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## Novel particulate vaccines for infectious diseases

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We have been working on designing and developing nanovaccines for infectious diseases at the Nanotechnology Laboratory at Mercer University. In particular, we focus on particulate vaccines that offer several advantages over the traditional vaccines, such as superior vaccine stability, the avoidance of cold-chain requirements, and the ease of manufacture. Further, the overall enhanced immune response due to a combination of factors, such as slow release of antigen from the particles and superior uptake into antigen presenting cells of the immune system, makes particulate vaccines the preferred choice of vaccine delivery. The availability of safe bio-degradable and bio-compatible polymers enhances its suitability for human use. Novel delivery of microparticulate vaccines such as transdermal delivery using microneedles and laser ablation, nasal delivery, buccal delivery, and oral delivery of vaccines, amongst others, will also be discussed. Several examples of successful delivery of particulate vaccines in the areas of infectious diseases such as gonorrhea, RSV, influenza, will be discussed.

### Biography

Martin D'Souza has obtained his PhD degree from the University of Pittsburgh, PA, USA. He is a Professor and Director of Graduate Programs in the College of Pharmacy at Mercer University in Atlanta, Georgia. He also serves as the Director of the Clinical Laboratory and Co-Director of the Center for Drug Delivery Research. He has graduated over 50 PhD students and has published over 100 manuscripts. He has been the recipient of several research grants from the National Institutes of Health (NIH), the American Diabetes Association, the Georgia Cancer Coalition, and Georgia Research Alliance. He serves on several Editorial Boards and is a journal reviewer for over 10 scientific journals and has several patents issued in the area of Nanotechnology.

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