (Course coordinator)
- Pharmaceutics including compounding lab (Course coordinator)
- Pharmacology & Medicinal Chemistry (Co Cordinator)
- Drug Development & Translational Medicine (Course coordinator)

Service:

- Faculty Council (Bouve College wide Committee)
- Admission Committee (School of Pharmacy & Pharmaceutical Sciences)
- Assessment Committee (School of Pharmacy & Pharmaceutical Sciences)
- Research Showcase (Department of Pharmaceutical Sciences)
- Scholarship & Award Committee (School of Pharmacy & Pharmaceutical Sciences)
- Faculty workload Committee (Department of Pharmaceutical Sciences)
- Faculty Search Committee **Chair** (Department of Pharmaceutical Sciences)

<u>Advising</u>

- Portfolio Advising for Pharm D students
- Faculty Adviser Kappa Psi - professional pharmacy organization
- Faculty Adviser NU Sanskriti - graduate student organization

MEDICAL WRITER/EDITOR, Atlanta, Georgia (2017 – 2018)

- Independent contractor, working on CDC and Industrial regulatory projects

  - Involved in addressing the concerns and comments by faculties during the town hall meeting
- Involved in preparing and assisting the documents needed for ACPE site visit, participated in individual and committee meeting during the site visit with the accreditors
- Assisted in preparing and review of documents needed for SACS accreditation.
- Faculty Search Committee (Department of Clinical & Administrative Sciences – DCAS)
  - Revised rubric for evaluating candidates
  - Revised criteria for candidate evaluation (telephone & onsite)
  - Participated in interviews and assisted in facilitating the candidates during, before and after interviews
- DCAS Chair Search Committee
- Faculty Search Committee (Department of Pharmaceutical Sciences)
- Research Advisory Committee:
  - Developed guidelines for conducting research
  - Developed guidelines for disposing biohazard waste
  - Developed guidelines for involving students in research
  - Implemented OSHA guidelines for getting approval for conducting in house research
  - Arranged meeting with vendors and obtaining quotation for basic utilities and advance equipment
  - Proposed plans for expansion and installation of new facility and instruments
- Library Advisory Committee
  - Developed policy procedure and forms for obtaining intralibrary loan materials
  - Obtained approval for the use of database license like Lexicomp for students to be used on rotations and for faculties
  - Initiated collaboration with South Florida libraries that amounted to sharing the resources and facilities for students and faculties
- Participated in interviewing prospective students (> 95% participation) and entered results in PharmAcademic
- Responsible for developing worksheets and problems along with solutions for preceptors and students

Research:

- Responsible in involving Pharm.D. and Biomedical students in research
- Developed connections with the area universities for research collaborations

TEXAS TECH UNIVERSITY SCHOOL OF PHARMACY, Abilene, Texas (2010 – 2016)
ASSISTANT PROFESSOR OF PHARMACEUTICS/PHARMACOKINETICS
Teaching:

- Pharmaceutics: Drug Delivery System – I (Team leader)
- Pharmaceutics: Drug Delivery System – II (Team leader)
- Pharmaceutics: Drug Delivery System – III
- Basic Pharmacokinetics (Co Team Leader)
- Clinical Research & Literature Evaluation (Co Team leader)
- Non-Sterile Compounding Laboratory (Team leader)
- Parenteral Compounding Laboratory (Team leader)

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- Case Studies I - PBL (Team leader)
- Anatomy and Physiology, I & II (with lab)
- Pharmacotherapy: Neurosensory and Psychiatry
- Pharmacotherapy: Clinical Toxicology
- Pharmacotherapy: Bone & Joint
- Advance Compounding – elective (Team leader)
- Veterinary Pharmacy – elective
- Stress, diet and disease – elective
- Journal Club – elective
- Base Camp for incoming students
- Taught stand-alone topics like Pharmaceutics and Pharmacokinetics using flipped classroom approach to achieve better student understanding and engagement
- Increased student faculty interaction via use of technology in courses using technologies like Top Hat, Sakai, Microsoft Lync, Polycom, and Blackboard
- Conducted survey of preceptor's sites and rearranged course contents to make the students more practice ready
- Designed special electives and APPE rotations for P3 & 4 students in which the students design and evaluate formulations stability & performance of products using advance instrumentations; also incorporated IPE activities in conjunction with physicians and nurses
- Coordinated and mentored Pharm.D. summer research projects for students in Abilene campus
- Mentored students in selecting and researching topics and reviewing their presentation for Grand Rounds
- Used web-based apps to capture student response and to educate them on the subject matter

