

CURRICULUM VITAE
Professor Sabiha Yusuf Essack
B.Pharm., M. Pharm., PhD

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NAME: Sabiha Yusuf Essack	POSITION TITLE: Professor: Pharmaceutical Sciences Director: Antimicrobial Research Unit DST/NRF South African Research Chair in "Antibiotic Resistance and One Health"
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Durban-Westville	B. Pharm	1985-1988 (Awarded 1989)	Pharmacy
University of Durban-Westville	M. Pharm	1992-1993 (Awarded cum laude 1994)	Pharmaceutical Microbiology
University of Durban-Westville	PhD	1995-1999 (Awarded 2000)	Pharmaceutical Microbiology

1. POSITIONS AND HONOURS

1.1 Positions

- **DST/NRF South African Research Chair in "Antibiotic Resistance and One Health"** **2016 – to date**
- College Dean: Teaching and Learning, UKZN 2015
- Dean, School of Health Sciences, UKZN 2012- 2014
- Dean, Faculty of Health Sciences, UKZN 2005 – 2011
- Acting Deputy Vice Chancellor and Head, College of Health Sciences, UKZN Jan-Jul 2010
- **Director, Antimicrobial Research Unit** **2005 – to date**
- Head of School of Pharmacy and Pharmacology, UDW 2003 - 2004
- **Professor, Pharmaceutical Sciences, UKZN** **2010 – to date**
- Associate Professor, School of Pharmacy and Pharmacology, UDW 2000 – 2009
- Senior Lecturer, Pharmacy Department, UDW 1997 - 1999
- Lecturer, Pharmacy Department, UDW 1995 – 1996
- Junior Lecturer, Pharmacy Department, UDW 1992 – 1994
- Pharmacist, KZN Dept. of Health (Addington & Wentworth Hospitals) 1990-1991
- Pharmacist Intern, King Edward VIII Hospital 1989

2015: Awarded DST/NRF South African Research Chair (SARChI) in Antibiotic Resistance and One Health

- Appointed expert consultant on by the World Health Organization (Geneva) to facilitate the development of National Action Plans on Antimicrobial Resistance in the WHO Africa Region
- Appointed Dean of Teaching and Learning in the College of Health Sciences
- Appointed on national working group for the implementation of the South African Antimicrobial Resistance National Strategy Framework
- Appointed on Monitoring and Evaluation Task Team on the Review of the Clinical Training Grant commissioned by the Department of Higher Education and Training

2014: Inaugurated as a member of the Academy of Sciences of South Africa (ASSAf)

- Appointed on the Board of the Office of Health Standards Compliance in the National Department of Health for the period 2014-16
- Appointed on the Bio-economy Health Innovation Sector Coordination Committee of the Department of Science and Technology

2013: Appointed on the World Health Organization Technical Working Group on Health Workforce Education Assessment Tools 2013-2015.

Coordinator of sub-group responsible for the concept paper and serve on the sub-groups responsible for generating the assessment tool and protocol for its implementation

- Appointed on the Advisory Group of the Academic Institutional Membership (AIM) Dean's Forum of the International Pharmaceutical federation's Education (FIPEd) Initiative
 - Awarded 18 000 000 NOK (approximately R27 million) for a 4-country project entitled "Antibiotic Stewardship and Conservancy in Africa".
 - Appointed on the Academy of Sciences of South Africa (ASSAf) Panel to generate a consensus report entitled "Reconceptualizing Education and Training of an Appropriate Health Workforce for the Improved Health of the Nation"
 - Successfully nominated as a peer-reviewed member of the Southern Africa FAIMER Regional Institute (SAFRI) community
 - Appointed on the Editorial Board of the African Journal of Microbiology Research
 - Appointed on the National Conditional Grant Task Team (Health Professions Education & Training Grant)
 - Appointed on the Board of Governors of Orient Islamic Educational Institute
- 2012:** Appointed on the Pharmaceutical and Analytical Committee of the Medicines Evaluation and Research Directorate of the national Department of Health
- Nominated to serve as country representative on the Global Respiratory Infections Partnership (GRIP) initiated as the International Antibiotic Misuse and Sore Throat Treatment Advisory Group by Reckitt & Benckiser
 - Awarded a grant of 205 000 NOK from Norwegian Programme for Capacity Building in Higher Education and Research for Development (NORHED) for a project entitled "Antibiotic Stewardship and Conservancy in Africa"
 - Appointed as Director on the Institute of Medicine and Health Sciences PTY. (Ltd.), a proposed private health professional education, training and research entity
 - Nominated to serve on the ASSAf national task team to generate a consensus report on the implementation of the 2010 Lancet Report entitled "Health professionals for a new century: transforming education to strengthen health systems in an interdependent world".
 - Initiated national-level discourse on quality teaching and learning in higher education by way of workshop sessions for the Council for Higher Education in preparation for the 2nd cycle of quality assurance
 - Appointed on the South African National Working Group of the Antibiotic Stewardship Programme
 - Elected to serve on the Executive, Finance and Council Membership Committees of the UKZN Council
- 2011:** Unanimously re-elected as Chair of the South African Committee of Health Sciences Deans for 2nd consecutive term (served as Chair since inception in 2007/8)
- Appointed as expert on the "Standards Development Reference Group" of the Council for Higher Education
 - Appointed on the Department of Science and Technology Task Team to generate an implementation plan in response to the Academy of Science of South Africa Consensus Report on Revitalizing Clinical Research in South Africa
- 2010:** Ministerial appointee to the National Health Research Ethics Council (NHREC) (2010-2013)
Serve on the (1) Training, (2) Animal Health Research and (3) Complaints and Advisory Disciplinary Working Groups of NHREC. Developed the NHREC Constitution.
- Appointed on the International Society of Chemotherapy Antimicrobial Stewardship International Working Group
 - Appointed on the South African National Working Group of the Global Antibiotic Resistance Partnership (GARP)
 - Re-appointed Visiting Professor to the University College of Technology and Management, Malaysia, 2010-12
 - Appointed on the Council for Higher Education (CHE) Programme Accreditation Panel (2010-2015)
 - Appointed as Higher Education South Africa (HESA) representative on the Professional Body Reference Group of the South African Qualifications Authority (SAQA)
 - Appointed Higher Education South Africa (HESA) and South African Committee of Health Sciences Deans representative on task team synergising accreditation of health professional training programmes between the CHE and the Health Professional Council of South Africa.
 - Finalist for MTN Foundation "Boss of the Year 2010"
 - Appointed Acting Deputy Vice Chancellor and Head of the College of Health Sciences (Jan-Jul 2010)
 - Awarded a grant of £100 000 (2010-11) from Department for International Development, Mobilizing Regional Capacity Initiative (DFID-MRCI) for a project entitled "Institutional Initiatives to Enhance Participation, Access, Retention and Success in African Higher Education: A Multi-Country Study on Good Practice to Inform Policy"
 - Awarded a grant of R25 000 (2010-11) from the UKZN Competitive Research Grant (Teaching & Learning) for a study entitled "Student Success in the Faculty of Health Sciences: the impact of curriculum change, the introduction of innovative teaching/learning methods, and student support services" as co-investigator
- 2009:** Successfully nominated by the Institution of International Education (IIE) to participate in the World Innovation Summit for Education, "a "by invitation only" event that brings together 1,000 leading education figures from 50 countries"
- Received the Minara Chamber of Commerce Recognition Award in Academia
 - Nominated for the UKZN Distinguished Teachers Award by peers.
 - Nominated by UKZN and short-listed by the DST for the African Union Woman Scientist Regional Award
 - Elected Senate Representative on the Council of the University of KwaZulu-Natal

