

# WITSIE AT THE CUTTING EDGE: Researcher Profile

Associate Professor Mrudula Patel

Clinical Microbiology and Infectious Diseases



## Who are you and what is your academic/scientific training and background?

I am a microbiologist with 34 years of laboratory experience. I developed an interest in research while working in the Department of Tropical Diseases at the National Health Laboratory Services (NHLS) (formerly SAIMR), and subsequently obtained postgraduate degrees. My involvement with medical research and academia has continued to date. Other duties which I have undertaken for the past 17 years are teaching and training of dental undergraduate and postgraduate students and the supervision of MSc and PhD students. Many of these students have achieved awards for their research presentations at conferences.

## Explain the nature of the research that you are currently undertaking.

Several projects are underway. The first project is on oral candidiasis which is a common infection in HIV positive patients. Currently we are investigating the pathogenicity and genotypic characteristics of the causative organism *Candida albicans*. In the second project, we are investigating two medicinal plants for their use in the prevention and treatment of oral infections.

## What do you think is the most pertinent/relevant/significant contribution you have made to research/science/your field?

I think that an extensive research study done on *Vibrio cholerae*, a causative organism of cholera, was relevant and significant. The research showed that iron, which can be present in rivers, sediments and crustaceans, can enhance the survival of this organism. Abnormally high and low pH of the water also supported the growth of *V. cholerae*. In addition in the presence of iron, they produce large quantities of toxins making this organism highly virulent, which further suggests that should these waters be contaminated with *V. cholerae*, low infectious doses can be sufficient in causing infection. Industrial effluents and acid mine drainage are the main sources of iron and fluctuated pH in the fresh water streams and rivers.

## Did you have a particular mentor or supervisor who inspired you in research?

I was very privileged to have been taught, mentored and inspired by the late Emeritus Professor Margaretha Isaäcson. She was a world-renowned medical researcher and teacher, the founder and head of the Department of Tropical Diseases, School of Pathology, Wits. Her work included research on cholera, plaque, African haemorrhagic fevers and above all, Professor Isaäcson was a pioneer in the investigation and documentation of the very first Ebola outbreak known to medical science. Her strong personality, work discipline, passion for science, good work ethics and fairness to others has influenced me the most.

## Tell us about what you do when you're not busy at work and carrying out cutting-edge research.

I aim to have a well-balanced life. I spend time with my family and regularly perform physical exercise including yoga. Some free time goes towards my hobbies such as fine bead-work and Indian classical dancing.

**Read one of Mrudula's papers:** Owotade FJ and Patel M. Virulence of oral Candida isolated from HIV positive women with oral candidiasis and asymptomatic carriers. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology* 2014; 118(4): 455-60.