Service

- Student Learning & Assessment Committee
    - Worked on PCOA, HRDKA & other assessments to define and develop standards for student evaluation and success
    - Collected list of drugs used by the preceptors to compile list of top 200 drugs for internal usage
    - Audited current school standards and mapped it with 2016 standards and recommended the strengths and shortfalls to the executive committee
    - Developed criteria for Co-curricular and IPE activities
    - Involved in curricular mapping of learning objectives to internal and ACPE standards
- Continuation Education Committee
    - CE speaker for drug review courses (antiviral, antiretroviral, antifungal, and Diabetes)
    - Conducted CE courses for technicians and pharmacist in sterile and non-sterile compounding
    - Reviewed and critically evaluated presentations for speakers
    - Proposed new speakers to meet the needs of program
- Intraprofessional Education & Ad Hoc Simulation Committee
    - Worked on development of IPE projects in collaboration with healthcare professionals from university system and community

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    - Incorporated simulation activities in courses using Anatomage table/free Apps
- Student Success Initiatives committee
    - Mentored academically struggling students that were identified by team and student affairs committee
    - Assisted students in making plan for success and tracked their progress
- Assisted, developed and reviewed self-study materials and documents needed for accreditation, and participating in ACPE site visit (two times)
- Member of Departmental committee responsible to recruit faculties
- American Association of College of Pharmacy:
    - Delegate 2014
    - COS Accreditation Best Practices committee 2014-15
    - Pharmaceutics Section Bylaws review committee 2014
- Conducted curriculum audit to assess the Sex & Gender involvement in curriculum (recruited student champions for the project)
- Panel member for interviewing prospective students (> 95 % participation)
- Worked with student and administration to set up talent display events during prospective student interviews
- Reviewed student resumes and provided them necessary feedback
- Participating in health fairs and medicine cleanout events
- Conceptualized, designed and participated in various IPE activities with other healthcare professionals to benefit students in several courses and labs
- Involved in designing education tools that are used educate healthcare professionals about Sex & Gender in medicine
- Directed Raider Red Summer Camp - Increased community involvement in the SOP by offering Summer Camp for high school students
- Held meeting and wrote proposals for involving community leaders to fund and participate in joint activities at SOP

Research

- Conducted stability on extemporaneous compounded drug products
- Formulation and Drug Delivery of drugs for sustained release
- Developed Nano particles for drug delivery and targeting of anticancer drugs
- Pharmacokinetic analysis of preclinical and clinical drug trials
- Sex and Gender based research and content development
- Responsible for initiation of joint research projects with practice faculties.
- Collaborated with other area universities for joint projects involving students' participation

ALTEA THERAPEUTICS, Atlanta, Georgia (2008 – 2010)
SENIOR SCIENTIST

- Conducted studies to design novel pre-clinical and clinical formulations for Eli Lilly, Hospira, GSK, BMS and other pharmaceutical companies using combinations of polymers for sustained release of proteins, peptides, small molecules and carbohydrate to achieve desired pharmacokinetic profile

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- Developed models for predicting release of drugs from vehicles and establishing in vitro and in vivo correlations for the formulations
- Evaluated various strategies to improve bioavailability of the drug product
- Performed pre-formulation, excipient screening and compatibility, stability studies and device testing
- Developed and modified methods for conducting dissolution studies and extraction of drug from vehicles and biological fluids
- Designed and conducted studies required for regulatory documents and assisting in transfer of optimized formulations to cGMP manufacturing
- Coauthored/amended documents needed by various regulatory agencies
- Analyzed data using statistical packages and interpreted it; made presentations and interacted with clients and senior management on regular basis to give brief and detailed update on projects, assessing future requirements, and recommended new studies and projects to increase the revenue pipeline
- Collaborated with different departments to troubleshoot stability, dissolution, process, and analytical development issues