- Served as external evaluator of scientific quality for the Danish Ministry of Foreign Affairs, the Consultative Committee for Development Research in Cooperation with the Danish Council for Strategic Research
 - Served on the Steering Committee for Development of Inter-College Teaching and Research Programmes in Research Management (Responsible for facilitating the development of the macro-curriculum)
 - Served on the Steering Committee for Development of Masters in Health Sciences Programme in collaboration with Eduardo Mondlane University, Mozambique (Responsible for facilitating the development of the macro-curriculum)
- 2008:** Appointed Associate Editor of the Southern African Journal of Epidemiology and Infection
- Elected Chair of the national South African Committee of Health Sciences Deans.
 - Awarded a grant of \$10 000 from the Centre for the International Exchange of Scholars (CIES) for research into Access, Retention and Success in African Higher Education
 - Invited membership of the Directors Forum of the Higher Education Learning and Teaching Association of Southern Africa (HELTASA), a special interest group focusing on Academic Development and Support in HEIs in South Africa including *inter alia* higher education studies, foundation programmes, technology-assisted learning, professional development of lecturers, curriculum development and student counselling.
- 2007:** Rated “C3 -scientist” by the National Research Foundation (NRF)
- Competitively selected as a South African representative on the African Higher Education Collaborative (AHEC) Grant, a programme of the CIES, a division of the IIE and IIE's Middle East North Africa (MENA) Region Office
 - Attended the Comprehensive Systematic Reviews Training Programme of the Joanna Briggs Institute
 - Elected as Chair of the Steering Committee of the South African Committee of Health Sciences Deans
 - Awarded Certificate in Conducting Outcomes-Based Assessments
 - Registered as an Assessor with the South African Pharmacy Council
 - Appointed Director of Pharmcore, a 3rd stream income generating company formed in accordance with the UKZN Policy of Self-Funded Teaching Programmes and the UKZN Commercial Initiatives Policy offering courses and programmes determined by market-need.
 - Appointed member of the Quality Assurance Committee of Pharmcore
- 2006:** Appointed Chapter Leader and President of the South African Chapter of the Alliance for the Prudent Use of Antibiotics (APUA)
- Appointed Visiting Professor to the University College of Technology and Management, Malaysia, 2006-8
 - Nominated by UKZN for the Department and Science and Technology’s Distinguished Woman in Science Award
 - Nominated by UKZN for the Academy of Science of South Africa for the Science for Society Gold Medal 2006
- 2005:** Appointed as Dean, Faculty of Health Sciences in the merged University of Kwa-Zulu-Natal
- Awarded an NRF Focus Area Grant to the amount of R495 000 (2005-2007) for a study entitled “Strategies for Containing Antibiotic Resistance”
- 2004:** Appointed on the National Executive of the Pharmaceutical Society of South Africa
- Appointed as technical expert on the Innovation Fund, Technology Advancement Programme of the NRF
 - Awarded an MRC grant to attend the “Week of Ehrlich Excellence” and the “World Conference on Antimicrobial Dosing”
 - Awarded an MRC grant to the amount of R390 000 (2004-2006) for research on a self-initiated research project entitled “Antibiotic Resistance – Strategies for Prevention and Containment based on Risk Factors, Clinical Significance, Infection Control, Pharmaco-economics and Drug Pharmacokinetics and Pharmacodynamics”.
- 2003:** Appointed Head of School of Pharmacy and Pharmacology
- Awarded the American Society of Microbiology (ASM) Infectious Disease Fellow Travel Grant to attend the 43rd Interscience Conference of Antimicrobial Agents and Chemotherapy (ICAAC) in Chicago
 - Awarded MRC grant to attend a workshop “Bacterial Resistance: Mechanisms, Detection, Pharmacology and Molecular Epidemiology” at the 43rd ICAAC.
 - Served as member of the organizing committee for the 23rd International Conference on Chemotherapy
 - Served as reviewer on Journal of Antimicrobial Chemotherapy (UK) and Southern African Journal of Epidemiology and Infection
 - Appointed external examiner in Pharmaceutical Microbiology, Makerere University, Uganda 2003-5
- 2002:** Rated “Y-2 -scientist” by the NRF
- Convened the “Antibiotic Resistance Symposium” to disseminate results of the first multi-centre antibiotic resistance surveillance study. The symposium was accredited with CPD points and was attended by national and provincial Department of Health delegates as well as medical practitioners, pharmacists, policy makers, technologists and academics
 - Awarded World Health Organisation Grant as one of 4 international sites commissioned to undertake research on antibiotic use and resistance as part of the WHO’s Strategy for the Containment of Antimicrobial Resistance
 - Served as reviewer for Southern African Journal of Epidemiology and Infection
 - Served as reviewer by the National Research Foundation (peer review of research proposals)
 - Awarded the ASM Infectious Disease Fellow Travel Grant to attend the 42nd ICAAC held in San Diego

- Awarded the Wellcome Trust Travel Grant to conduct research visits at the Universities of Bath, Leeds and St Bartholomew's and the Royal London School of Medicine and Dentistry
 - Awarded the MRC Travel Grant and NRF International Science Liaison Grant to participate in the 5th International Conference of the Hospital Infection Society (HIS) in Edinburgh.
- 2001:** Awarded an NRF Grant to the amount of R398 000 (2001-2002) for research on "Public Health and Antibiotic Resistance".
- Awarded an MRC grant to the amount of R300 000 (2001-2003) for research on "Antibiotic Resistance Profiles in State Hospitals in Kwazulu-Natal.
 - Awarded a UDW Research Grant to the amount of R145 000 for research on "Antibiotic Resistance Profiles in State Hospitals in Kwazulu-Natal".
 - Awarded WHO and NRF (supplementary) funding to attend short courses entitled "Intensive Course in Epidemiology and Medical statistics" and "Infectious Disease Modelling and its Applications" at the London School of Hygiene and Tropical Medicine
 - Finalist for National Science and Technology Forum (NSTF) Award in the individual category for research and innovation over the past two years
- 2000:** Awarded PhD degree
- Awarded the George McCracken Infectious Disease Fellow Travel Grant to attend the 40th ICAAC held in Toronto
- 1999:** Awarded the Wellcome Trust Travel Award in order to attend a workshop (Harnessing Timely and Comprehensive Surveillance Data to Enhance Antimicrobial Drug Discovery) and conference (Developing Effective Therapies to Fight Against Antibiotic Resistance) in London.
- 1998:** Awarded ASM Student Travel Grant on the basis of scientific quality of paper presented at the 38th ICAAC held in San Diego.
- Awarded Wellcome Trust, MRC and FRD grants to attend the 38th ICAAC.
- 1997:** Awarded the Wellcome Trust Travelling Fellowship to the United Kingdom for research training in molecular biology and biochemistry of antibiotic resistance at St. Bartholomew's and the Royal London School of Medicine and Dentistry.
- Awarded the MRC Overseas Study Grant towards Fellowship abroad.
 - Awarded the FRD International Science Liaison Committee Grant towards Fellowship.
- 1996:** Awarded Eli Lilly Fellowship for Studies Abroad.
- Awarded MRC Bursary for PhD degree.
 - Awarded UDW Research Grant for PhD degree.
- 1994:** Awarded M. Pharm degree *cum laude*.
- Awarded UDW and MRC grants to attend the 3rd International Conference of the HIS, London.
- 1993:** Awarded the MRC Bursary for M. Pharm degree.
- Awarded the DAAD Bursary for M. Pharm degree.
 - Awarded Adcock Ingram Bursary for 14th Annual Congress of the Academy of Pharmaceutical Sciences in Durban.
- 1992:** Awarded UDW Research Grant for M. Pharm degree.
- 1989:** Awarded the B. Pharm Degree (seven distinctions).
- 1988:** Awarded the Eli Lilly Award for the best final year Pharmacy student.
- Awarded the Noristan Award of Merit.
 - Awarded the Allied Bank Merit Award.
 - Awarded a Merit Bursary from the Office of the Commission of Administration.
- 1984:** Awarded the HOD Matriculation Certificate with distinctions in Physics and Arabic.

1.2 Memberships

- Co-Chair of the South African Chapter of the Alliance for the Prudent Use of Antibiotics
- South African Society for Clinical Microbiology (previously the National Antibiotic Surveillance Forum)
- Federation of Infectious Diseases Societies of South Africa
- Islamic Medical Association

2. RESEARCH

2.1 Research Fields and Focus Areas

- Antibiotic Stewardship and Conservation
- Evidence-informed strategies for the prevention and containment of antibiotic resistance based on:
 - the surveillance of antibiotic use and resistance in human, animal and environmental health (One Health),
 - Risk factors for the infection/colonization by antibiotic resistant bacteria,
 - Infection control, and,
 - Antibiotic pharmacokinetics and pharmacodynamics.

- Molecular epidemiology of antibiotic resistance.
- Phenotypic and genotypic characterization of antibiotic resistance, including but not limited to antibiotic resistance genes, genetic determinants of resistance and clonality.
- Virulence factors and their associated genetic determinants in antibiotic-resistant bacteria.
- ESKAPE pathogens
- Health policy and health systems strengthening to optimize the management of infections in the context of antibiotic resistance and stewardship.
- Efficacy and safety of new potential antibiotic moieties
- Scholarship of Health Professional Higher Education
- Human Resources for Health

Established the “Antimicrobial Research -Unit” in Pharmaceutical Sciences in the School of Health Sciences.

2.2 NRF Rating

C3 (2013-2018)

2.3 Peer-reviewed publications¹

1. Amoako, D.G., Bester, L.A., Somboro, A.M., Baijnath, S., Govind, C.N. & Essack, S.Y. *Molecular Characterization of Resistance and Virulence in Methicillin Resistant Staphylococcus aureus (MRSA) from the Private Sector in KwaZulu-Natal, South Africa*. International Journal of Infectious Diseases IJID-D-15-00941 (submitted)
2. Abotsi, R.E., Govinden, U. & Essack, S.Y. *Fluoroquinolone, Macrolide and Ketolide Resistance in Haemophilus parainfluenzae from South Africa*. Journal of Antimicrobial Chemotherapy JAC-2015-2060 (submitted)
3. Pottapinjara, S., Somboro, AM., Ramtahal, M., Bester, LA., Essack, SY, Govender, T & Singh, S. *In Vitro Antibacterial Activity of Methylglyoxal and its Derivatives against Selected Oral Bacterial Strains*. Oral Health and Preventive Dentistry. OHPD-2015-765 - (3474) (submitted).
4. Shobo, B., Bester, L., Baijnath, S., Somboro, A., Peer, A.K. & Essack, S.Y. *Antibiotic resistant profiles of Campylobacter species in the private sector in South-Africa*. Journal of Clinical Microbiology. JCM03099-15 (submitted)
5. Najjuka, C.F., Kateete, D.P., Lodiongo, D.K., Mambo, O., Mocktar, C., Kayondo, W., Baluku, H., Kajumbula, H.M., Essack, S.Y. & Joloba, M.L. *Plasmid-mediated AmpC-producing Bacteria in Uganda: Prevalence, Susceptibility Profiles, and Risk Factors for Carriage among Outpatients in Urban and Rural Districts* Plos One PONE-D-15-50592 (submitted).
6. Osei Sekyere, J., Govinden, U., Bester, L. & Essack, S.Y. *Colistin and Tigecycline Resistance In Carbapenemase-Producing Gram Negative Bacteria: Emerging Resistance Mechanisms And Detection Methods*. Journal of Applied Microbiology JAM-2015-2538 (submitted).
7. Essack, S.Y., Desta, A.T., Abotsi R.E. & Agoba, E.E. *Antimicrobial Resistance in the WHO African Region – Current Status and Roadmap for Action*. Journal of Public Health JPH-15-0427 (accepted – pending minor revision).
8. Azumah, R., Dutta, J., Somboro, A., Ramtahal, M., Chonco, L., Parboosing, R., Bester, L., Kruger, HG., Naicker, T., Essack, SY & Govender, T. *In vitro evaluation of metal chelators as potential metallo β -lactamase inhibitors*. Journal of Applied Microbiology. JAM-2015-2172 (accepted – pending corrections)
9. Osei Sekyere, J., Govinden, U. & Essack, S.Y. (2015). *The Molecular Epidemiology and Genetic Environment of Carbapenemases Detected in Africa*. Microbial Drug Resistance (in press - doi:10.1089/mdr.2015.0053. doi:10.1089/mdr.2015.0053.) ISSN 1076-6294 [Principle supervisor of PhD student]
10. Pareko, D.D., Lubbe, M.S. & Essack, S.Y. (2015). *Surveillance of Antibiotic Use in the private sector in Namibia using sales and claims data* Journal of Infection in Developing Countries (in press) ISSN: 2036-6590 [Co-supervisor of PhD student]
11. Pareko, D.D., Lubbe, M.S. & Essack, S.Y. (2015) *Public knowledge attitudes and behaviour towards antibiotic usage in Windhoek, Namibia*. Southern African Journal of Infectious Diseases. 30 (4): 27-29. ISSN: 1015-8782 [Co-supervisor of PhD student]
12. Osei Sekyere, J., Govinden, U. & Essack, S.Y. (2015). *Review of Established and Innovative Detection Methods for Carbapenemase-Producing Gram-negative Bacteria*. Journal of Applied Microbiology 119: 1219-1233 ISSN 1365-2672 [Principle supervisor of PhD student]
13. Altiner, A., Bell, J., Duerden, M., Essack, S.Y., Koslov, R., Oxford, J., Pignatari, A.C., Sessa, A & van der Velden, A. (2015) *More Action, less resistance: report of the 2014 summit of the Global Respiratory Infection*

¹ Non-SAPSE/ISI journals are indicated with an asterisk (*)

- Partnership*. International Journal of Pharmacy Practice 23: 370-377 (doi: 10.1111/ijpp.12177) ISSN: 2042-7174. [Co-author]
14. Pareko, D.D., Lubbe, M.S. & Essack, S.Y. (2015) *Antibiotic Use in Namibia: Prescriber Practices for Common Community Infections*. South African Family Practice 57 (4): 231-235. ISSN: 2078-6204 [Co-supervisor of PhD student]
 15. Somboro, A., Tiwari, D., Bester, L., Parboosing, R., Chonco, L., Kruger, H.G., Arvidsson, P., Govender, T., Naicker, T. & Essack, S. Y. (2015) *NOTA: A potent metallo- β -lactamase inhibitor*. Journal of Antimicrobial Chemotherapy 70 (5): 1594-6. ISSN: 0305-7453. [Co-supervisor of PhD student]
 16. Dutta, J., Ramesh, S., Radebe, S.M., Somboro, A.M., de la Torre, B. G., Kruger, H.G., Essack, S.Y., Albericio, F. & Govender, T. (2015) *Optimized microwave assisted synthesis of LL37, a cathelicidin human antimicrobial peptide*. International Journal of Peptide Research and Therapeutics 21: 13-20 ISSN: 1573-3904 [co-supervisor of PhD student]
 17. Mhlongo, N., Govinden, U. and Essack, S.Y. (2015) *NDM-1, novel TEM-205, novel TEM-213 and other ESBLs co-expressed in isolates from cystic fibrosis patients*. Southern African Journal of Infectious Diseases 30 (3): 102-6. ISSN: 1015-8782 [Principle supervisor of Masters student]
 18. Chunillal, D., Peer, A.K., Naidoo, I. & Essack, S.Y. (2015). *An evaluation of antibiotic prescribing patterns in a private hospital ICU in KwaZulu-Natal, South Africa*. South African Journal of Infectious Diseases 30 (1): 17-22. ISSN: 1015-8782 [sole supervisor of Masters student]
 19. Somboro A.M., Tiwari, D., Shobo, A., Bester, L., Kruger, H.G., Govender, T. & Essack, S.Y. (2014). *Evaluation of MALDI Biotyping for rapid sub-species identification of carbapenemase-producing bacteria via protein profiling*. Mass Spectrometry Letters 5 (4): 110-14. ISSN: 20938950 [Co-supervisor of Masters student]
 20. Mhlongo, N., Govinden, U., Egner, J. and Essack, S.Y. (2014) *Demographic and microbiological profile of cystic fibrosis in Durban, South Africa*. African Journal of Microbiology Research 8(33): 3118-3122. [Principle supervisor of Masters student] ISSN: 1996-0808.
 21. Naidoo, U., Flack, P., Naidoo, I and Essack, S.Y. 2014. *Secondary school factors relating to academic success in first-year Health Science students*. South African Journal of Higher Education 28(4): 1332-1343 ISSN:1011-3487 [Principle supervisor of Masters student]
 22. Higgins-Opitz, S.B., Tufts, M., Naidoo, I. & Essack, S.Y. 2014 *Perspectives of student performance in the Health Sciences: how do physiology and professional modules compare?* South African Journal of Higher Education 28 (2): 436-454 ISSN:1011-3487 [Co-investigator & author]
 23. Essack, S.Y. & Naidoo, I. 2013. *Teaching and Learning Indicators in University Rankings*. South African Journal of Higher Education 27 (1): 42-47 [Principal investigator & author] ISSN:1011-3487
 24. *Essack S. *Human Resources for Health – Challenges and Solutions*. PHASA newsletter February 2013. <http://www.phasa.org.za/human-resources-for-health-challenges-and-solutions/>
 25. Essack, S.Y. & Pignatari, A.C. (2013). *A framework for the non-antibiotic management of upper respiratory tract infections: towards a global change in antibiotic resistance*. International Journal of Clinical Practice 67 (suppl 180): 4-9. ISSN: 1742-1241. [Lead author]
 26. Bell, J., Duerden, M., Altiner, A., Sessa, A & van der Velden, A in collaboration with the GRIP - Professor Attila Altiner (Germany), Mr John Bell (Australia), Dr Martin Duerden (UK), Professor Sabiha Essack (South Africa), Professor Roman Kozlov (Russia), Professor John Oxford (UK), Professor Antonio Carlos Pignatari (Brazil), Dr Aurelio Sessa (Italy), Dr Alike van der Velden (Netherlands). (2013). *Sore throat management: effective healthcare provider-patient communication meets appropriate diagnosis, self-management and improved antibiotic use*. International Journal of Clinical Practice 67 (Suppl 180): 10-16. ISSN: 1742-1241. [Collaborator]
 27. Oxford, J & Kozlov, R in collaboration with the GRIP: Professor Attila Altiner (Germany), Mr John Bell (Australia), Dr Martin Duerden (UK), Professor Sabiha Essack (South Africa), Professor Roman Kozlov (Russia), Professor John Oxford (UK), Professor Antonio Carlos Pignatari (Brazil), Dr Aurelio Sessa (Italy), Dr Alike van der Velden (Netherlands) (2013). *Antibiotic resistance, a call to arms for primary healthcare providers*. International Journal of Clinical Practice 67 (Suppl 180): 1-3. ISSN: 1742-1241. [Collaborator]
 28. van der Velden, A., Duerden, M., Bell, J., Oxford, J., Altiner, A., Kozlov, R., Sessa, A., Pignatari, A. & Essack, S. (2013) *Prescriber and patient responsibilities in treatment of acute respiratory tract infections – essential for conservation of antibiotics*. Antibiotics 2: 316-327 ISSN: 2079-6382. [one of 2 lead authors]
 29. Essack, S.Y. 2012. *Translating Equitable Access into Retention and Success in African Higher Education: The Role and Responsibility of Individual Institutions*. Journal of Higher Education in Africa 10 (2): 47-62² ISSN: 0857-7762 [Principal author]