BIOTRANS PHARMA, Johns Creek, Georgia (2007 – 2009)
SCIENTIST

- Conducted experiments for formulating drugs in polymeric and adhesives vehicles for sustained release. Performed release studies and modeled release, checked stability and compatibility, developed and validated stability indicating assays and determined formulation performance
- Studied drug permeation through skin for drug agents by manipulating physicochemical properties
- Conducted processing, freeze-thaw, pH dependent stability and storage studies for biologic molecules and correlated physical and chemical stability with applied stress
- Developed high throughput screening tools for characterizing stability of protein formulations used microscopy (stereo & cryo electron)

SKILLS AND COMPETENCIES

Analytical Skills

- Working experience in quantification and characterization of polymers, proteins, small molecules, powders and other chemicals with different analytical techniques like DSC, microcalorimetery, TGA, DLS, UV- Vis, IR (NIR, FTIR), CD, fluorescence spectroscopy, Karl Fischer, Electrophoresis (SDS – PAGE, IEF, and CE), laser diffraction, vapor sorption and X-ray crystallography
- Experienced in developing, optimizing, and validating methods for chromatography systems such as TLC, GC, and HPLC (RP, SEC, and IEX) with different detectors for analysis of drugs, impurities, degradation products, chemicals, and residual solvents
- Proficient in developing methods for drug quantification in using ELISA and RIA.
- Experience with confocal, scanning electron, cryo electron and stereo microscopy

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- Knowledge of separating drugs from biologic fluids using solid phase extraction and LC-MS

Engineering Skills

- Good working knowledge in optimization, troubleshooting and maintenance of different unit operations involving distillation, filtration, crystallization, drying (lyophilization, fluid bed, spray), granulating, coating, tablet punching, centrifuging, mixing, and blending
- Experience transferring products from pilot plant to commercial scale, and troubleshooting process work as well as conducting failure analysis
- Well versed in conducting heat and mass balance work, developing thermodynamic and kinetic models, and applying dimensional analysis principles
- Experience in designing, installing, qualifying and validating equipment's, supporting trials, generating and reviewing process flow sheet and P&I diagrams

Software Skills

- Proficient in Statgraphics (DOE), GraphPad Prizm, SigmaPlot, WinNonlin, Matlab, Adobe Photoshop, Zeiss Image, Refworks, SolidWorks, Microsoft Office Suites and Project
- Chromatography: Empower, ChemStation and TotalChrome.

Documentation Skills

- Well versed in interpreting and reviewing different regulatory guidelines (FDA, cGMP, cGLP, cGCP, USP, ICH, EPA, ISO, and IACUC), and responding to regulatory query
- Experienced in writing research notebook, experimental procedures and findings, proposals, research reports, progress reports, SOPs, and grants
- Experience in publishing, presenting, defending and critically evaluating scientific data

Courses and Training Sessions

- Optimizing Your Study Data Submission to FDA (07/17)
- AACP teachers conference 2011 & 13.
- AAPS Biotec Open Forum on Aggregation of Protein Therapeutics.
- AAPS conference for Product Development using QbD approach.
- Thermo Fisher Scientific method development using NIR, and FTIR.
- Agilent Technologies in method development using CE.
- Waters for method development using UPLC.

Professional Affiliations

- American Association of College of Pharmacy (AACP)
- American Association of Pharmaceutical Scientist (AAPS)
- American Institute of Chemical Engineers (AIChE)
- American Association for the Advancement of Science (AAAS)

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- Laura W Bush Institute of Women's Health

Reviewer

- PDA Journal of Pharmaceutical Science and Technology
- Anti-Cancer Agents in Medicinal Chemistry
- Seminars in Cancer Biology
- Cambridge University Press
- AAPS abstract reviewer

Publications:

- Farooqi AA, **Desai NN**, Qureshi MZ, Librelotto DRN, Gasparri ML, Bishayee A, Nabavi SM, Curti V, Daglia M. Exosome biogenesis, bioactivities and functions as new delivery systems of natural compounds. Biotechnology Advances 2018 Jan - Feb;36(1):328-334.