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30. Essack, S.Y., Naidoo, I., Oosthuizen, F., Bodenstein, J., Brysiewicz, P. and Suleman, F. 2012. Quality Teaching and Learning in the Health Sciences. South African Journal of Higher Education **26 (5)**: 960-972 ISSN:1011-3487 [Principal investigator & author]
31. Essack, S.Y. 2012. *Models for Increasing the Health Workforce*. South African Medical Journal **102 (11)**: 830-2. ISSN: 0256-9574 [Sole author]
32. Essack, S.Y., Wedekind, V. and Naidoo, I. 2012. *Selection Tools Predictive of Success in the Health Sciences - NATED vs. NSC Students*. South African Journal of Higher Education **26 (3)**: 472-486. ISSN:1011-3487 ISSN: 0362-028X [Principal investigator & author]
33. Bester, L. and Essack, S.Y. 2012. *Observational study of the prevalence and antibiotic resistance of Campylobacter spp. from different poultry production systems in KwaZulu-Natal, South Africa*. Journal of Food Protection **1**: 154-159. ISSN 1944-9097 [Sole PhD supervisor]
34. *Arbee, R., Mahes, N., Mankahla, U., Naroth, A., Suleman, F. and Essack, S.Y. 2012. *Status of Infection Control in Public Hospitals in Kwa-Zulu Natal*. South African Pharmaceutical Journal 79 (3) 32-35 ISSN: 0257-8719 [Principal supervisor of Honours-level project]
35. Essack, S.Y. and Connolly, C. 2011. *Treatment Guidelines and Nosocomial Infections – The South African Experience*. African Journal of Microbiology Research 5 (20): 3122-3125. ISSN: 1996-0808. [Principal investigator].
36. Levy-Hara, G., Amabile-Cuevas, C., Gould, I., Hutchinson, J., Abbo, L., Saxynger, L., Vliege, E., Lopes Cardoso, F.L., Methar, S., Kanj, S., Ohmagari, N., Harbath, S., Aiken, A., Alnimr, A., Bavestrello, L., Carlet, J., Dreser, A., **Essack, S.**, Hsueh, P-R., Ismail, N., Kaddu-Mulindwa, D., Kolmos, J.H., Mochizuki, T., Ndwega, L., Odio, C., Peredo, M.A., Vega, S., Viswanathan., R. and Wertheim, H. 2011. *“Ten Commandments” for the appropriate use of antibiotics by the practicing physician in an outpatient setting*. Frontiers in Microbiology* **2**: 1-7 ISSN: 1664-302X. [member of International Society of Chemotherapy Antimicrobial Stewardship Working Group]
37. Essack, S.Y., Schellack, N., Pople, T., van der Merwe, L., Suleman, F., Meyer, J.C., Gous, A.G.S and Benjamin, D. 2011. *Antibiotic supply chain and management in human health*. South African Medical Journal. **101**: 562-566. ISSN: 0256-9574 [Principal investigator]
38. Holloway, K., Mathai, E., Gray, A., Chandu, S., **Essack, S.Y.**, Gous, A., Joseph, I., Koppikar, G.V., Kotwani, A., Kulkarni, R., Mathai, M., Matthews, J., Pochee, E., Sturm, A.W., Thatte, U., Thomas, K., and Wattal, C. 2011. *Surveillance of antimicrobial resistance in resource-constrained settings - experience from five pilot projects*. Tropical Medicine and International Health **16 (3)** 368-374 ISSN: 1360-2276. [Co-investigator]
39. Holloway, K., Mathai, E., Gray, A., Chandu, S., **Essack, S.Y.**, Gous, A., Joseph, I., Koppikar, G.V., Kotwani, A., Kulkarni, R., Mathai, M., Matthews, J., Pochee, E., Sturm, A.W., Thatte, U., Thomas, K., and Wattal, C. 2011. *Surveillance of community antimicrobial use in resource-constrained settings - experience from five pilot projects*. Tropical Medicine and International Health **16 (2)** 152-161 ISSN: 1360-2276. [Co-investigator]
40. Essack, S.Y., Naidoo, I. and Barnes, G. 2010. *Government Funding as Leverage for Quality Teaching and Learning*. Journal of Higher Education and Management Policy, **22 (3)**: 1-13. ISSN: 1360-080X [Principal investigator & author]
41. Bester, L. and Essack, S.Y. 2010. *Antibiotic Resistance via the Food Chain: Fact or Fiction*. South African Journal of Science **106**: 1-5. ISSN: 0038-2353 [Sole PhD supervisor]
42. Mocktar, C, Govinden U, Sturm A W and Essack SY. 2009. *Complexity and diversity of beta-lactamase expression in inhibitor resistant Escherichia coli from public hospitals in KwaZulu-Natal, South Africa*. Southern African Journal of Epidemiology and Infection. **24**: 29-33. ISSN: 1015-8782 [Principal PhD supervisor]
43. Essa, Z.I., Connolly, C. and Essack, S.Y. 2009. *Staphylococcus aureus from Public Hospitals in Kwa-Zulu-Natal, South Africa – Infection Detection and Strain Typing*. Southern African Journal of Epidemiology and Infection. **24**:4-7. ISSN: 1015-8782. [Sole M. Pharm supervisor]
44. Essack, S.Y. and Uys L.R. 2009. *Health Research in South Africa- Are we meeting the need?* South African Journal of Higher Education. **23 (2)**: 264-274. ISSN:1011-3487 [co-author]
45. Essack, S.Y., Barnes, G., Jackson, L., Majazi, M., Mclnerney, P., Mtshali, N., Naidoo, I., Oosthuizen, F. and Suleman, F. 2009. *Maximizing Income via the Higher Education Funding Framework in Health Sciences*. South African Journal of Higher Education **23 (2)**: 275-292. ISSN:1011-3487 [Principal investigator & author]
46. Govinden, U., Mocktar, C., Moodley, P., Sturm AW and Essack, S.Y. 2009. *Detection of mutations in the gyrA of clinical Salmonella spp*. African Journal of Biotechnology. **8**:3011-3014. ISSN: 1684-5315 [Principal PhD supervisor]
47. Bester, L and Essack, S.Y. 2008. *Prevalence of antibiotic resistance in Campylobacter isolates from commercial poultry suppliers in KwaZulu-Natal, South Africa*. Journal of Antimicrobial Chemotherapy, **62 (6)**:1298-1300. ISSN: 0305-7453 [Sole PhD supervisor].
48. Mocktar C., Govinden U, Sturm A W and Essack SY. 2008. *The effect of mutations in the AmpC promoter region on β -lactam resistance from an Escherichia coli clinical isolate from a patient in a public sector hospital in Kwazulu-Natal, South Africa*. African Journal of Biotechnology. **7**: 2547-2550. ISSN: 1684-5315 [Principal PhD supervisor]

49. Govinden, U., Mocktar, C., Moodley, P., Sturm AW and Essack, S.Y. 2008. *Characterization of ESBLs in Salmonella spp. at a tertiary hospital in Durban South Africa*. Diagnostic Microbiology and Infectious Disease, 62: 86-91. ISSN: 0732-8893 [Principal PhD supervisor]
50. Mocktar C, Govinden U, Sturm A W and Essack SY. 2008. *CMY-20, a novel AmpC-type β -lactamase from South African clinical Escherichia coli isolates*. Diagnostic Microbiology and Infectious Disease, 60: 405-8. ISSN: 0732-8893 [Principal PhD supervisor]
51. Govinden U, Mocktar C, Moodley P, Sturm A W and Essack SY. 2007. *Geographical evolution of the CTX-M β -lactamase – an update*. African Journal of Biotechnology, 6: 831-839. ISSN: 1684-5315 [Principal PhD supervisor]
52. Mocktar C, Govinden U, Sturm A W and Essack SY. 2007. *TEM-145 and TEM-146 β -lactamases produced by Escherichia coli isolates from state hospitals in KwaZulu-Natal, South Africa*. African Journal of Biotechnology, 6: 493-496. ISSN: 1684-5315 [Principal PhD supervisor]
53. Bester L.A. and Essack S.Y. 2007. *Antibiotic resistance in Campylobacter isolates from poultry in KwaZulu-Natal*. Southern African Journal of Epidemiology and Infection; 22: 53 (conference abstract). ISSN: 1015-8782 [Principal PhD supervisor]
54. Govinden, U., Mocktar, C., Moodley, P., Sturm A.W. and Essack, S.Y. 2006. *CTX-M-37 in Salmonella enterica serotype Isangi from Durban South Africa*. International Journal of Antimicrobial Agents, 28: 288-291. ISSN: 0924-8579 [Principal PhD supervisor]
55. Essack, S.Y. 2006. *Strategies for the Prevention and Containment of Antibiotic Resistance*. South African Family Practice, 48: 51. ISSN: 1726-426X [Sole author of position paper]
56. Essack, S.Y., Connolly, C and Sturm, A.W. 2005. *Antibiotic use and resistance in public sector hospitals in KwaZulu-Natal*. South African Medical Journal, 95:865-870. [Principal investigator] ISSN: 0256-9574
57. Gray, A. and Essack S.Y. 2005. *Monitoring antibiotic use and resistance – a pilot project in South Africa*. Essential Drugs Monitor*, 34: 20 ISSN: 1015-0919 [Co-investigator]
58. Govender, S., Pillay, V., Chetty, D.J., Essack, S. Y. and Govender, T. 2005. *Optimization and characterization of bioadhesive controlled release tetracycline microspheres*. International Journal of Pharmaceutics, 306 (1-2): 24-40. ISSN: 0378-5173 [Provided methodological and analytical expertise on the antimicrobial susceptibility testing aspect of this M. Pharm research project]
59. Essack, S.Y. 2004. *β -Lactamases – An Overview*. Southern African Journal of Epidemiology and Infection, 19:106-114. ISSN: 1015-8782 [Sole author of review paper]
60. Essack, S.Y., Hall, L.M.C. and Livermore, D.M. 2004. *Klebsiella pneumoniae isolate from South Africa with multiple TEM, SHV and AmpC β -lactamases*. International Journal of Antimicrobial Agents, 23: 398-400. ISSN: 0924-8579 [Principal investigator]
61. Essack SY. 2002. *Extended-spectrum beta-lactamases: epidemiology, identification, treatment options and strategies to prevent emergence and dissemination*. Southern African Journal of Epidemiology and Infection, 17: 6-11. ISSN: 1015-8782 [Sole author of invited review]
62. Essack SY. 2001 *The development of β -Lactam antibiotics in response to the Evolution of β -lactamases*. Pharmaceutical Research, 18:1391-9. ISSN: 0724-8741 [Sole author of invited review]
63. Essack, S.Y., Hall, L.M.C., Livermore, D.M., Mcfadyen, M.L. and Pillay, D.G. 2001. *Complexity and diversity of Klebsiella pneumoniae strains with extended-spectrum β -lactamases isolated in 1994 and 1996 at a teaching hospital in Durban, South Africa*. Antimicrobial Agents and Chemotherapy, 45:88-95. ISSN: **1098-6596** [Principal investigator]
64. Essack, S.Y. 2000. *Unprecedented Resistance to β -Lactam Antibiotics Evident in Durban, South Africa - Surveillance-Based Antibiotic Policies Imperative!* Southern African Journal of Epidemiology and Infection, 15:48-50. ISSN: 1015-8782 [Sole author of position paper]
65. Essack, S.Y. 2000. *Laboratory detection of extended-spectrum β -lactamases (ESBLs) – the need for a reliable, reproducible method*. Diagnostic Microbiology and Infectious Disease, 37: 293-295. ISSN: 0732-8893 [Sole author of position paper]
66. Essack, S.Y., Hall, L.M.C., Pillay, D.G., Mcfadyen, M.L. and Livermore, D.M. 2000. *Complexity and diversity of extended-spectrum β -lactamase (ESBL)-producing Klebsiella pneumoniae in Durban, South Africa*. In Programme and Abstracts of the 40th Interscience Conference on Antimicrobial Agents and Chemotherapy Toronto, Canada, 2000, Poster C1995, p. 121. American Society for Microbiology, Washington DC. ISSN: 1058-4838 (refereed abstract) [Principal investigator]
67. Essack, S.Y. 2000. *Treatment options for extended-spectrum β lactamase ESBL-producers*. FEMS Microbiology Letters, 190: 181-184. ISSN: 0378-1097 [Sole author of review paper]
68. Essack, S.Y., Gounder, P., Jamnadas, S., Naicker, V., Naidoo, K. and Rashid, Z. 2000. *A staphylococcal carrier study among health sciences students trained in hospitals in Durban, South Africa*. Medical Science Research, 28: 135-136. ISSN: 0269-8951 [Sole supervisor of Honours-level research project]
69. Essack, S.Y., Hall, L.M.C., Livermore, D.M. and Pillay, D.G. 1998. *TEM-62 and TEM-63, novel β -lactamases isolated in South African nosocomial Klebsiella pneumoniae isolates*. In Programme and Abstracts of the 38th Interscience Conference on Antimicrobial Agents and Chemotherapy San Diego, California, 1998, Paper C9,

- p. 71. American Society for Microbiology, Washington DC.] ISSN: 1058-4838 (refereed abstract) [Principal investigator]
70. Essack, S.Y., Ally, F.B., Paraw, A. and Pather, P. 1996. *Perception of the Pharmacist*. South African Pharmaceutical Journal*, 63: 45-46. ISSN: 0257-8719 [Sole supervisor of Honours-level research project]
 71. Essack, S.Y., Badat, A.H., Barmania, Z. and Naidoo, R. 1995. *Immunisation Status in Informal Settlements in South Africa*. Medical Science Research, 23: 287. ISSN: 0269-8951 [Sole supervisor of Honours-level research project]
 72. Essack, S.Y., Alexander, D.M. and Pillay, B. 1995. *Synergism of piperacillin/lithium clavulanate in Enterobacter aerogenes producing multiple β -lactamases*. Medical Science Research, 23: 17-18. ISSN: 0269-8951 [Principal investigator]
 73. Essack, S.Y., Alexander, D.M. and Pillay, B. 1994. *A "novel" plasmid-mediated, class I- type β - lactamase isolated in Klebsiella pneumoniae in Durban, South Africa*. Medical Science Research, 22: 797-798. ISSN: 0269-8951 [Principal investigator]

2.4 Book Chapters

74. Essack, S.Y. 2010. *Translating Equitable Access into Retention and Success in African Higher Education: The Role and Responsibility of Individual Institutions*. In O'Hara, S. (Ed) Higher Education in Africa: Equity, Access, Opportunity, Institute of International Education, New York, New York, pp 15-29.

2.5 Dissertation Titles

- **PhD (Health Sciences) (2000)**
Characterisation of β -Lactamases in a South African, Nosocomial *Klebsiella pneumoniae* Isolates.
Supervisors: Professor M.L. McFadyen (SA) and Dr L.M.C. Hall (UK)
- **M. Pharm (awarded *cum laude* in 1994)**
Resistance Mechanisms of *Enterobacteriaceae* to β -Lactam Antibiotics as Criteria for Improved Antibiotic Formulations
Supervisors: Ms D.M. Alexander and Professor B Pillay

2.6 Conference Presentations

2.6.1 Papers (International)

1. Essack, S.Y. *Implementation of the WHO Policy Package on Antimicrobial Resistance in the WHO Africa Region*. Presented at the Expert Consultation on Antimicrobial Resistance in the African Region, Brazzaville, Republic of Congo, May 2015.
2. Essack, S.Y & Bell, J. *Role of community pharmacy in a pentagonal framework for antibiotic stewardship*. Presented at the 2014 International Pharmaceutical Federation (FIP) Congress, Bangkok, Thailand, September 2014.
3. Essack, S.Y. *Addressing Human Resources Challenges in Pharmacy: the South African Experience*. Presented at the 2013 International Pharmaceutical Federation (FIP) Congress, Dublin, Ireland, September 2013.
4. Essack, S.Y. *GRIP's "5 P" Pentagonal Framework for Antibiotic Conservancy: Overview and Policy*. Presented at the 2013 Global Respiratory Infection Partnership (GRIP) Summit, London, United Kingdom, July 2013
5. Essack, S.Y. *Teaching and Learning Indicators in University Ranking Systems*. Presented at the 2nd QS Maple Conference and Exhibition, Durban, South Africa, May 2012.
6. Essack, S.Y. *Surveillance-Based Treatment Guidelines for Infections - The South African Experience*. Invited presentation at the 1st Global Forum on Bacterial Infections, New Delhi, India, October 2011
7. Essack, S.Y., Naidoo, I. and Barnes, G. *Assuring Equity of Access and Equity of Outcome by Student Monitoring and Academic Development*. Presented at the 18th International Conference on Learning, Port Louis, Mauritius, July 2011.
8. Essack, S.Y., Naidoo, I. and Barnes, G. *Resourcing Research by Quality Teaching and Learning*. Presented at the Conference on Knowledge Production and Higher Education in the 21st Century, Cape Town, South Africa, March 2011
9. Bester L.A. and Essack S.Y. *Antibiotic resistance via the food chain: Fact or fiction?* Presented at the Joint Infection Prevention and Control Africa Network/International Federation of Infection Control Conference, Cape Town, South Africa, September 2010.
10. Essack, S.Y. *Empowering Faculty and Student Development and Success by Transformational Leadership*. Keynote Address at the conference on Female Higher Education – Trends and Perspectives, Madinah, Saudi Arabia, January 2010.
11. Essack, S.Y., Lingah, T., Mashige, K.P., Mtshali, N., Naidoo, I., Naidoo, P., Oosthuizen, F., Pillay, S. and Suleman, F. *Government Funding as Leverage for Quality Teaching and Learning*. Presented at the OECD

Programme on Institutional Management of Higher Education (IMHE) – Quality Teaching in Higher Education, Istanbul, Turkey, October 2009.

12. Essack, S.Y. *Moving Beyond Access to Student Success*. Keynote Address at the 29th Annual Conference of the Southern African Association for Counselling and Development in Higher Education, September, 2008.
13. Essack, S.Y. *Treatment Guidelines and Nosocomial Infections – the KwaZulu-Natal Experience*. Presented on my behalf at the Antibiotic Resistance Conference, Kololi, Gambia, November 2007.
14. Govinden U, Essack S.Y, Mocktar C, Moodley P, Sturm A.W. *Characterization of ESBLs in Salmonella spp. at a tertiary hospital in KwaZulu-Natal*. Presented at the Antibiotic Resistance Conference, Kololi, Gambia, November 2007.
15. Bester L.A. and Essack S.Y. *Susceptibility patterns of Campylobacter and Salmonella from food animals in KZN*. Presented at the Antibiotic Resistance Conference, Kololi, Gambia, November 2007.
16. Essack, S.Y. *Strategies for the Containment of Antibiotic Resistance in Developing Countries – Lessons from South Africa*. Presented at the World Conference on Dosing Anti-Infectives, Nurnberg, Germany, September 2004.
17. Gray AL, Essack SY. *Methods for AMR Surveillance in Communities – lessons from the Durban site*. Presented at the 2nd International Conference on Improving Use of Medicines, Chiang Mai, Thailand, April 2004.
18. Essack, S.Y., Livermore, D.M., Hall, L.M.C. and Pillay, D.G. *TEM-62 and TEM-63, Two Novel Beta-Lactamases Isolated in South African Klebsiella pneumoniae Isolates*. Presented at the 38th Interscience Conference on Antimicrobial Agents and Chemotherapy, San Diego, September, 1998.

2.6.2 Papers (National)

1. Essack S.Y. Antibiotic Stewardship on the Global Radar. Presented at the 2015 Conference of the South African Society of Clinical Pharmacy, Durban, South Africa, June 2015. (invited keynote presentation).
2. Essack, S.Y. Transformative Education: The Students' Perspective. Presented at the 2013 Conference of the South African Association of Health Educationists, Durban South Africa, June 2013. (invited plenary presentation).
3. Essack, S.Y., De Villiers, M., Diab, R., Green-Thompson, L., Hift, R., Hugo, J., Mngadi P. & van Heerden, B. Reconceptualizing Education and Training of an Appropriate Health Workforce for the Improved Health of the Nation. Presented at the 2013 Conference of the South African Association of Health Educationists, Durban South Africa, June 2013.
4. Oosthuizen, F., Bodenstein, J. and Essack, S.Y. *Peer Assessment of Quality Teaching and Learning*. Presented at the 7th Teaching and Learning Conference of the University of KwaZulu-Natal, September 2013.
5. Naidoo, U, Flack, P. & Essack, S.Y. Predictors of success for first year students in health sciences: how useful are secondary school factors? Presented at the 2013 Conference of the South African Association of Health Educationists, Durban South Africa, June 2013.
6. Essack, S.Y. Optimizing antibiotic stewardship initiatives in South Africa. Presented at the 2013 Conference of the South African Society of Clinical Pharmacy, Pretoria, South Africa, June 2013.
7. Essack, S.Y., Naidoo, I., Oosthuizen, F., Bodenstein, J., Brysiewicz, P. and Suleman, F. *Quality Teaching and Learning in the Health Sciences*. Presented at the 6th Teaching and Learning Conference of the University of KwaZulu-Natal, September 2012.
8. Higgins-Opitz, SB, Tufts, M., Qulu, L. and Essack, SY. *Early exposure to physiology: challenges faced by health science students and their teachers*. Presented at the 2012 Conference of the South African Association of Health Educationists, Bloemfontein, June 2012.
9. Higgins-Opitz, SB, Tufts, M., Naidoo, I. and Essack, SY. *Student Performance in the Health Sciences: a UKZN perspective*. Presented at the University of KwaZulu-Natal 5th Annual Teaching and Learning Conference, Durban, September, 2011.
10. Essack, S.Y. and Suleman, F. *Treatment Guidelines and Nosocomial Infections – the KwaZulu-Natal Experience*. Presented at the 21st Annual SAAHIP (South African Association of Hospital and Institutional Pharmacists) Conference Drakensburg, KwaZulu-Natal, March 2008. Received the Sandoz Award for best paper. Also presented at the Department of Health Colloquium on Infectious Diseases
11. Essack, S.Y. and Uys, L.R. *The Importance of Strategic Leadership in Aligning and Integrating College Plans with the Institutional Strategic Planning Framework - The UKZN Experience*. Presented Council of Higher Education, Higher Education Quality Committee Workshop on Enhancing Quality in Multi-Campus Institutions, Pretoria, May 2007.
12. Essack, S.Y. *Teaching and Learning for Retention and Success – A Personal and Professional Health Sciences Perspective*. Presented at the 1st Teaching and Learning Conference of the University of KwaZulu-Natal, September 2007.
13. Essack, S.Y., Connolly, C. and Sturm, A.W. *Treatment Guidelines for Infections are Contingent on Antibiotic Resistance Profiles – Results from a Multi-centre Surveillance KwaZulu-Natal*. Presented at the 19th Annual SAAHIP Conference, Wilderness, Eastern Cape, March 2006