- Silihe KK, Zingue S, Winter E, Awounfack CF, Bishayee A, **Desai NN**, João Mello L, Michel T, Tankeu FN, Ndinteh DT, Honorine Riwom S, Njamen D, Creczynski-Pasa TB. Ficus umbellata Vahl. (Moraceae) Stem Bark Extracts Exert Antitumor Activities In Vitro and In Vivo. Int J Mol Sci. 2017 May 23;18(6). International Journal of Molecular Sciences 2017 May 23;18(6).

- Angra PK, Siddig A, Nettey H, **Desai N**, Oettinger C, D'Souza MJ. Pharmacokinetic and biodistribution studies of amphotericin B microspheres. Journal of Microencapsulation Nov. 2009; 26(7):627-634.

Posters:

- Sleeper RB, Hesch, KA, **Desai N**, Jenkins MR, Baby N, Chen J, Hobart CT, Hodges J, Huynh AH, Nicholson NM, Pham D, Samuelson C, Sankari S. Sex and Gender Based Medicine in a Doctor of Pharmacy Curriculum. (American Association of Colleges of Pharmacy Annual Meeting, 2013. Chicago, IL).
- Ninh M. La-Beck, Mark Reedy, Jose Vega, Jon Weidanz, Richard Leff, Amit Rawat, Claudia Meek, **Nishil Desai**, William Zamboni, Maciej Markiewski. Complementary Components as Immune Biomarkers for Predicting Toxicity and Response to Anticancer Nanoparticles (Annual Cancer Symposium 2011, Amarillo, TX).
- Gavin Ybarra, **Nishil Desai**, Ninh M. La-Beck. Development of Solid Phase Extraction Method for Evaluating Liposome Encapsulated + Released Doxorubicin in Plasma. (Annual Research Days TTUHSC, 2011, Amarillo, TX)
- **Nishil Desai**, Chandra Sekhar Kolli, Advait Badkar, Sandeep Nema, and Ajay K. Banga. Microneedle Mediated Transdermal Delivery of Human Growth Hormone. (AAPS 2008, Atlanta, GA).
- Chandra Sekhar Kolli, Haripriya Kalluri, **Nishil N. Desai** and Ajay K. Banga. Dermaroller™ as an Alternative Means to Breach the Stratum Corneum Barrier. (Georgia Life Sciences Summit, 2007, Atlanta, GA).

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Presentations:

- Urinary infections in kids, 04/2015 Laura W Bush Institute for Women's Health, Sex and Gender Practitioner Registry (CE credits for Healthcare professionals)
- Sex and Gender Based Differences in Drug therapy: Is Ambien the tip of the iceberg? Desai NN, Sleeper RB, 10/2014, Laura W Bush Institute for Women's Health, 4th Annual Symposium.
- Antiviral and Antiretroviral Update and Clinical Pearls, 05/2013, Texas Tech University HSC-SOP Continuing Education Committee (CE credits for Pharmacist)
- Antifungal Updates and Clinical Pearls, 05/2013, Texas Tech University HSC-SOP Continuing Education Committee (CE credits for Pharmacist)
- Diabetes Pathophysiology Modules, 06/2013, Texas Tech University HSC-SOP Continuing Education Committee (CE credits for Pharmacist)
- Compounding for Pharmacy Technicians, 06/2013, Texas Tech University HSC-SOP, Continuing Education Committee (CE credits for Pharmacy Technicians)

Research Support and Funding:

- Laura W. Bush Institute for Women's Health, $25000, Curricular mapping of Sex and Gender in Pharmacy Curriculum (2012) (Co-Investigator).