14. Essack, SY. *Promiscuous Bacteria and the Post-Antibiotic Era*. Presented at the 18th Annual SAAHIP Conference, Drakensburg, KwaZulu-Natal, March 2004 (Pearl presentation).
15. Gray AL., Essack, SY, Deedat F., Pillay, T., van Maasdyk J and Sturm AW. *Developing a Method for Antimicrobial Use and resistance Surveillance – Durban Pilot Project*. Presented at the 18th Annual SAAHIP Conference, Drakensburg, KwaZulu-Natal, March 2004.
16. Essack, S.Y. *Containment of Antibiotic Resistance – African Imperatives*. Presented at the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
17. Essack, S.Y. and Sturm, A.W. *A multicenter surveillance study in KZN reveals inappropriate STGs and resistance to all antibiotics on the EDL*. Antibiotic Resistance Congress, Durban, October 2003.
18. Essa, Z.I., Sturm, A.W and Essack, S.Y. Comparison of Detection Methods for Methicillin Resistance in *Staphylococcus aureus* (Young Scientist Presentation). Presented at the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
19. Essack, S.Y., Alexander, D.M. and Pillay, B. *Two "Novel" β -Lactamases Isolated in Nosocomial Pathogens*. Presented at the 6th Annual Symposium of the Natal Branch of the South African Society for Microbiologists, Durban, October 1993.
20. Essack, S.Y., Alexander, D.M., Pillay, B. and Veltman, A.M. *β -Lactamases - A Synergistic Resistance Mechanism in Gram-Negative Bacteria*. Presented at the 14th Annual Congress of the Academy of Pharmaceutical Sciences, Durban, June 1993.

2.6.3 Posters (International)

1. Bell, J, Shepherd, A, Conley, A and Essack, SY. Community Pharmacists and the Management of Antibiotics. Presented at the 2015 International Pharmaceutical Federation (FIP) Congress, Dusseldorf, Germany October 2015.
2. Mhlongo, N, Govinden, U and Essack, SY. NDM-1, Novel TEM-205, Novel TEM-213 and Other ESBLs Co-expressed in Isolates from Cystic Fibrosis Patients. Presented at the 24th European Congress on Clinical Microbiology and Infectious Disease, Barcelona, Spain, May 2014.
3. Essack, SY & Noonan, L for GRIP. *GRIP's Pentagonal Framework for a Global Change in Antibiotic Resistance*. Presented at the Geneva Health Forum 2014, Geneva, Switzerland, April 2014.
4. Bester LA, Lastovica AJ, Chenia H, Pillay M and Essack SY. *Identification, strain typing and plasmid profiles of Campylobacter isolates in KwaZulu-Natal, South Africa*. Presented at the 17th International Workshop on Campylobacter, Helicobacter and Related Organisms, Aberdeen, Scotland, September 2013.
5. Mhlongo, N., Govinden, U. and Essack, S.Y. Novel TEM-205 isolated in *Pseudomonas aeruginosa* from a cystic fibrosis patient in South Africa. Presented at the 53rd Interscience Conference on Antimicrobial Agents and Chemotherapy, Denver, Colorado, September 2013.
6. Higgins-Opitz, S.B., Tufts, M. A., Naidoo, I. and Essack, S.Y. Perspectives of student performance in the Health Sciences. Presented at the International Conference of the Association for Medical Education, Vienna, Austria, August 2011.
7. Essack, S.Y., Govinden, U., Mocktar, C. & Ramgulam, U. *Rampant Resistance to Beta-Lactam Antibiotics in Previously Susceptible Enterobacteriaceae: the KwaZulu-Natal Experience*. Presented at the 19th European Congress on Clinical Microbiology and Infectious Disease, Helsinki, Finland, May 2009.
8. Essack, S.Y. *Magic Bullets and the Nosocomial Nemesis – The KwaZulu-Natal Experience*. Presented at the 2nd World Conference on Magic Bullets, Nurnberg, Germany, October 2008.
9. Essack, S.Y. *Treatment Guidelines and Nosocomial Infections – the KwaZulu-Natal Experience*. Presented at the 2008 Annual Conference on Antimicrobial Resistance, Bethesda, June 2008
10. Gray AL, Essack SY, Deedat F, Pillay T, van Maasdyk J, Holloway K Sorensen TL and Sturm AW. *Antimicrobial use and resistance surveillance pilot project – lessons from the Durban site*. Presented at the 2nd International Conference on Improving Use of Medicines, Chiang Mai, Thailand, March 2004
11. Essa, Z.I., Essack, S.Y. and Sturm, A.W. *Detection Method for Methicillin-resistant Staphylococcus aureus (MRSA) at State Hospitals in Kwazulu Natal*. Presented at the 23rd International Conference on Chemotherapy, Durban, South Africa, June 2003.
12. Moodley, P., Essack S., Gajee, K., Chaggan, M. and Sturm A.W. *Characterization of extended-spectrum beta-lactamase (ESBL)-mediated resistance in Salmonella spp. from Durban, South Africa*. Presented at the 4th European Chemotherapy Conference, May 2002.
13. Essack, S.Y., Hall, L.M.C., Livermore, D.M., Mcfadyen, M.L. and Pillay, D.G. *Complexity and diversity of extended-spectrum β -lactamase (ESBL)-producing Klebsiella pneumoniae in Durban, South Africa*. Presented at the 40th Interscience Conference on Antimicrobial Agents and Chemotherapy, Toronto, September 2000.
14. Essack, S.Y., Naidoo, S., Govender, P., Ramcharan, S. and Nasrullah, K.B. *Antibiotic resistance determinants in poultry – a pilot study conducted in Durban, South Africa*. Presented at the 9th International Congress on Infectious Disease, Buenos Aires, April 2000.
15. Essack, S.Y., Gounder, P., Jamnadas, S., Naicker, V., Naidoo, K. and Rashid, Z. *A staphylococcal carrier study among health sciences students trained in hospitals in Durban, South Africa*. Presented at the 9th International Congress on Infectious Disease, Buenos Aires, April 2000.

16. Essack, S.Y. *Treatment options for ESBL-producing Klebsiella pneumoniae Isolated in Durban, South Africa*. Presented at the 9th International Congress on Infectious Disease, Buenos Aires, April 2000.
17. Essack, S.Y. Hall, L.M.C., Livermore, D.M and Pillay, D.G. *Genotypic and Phenotypic Diversity amongst South African Nosocomial Klebsiella pneumoniae Isolates producing Extended-Spectrum β -Lactamases*. Presented at the 5th Conference of the Federation of Infection Societies, Manchester, November, 1997.
18. Essack, S.Y., Badat, A.H., Barmania, Z. and Naidoo, R. *Immunisation Status in Informal Settlements in Durban, South Africa*. Presented at the 4th International Conference of the Community Health Associations of Southern Africa, Sun City – North West Province, July 1996.
19. Smit, J.A., Chetty, D.J., Dangor, C.M., Essack, S.Y and Gray, A. *Pharmacy Curricula in South Africa: Radical Transformation and Challenges*. Presented at the International Conference on the Role of the University in Health Research and Development, Madras, February 1995.
20. Essack, S.Y., Alexander, D.M. and Pillay, B. *Pleiotropism Enhancing Resistance Conferred by TEM-4 and a "Novel", Plasmid-Mediated, Class I-Type β -Lactamase Isolated in Klebsiella pneumoniae in South Africa*. Presented at the 3rd International Conference of the Hospital Infection Society, London, September 1994.

2.6.4 Published Conference Abstracts (International)

21. Essack SY. *Aligning South African Antibiotic Stewardship Initiatives with WHO Policy Frameworks for Better Outcomes*. 24th European Congress on Clinical Microbiology and Infectious Disease, Barcelona, Spain, May 2014.
22. Somboro AM, Tiwari D, Shobo A, Bester L, Kruger HG, Govender T, Essack SY. *Rapid detection of carbapenemase-producing Escherichia coli using Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry (MALDI-TOF MS)*. 24th European Congress on Clinical Microbiology and Infectious Disease, Barcelona, Spain, May 2014.

2.6.5 Posters (International + National)

23. Essa, Z.I. and Essack, S.Y. *Staphylococcus aureus from Public Hospitals in Kwa-Zulu-Natal - Infection Detection and Strain Typing*. Presented at the 2008 Annual Conference on Antimicrobial Resistance, Bethesda, June 2008, the Antibiotic Resistance Conference, Kololi, Gambia, November 2007 and at the 2nd Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Cape Town, 2007.
24. Mocktar C, Govinden U, Sturm A.W. and Essack, S.Y. *Novel inhibitor-resistant β -lactamases TEM-145 and TEM-146, from two Escherichia coli clinical isolates*. Presented the Antibiotic Resistance Conference, Kololi, Gambia, November 2007 and at the 2nd Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Cape Town, 2007.
25. Essack, SY, Connolly, C. and Sturm, AW. *Treatment Guidelines and Antibiotic Resistance in South Africa*. Presented at the World Conference on Dosing Anti-Infectives, Nurnberg, Germany, September 2004, Opening Conference of the Institute of Infectious Disease and Molecular Medicine, Cape Town, March 2005 and 1st Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Sun City, July 2005.
26. Ramgulam, U., Sturm, A.W. and Essack, S.Y. *Beta-lactamase-Mediated Resistance in Proteus mirabilis from State Hospitals in Kwazulu-Natal*. Presented at the 23rd International Conference on Chemotherapy, Durban, South Africa, June 2003 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
27. Govinden, U., Sturm, A.W. and Essack, S.Y. *Beta-lactamase-Mediated Resistance in Acinetobacter spp. from State Hospitals in Kwazulu-Natal*. Presented at the 23rd International Conference on Chemotherapy, Durban, South Africa, June 2003 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
28. Mocktar, C., Sturm, A.W. and Essack, S.Y. *Beta-lactamase-Mediated Resistance in Multi-Drug Resistant Escherichia coli from State Hospitals in Kwazulu-Natal*. Presented at the 23rd International Conference on Chemotherapy, Durban, South Africa, June 2003 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
29. Essack, S.Y. *Transposon-mediated Extended-Spectrum Beta-Lactamase Resistance in Nosocomial Klebsiella pneumoniae in Durban, South Africa*. Presented at the 5th International Conference of the Hospital Infection Society, Edinburgh, Scotland, September 2002 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
30. Essack, S.Y. and Sturm, A.W. *The Applicability of Standard Treatment Guidelines for Infections – A Case Study of Urinary Tract Infections in Kwazulu-Natal, South Africa*. Presented at the 5th International Conference of the Hospital Infection Society, Edinburgh, Scotland, September 2002 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.
31. Essack, S.Y. and Sturm, A.W. *Resistance Trends from the First Multi-Centre Surveillance Study in Kwazulu-Natal, South Africa*. Presented at the 5th International Conference of the Hospital Infection Society, Edinburgh, Scotland, September 2002 and the 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003.

32. Essack, S.Y., Hall, L.M.C. and Livermore, D.M. *Klebsiella pneumoniae* isolate from South Africa with multiple TEM, SHV and AmpC β -lactamases. Presented at the 9th International Congress on Infectious Disease, Buenos Aires, April 2000 and the 1st Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Sun City, July 2005.

2.6.6 Posters (National)

33. Essack, S.Y. Aligning Antibiotic Stewardship Initiatives with WHO Policy Frameworks for Better Outcomes. Presented at the 5th Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Drakensberg, South Africa, October 2013.
34. Govinden U, Essack S.Y, Mocktar C, Moodley P, Sturm A.W. *Detection of mutations in the gyrA of clinical Salmonella spp.* Presented at 3rd Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Sun City, July 2009.
35. Bester L.A. and Essack S.Y. *Antibiotic resistance in Campylobacter isolates from poultry in KwaZulu-Natal.* Presented at the 2nd Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Cape Town, 2007.
Abstract published in *The Southern African Journal of Epidemiology and Infection* 2007; 22: 53-53.
36. Arbee, R., Mahes, N., Mankahla, U., Narothe, A., Suleman, F. and Essack, S.Y. *Status of Infection Control in Public Hospitals in Kwa-Zulu Natal.* Presented at the 21st Annual SAAHIP Conference, Drakensburg, KwaZulu-Natal, March 2007.
37. Govinden U, Essack S.Y, Mocktar C, Moodley P, Sturm A.W. *Salmonella spp. producing CTX-M-37 from a tertiary hospital in Durban, South Africa.* Presented at the 1st Joint Congress of the Federation of Infectious Diseases Societies of Southern Africa, Sun City, July 2005.
38. Govender, S., Chetty, D.J., Pillay, V., Essack, S.Y and Govender, T. *Physicochemical Properties of Tetracycline Loaded Bioadhesive Microspheres Designed for the Treatment of Periodontal Disease.* Presented at the 25th Annual Conference of the Academy of Pharmaceutical Sciences, Grahamstown, September 2004.
39. Essack, S.Y. *Complexity and Diversity of Klebsiella pneumoniae strains with Extended-Spectrum β -Lactamases.* Presented at the 25th Annual Conference of the Academy of Pharmaceutical Sciences, Grahamstown, September 2004.
40. Dlamini, P., Govender, Y., Nageshar, A., Veerasamy, C. and Essack, S.Y. *Antibacterial properties of South African honey.* Presented at the 18th Annual SAAHIP Conference, Drakensburg, KwaZulu-Natal, March 2004.
41. Govinden, U, McDonald, D and Essack, S.Y. *Biochemical characterisation of a "novel" plasmid-mediated AmpC beta-lactamase.* Presented at the Joint Congress of the Infectious Diseases and Sexually Transmitted Diseases Societies of Southern Africa, Stellenbosch, December 2001.
42. Mocktar, C., Essack, S.Y., Rogers, B.C. and Dangor, C.M. *Antimicrobial activity of aqueous extracts of Bulbine natalensis and Bulbine frutescens.* Presented at the Annual Congress of the Academy of Pharmaceutical Sciences, Grahamstown, September, 2000.
43. Essack, S.Y., McFadyen, M.L., Pillay, B and Gray, A.L. *β -Lactam Antibiogram for South African Strains of Klebsiella pneumoniae - Implications for Practice.* Presented at the 11th Conference of the South African Society of Hospital and Institutional Pharmacists, Port Elizabeth, March 1997.
44. Essack, S.Y., Alexander, D.M. and Pillay, B. *Expanded-Spectrum β -Lactamases in South Africa - A Threat to the Use of β -Lactam Antibiotics.* Presented at the 5th Joint Congress of the Sexually Transmitted Diseases and Infectious Diseases Societies of Southern Africa, Durban, May 1995.
45. Essack, S.Y., Alexander, D.M. and Pillay, B. *"Novel" β -Lactamases - A Threat to the Use of β -Lactam Antibiotics.* Presented at the 9th Conference of the South African Society of Hospital and Institutional Pharmacists, Langebaan, March 1995.

2.6.7 Conference Session Chairmanship/Panellist

- Bambanani 2015 Working Together Education for Change: Joint Annual Conference 2015 of The Network: Towards Unity for Health and the South African Association for Health Educationalists – Moderator of Poster Session, Johannesburg, September 2015
- AIM Dean's Forum at the 2014 International Pharmaceutical Federation (FIP) Congress, Bangkok, Thailand, September 2014
- Inclusive Health Innovation Summit, Cape Town, South Africa, January 2014
- 6th South African Association of Health Educationists, Durban South Africa, June 2013.
- 11th Southern African Research and Innovation Management Association – Panellist on "Codes of Conduct for Research", Durban, May 2011
- Commonwealth Pharmacists Associations Conference 2011 – Panellist on "Human Resources in Pharmacy" June 2011
- 6th International Conference of Pharmaceutical and Pharmacological Sciences, Durban, October 2011
- 60th Annual General Meeting of the Pharmaceutical Society of South Africa, Gauteng, 2005

- 24th Annual Conference of the Academy of Pharmaceutical Sciences, Durban, September 2003
- Resistance to Anti-Infectives. World Conference on Dosing Anti-Infectives, Nurnberg, Germany, September 2004.

2.7 Research Grants

- | | | | |
|---|-----------------------|------------------|---------------------------------|
| • DST/NRF SARCHI
South African Research Chair in Antibiotic Resistance and One Health | R7 500 000 | 2016-2020 | [Principal investigator] |
| • NOHRED
Norwegian Programme for Capacity Building in Higher Education and Research for Development
Antibiotic Stewardship and Conservancy in Africa | 18 000 000 NOK | 2013-18 | [Principal investigator] |
| • NRF – Incentive Funding for Rated Researchers
Antibiotic Resistance | R 240 000 | 2013-18 | [Principal investigator] |
| • NOHRED (Seed Funding)
Norwegian Programme for Capacity Building in Higher Education and Research for Development
Antibiotic Stewardship and Conservancy in Africa | 205 000 NOK | 2012-13 | [Principal investigator] |
| • NRF – Incentive Funding for Rated Researchers
The Microbiological profile of Cystic Fibrosis in Public and Private Sectors in Kwazulu-Natal | R40 000 | 2012 | [Principal investigator] |
| • UKZN Competitive Research Grant
The Microbiological Profile of Cystic Fibrosis in the Public and Private Healthcare in KZN | R35 000 | 2011-12 | [Co-investigator] |
| • DFID-MRCI
Department for International Development, Mobilizing Regional Capacity Initiative (DFID-MRCI)
Institutional Initiatives to Enhance Participation, Access, Retention and Success in African Higher Education:
A Multi-Country Study on Good Practice to Inform Policy | £100 000 | 2010-11 | [Principal investigator] |
| • UKZN Competitive Research Grant (Teaching & Learning)
Student Success in the Faculty of Health Sciences: the impact of curriculum change, the introduction of innovative teaching/learning methods, and student support services | R25 000 | 2010-11 | [Co-investigator] |
| • Centre for the International Exchange of Scholars
Strategies for the Enhancement of Access, Retention and Success in African Higher Education | \$10 000 | 2008-9 | [Principal investigator] |
| • UKZN Access Programme
Academic Development and Student Support (ADSS) Project | R950 000 | 2005-6 | [Principal investigator] |
| • NRF (Focus Area)
Strategies for Containing Antibiotic Resistance | R495 000 | 2005-7 | [Principal investigator] |
| • MRC
Antibiotic Resistance – Strategies for Prevention and Containment based on Risk Factors, Clinical Significance, Infection Control, Pharmaco-economics and Drug Pharmacokinetics and Pharmacodynamics | R390 000 | 2004-6 | [Principal investigator] |
| • UDW
Equipment Grant for Antibiotic Resistance | R125 000 | 2004-6 | [Principal investigator] |
| • WHO
Antibiotic Use and Resistance in Acute Respiratory Infections Encountered in Public and Private Primary Health Care in Kwazulu-Natal, South Africa | \$ 30 000 | 2002-2003 | [Co-investigator] |
| • MRC
Antibiotic Resistance Profiles in State Hospitals in Kwazulu-Natal | R300 000 | 2001-2003 | [Principal investigator] |
| • NRF
Public Health and Antibiotic Resistance | R398 000 | 2001-2002 | [Principal investigator] |
| • UDW
Equipment Grant | R145 000 | 2000-2001 | [Principal investigator] |
| • Wellcome Trust
Research Training Fellowship | £ 27 000 | 1997-98 | [Principal investigator] |

3. TEACHING

3.1 Teaching/Training Fields

- Undergraduate:
 - Pharmaceutical Microbiology, Sterile Products, Aseptic Technique
 - Antibiotic Resistance, Stewardship and Conservation
- Postgraduate:
 - Research Methodology, Research Skills and Experimental Skills in Molecular Biology and Microbiology

3.2 Curriculum/Programme Development and Evaluation

- As programme coordinator in the Department of Pharmacy, I recognized the need for and facilitated curriculum review on 2 separate occasions. The first was in 1999 with funding from USAID-TELP via the Faculty of Health Sciences Education and Training Committee in response to a change in the competency statements (unit standards) issued by the South African Pharmacy Council (SAPC) as the Education and Training Quality Assuror (ETQA) for all B. Pharm programmes. A key feature was the innovative re-designing of the Pharmacy Practice curriculum, integrating it with the Pharmacology curriculum. Part of the new approach involved an externship programme, which consisted of student visits to hospital sites and the evaluation of patients in the contexts of Clinical Pharmacology, Primary Care Drug Therapy (PCDT), communication skills and Pharmacy Law/Ethics. This was highly commended by the SAPC in its inspection of the School for accreditation as an institution offering the B. Pharm programme.
- Curriculum review was again undertaken in 2001-2 where the B. Pharm programme was evaluated by stakeholders from community pharmacy, hospital pharmacy (both public and private), pharmaceutical industry, research and development, academia, and the Department of Health (Pharmaceutical Services). Feedback from a focus group was used to amend the curriculum in order to make it relevant to pharmaceutical care imperatives in South Africa. The new B. Pharm programme was finalized in 2003 under my headship and offered for the first time in 2004.
- I developed two on-line teaching units on research supervision, viz., “the relationship” and “roles and responsibilities” which are offered on the UKZN open-learning system.
<http://ols.ukzn.ac.za/system/interface/interface.php>
- As Dean, I conceptualised and provided the framework for the “Academic Development and Student Success (ADSS)” Project which was further developed by health sciences education experts in the Faculty. The ADSS Project is aimed at enhancing student throughput via a two-pronged approach, viz., the appointment of academic development programme (ADP) officers/tutors to monitor/assist students encountering difficulties with the academic content of programmes; together with re-curriculating to innovative, student-centered and diversity sensitive curricula in terms of pedagogies investigating the implementation of competency-based education (CBE)/outcomes-based education (OBE), problem-based learning (PBL) and cased-based curricula (CBC) within Health Sciences programmes. The project includes an evaluation of the relevance of content to the South African and African contexts by soliciting comments from stakeholders in the public and private health care arenas (e.g. employers of graduates, Department of Health etc. The conceptual framework guiding this initiative has three dimensions: student support and development (for both ‘at risk’ and excellent students), curriculum development and capacity building of academic staff in terms of teaching strategies and pedagogies.
- As Dean, I conceptualized and provided both the framework and macro-curriculum for the on-line Masters in Health Sciences programme consisting of 5 core 16-credit modules, a discipline specific elective and a 96-credit research project with the aim of increasing the recruitment of postgraduate students and research output in the Faculty.
- As principal investigator on the NORAD project, I co-facilitated the development of the online Masters in Health Sciences with a focus on Antibiotic Stewardship and Infection Prevention and Control at the University of Malawi and the Instituto Superior de Ciências de Saúde (ISCISA) in Mozambique

3.3 Undergraduate teaching

- I have taught the entire (100%) Pharmaceutical Microbiology/Institutional Pharmaceutics, Sterile Products and Research Project modules, 50% of the Drug Delivery module and 10% of Biopharmaceutics module at undergraduate level.
- I was appointed external examiner in Pharmaceutical Microbiology, Makerere University, Uganda for the period 2003-5
- I have presented specialist lectures on infection control to Occupational Therapy students in preparation for clinical practice at hospitals and clinics.
- Having acquired a reputation for research-led teaching, I have been requested to present specialist lectures to medical doctors, pharmacists and nurses by professional societies as well as public and private hospitals, e.g.:
 - *Treatment Guidelines and Nosocomial Infections – the KwaZulu-Natal Experience*. Presented at the Department of Health Epidemic Prone Diseases Symposium on invitation (2007)
 - *Antibiotic Resistance – Current Status and Strategies for Control* - Presented as CPD/CME on request of the LifeHealthCare hospital Group to pharmacists and medical practitioners in Durban (2005) and Empangeni (2006) respectively
 - *Infection Control* - Presented to nursing staff of Mahatma Gandhi hospital as an intervention requested by the pharmacists in response to the deaths of neonates because of contaminated parenteral feeds (2005)
 - *Strategies for the Containment of Antibiotic Resistance* - Presented as CPD/CME on request of the South African Association of Hospital and Institutional Pharmacists, KZN Coastal and KZN Midlands Branches (2005)

- *Antibiotic Resistance – The Beginning of the Post-Antibiotic Era* – Presented as a CPD/CME on request of the South African Association of Hospital and Institutional Pharmacists, KZN Midlands Branch and the Pharmaceutical Society of South Africa, KZN Coastal (2003)
- I developed and taught the online module on Antibiotic Stewardship and Conservation as an elective module on the Masters in Health Sciences programme.

3.4 Postgraduate supervision Successful Doctoral and Masters Supervision PhDs

1. V Singh (PhD, 2016)
Pedagogical Practices of Pharmacy academics at UKZN
2. P Orton (PhD, 2015)
Access to Higher Education in the Health Sciences – A Policy Implementation Analysis
3. L Bester (PhD, 2013)
Prevalence and Transfer of Antibiotic Resistance in Food Animals
Awarded the NRF Thuthuka Grant, the NRF Training Grant and the UKZN Competitive Grant based on the scientific merit of the study.
Resulted in 4 publications and 3 conference presentations.
4. C. Mocktar (PhD, 2009)
Molecular Epidemiology of Multi-drug Resistant *Escherichia coli* Isolated at State Hospitals in Kwazulu-Natal
Resulted in 3 publications and 3 conference presentations
5. U. Govinden (PhD, 2009)
Extended-spectrum Beta-Lactamase Resistance in *Salmonella spp.*
Resulted in 4 publications and 3 conference presentations

Masters

6. N Mhlongo (M Med Sc, 2015)
The Microbiological Profile of Cystic Fibrosis in Public and Private Sectors in Kwazulu-Natal
Resulted in 2 papers & 2 conference presentations
7. A Somboro (M. Pharm, 2015)
Use of Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry (MALDI-TOF MS) to Detect Carbapenem-Resistant *Enterobacteriaceae*
Resulted in 2 publications & 1 published conference abstract
8. D Chunnillall (M. Pharm *Cum Laude*, 2014) An Evaluation Of Antibiotic Prescribing Patterns In A Private Hospital In Kwazulu-Natal, South Africa
Resulted in 1 publication
9. U Naidoo (M. Comm. Path, 2013)
Selection Tools Predictive of Student Success in the Health Sciences
Resulted in 1 publication and 1 conference presentation
10. Y Naidoo (M. Med. Sc, 2013)
 β -Lactamase Mediated Resistance in *Klebsiella pneumoniae* from States Hospitals in KwaZulu-Natal
11. Z Essa (M. Pharm, 2007)
Staphylococcus aureus from Public Hospitals in Kwa-Zulu-Natal – Infection Detection and Strain Typing
Resulted in 1 publication and 3 conference presentations
12. A Parsoo (M. Med Sc, 2005)
Applicability of Standard Treatment Guidelines for Infections in Regional Hospitals.
Awarded 76% for dissertation
13. K Naidoo (M. Med Sc, 2005, 70% for dissertation)
Applicability of Standard Treatment Guidelines for Infections in District and Tertiary Hospitals.
Awarded 70% for dissertation
14. U Ramgulam (M. Pharm, 2004)
Molecular Epidemiology of Beta-Lactam Antibiotic Resistant *Proteus spp.* Isolated at State Hospitals in Kwazulu-Natal
Resulted in 2 conference presentations
15. U. Govinden (M. Chem, 2001, *cum laude*)
Kinetic Characteristics of AmpC Beta-Lactamases
Awarded Bronze Medal from the Southern African Association for the Advancement of Science for Best Masters Study in 2002
16. C. Mocktar (M. Med Sc, 2000)
Microbiological and chemical analyses of extracts of indigenous plants
Resulted in a conference presentation

Successful Honours Level Group Supervision (29)

- 2015:** Upper Respiratory Tract Infection Management by Pharmacists: An Intervention Study
Awarded second prize for best podium presentation at the annual Pharmaceutical Sciences Research Day, 2015
- 2006:**
- Infection Control Status in Public Hospitals in KwaZulu-Natal
Resulted in a publication and a conference presentation
- 2004:**
- Evaluation of a Foot Dryer for the Prevention of Tenia pedis
 - Staphylococcal Contamination of the Hospital Environment
Ms TR Ngwenya was awarded MRC Work-Study Research Scholarship for the study
 - Staphylococcal Contamination of Hospital Personnel clothing
Ms LM Ntoa was awarded MRC Work-Study Research Scholarship for the study
- 2003:**
- Antibacterial Properties of South African Honey
Resulted in a conference presentation
- 2002:**
- Genotypic Characterisation of Beta-Lactamase-Mediated Resistance in *Klebsiella oxytoca* Isolated in State Hospitals in Kwazulu-Natal
 - Genotypic Characterisation of Beta-Lactamase-Mediated Resistance in *Citrobacter freundii* Isolated in State Hospitals in Kwa-Zulu-Natal
- 2001:**
- Antibiotic Use and Resistance – A Correlation?
- 2000:**
- A staphylococcal Carrier Study Amongst ICU Nurses
Awarded first prize for best podium presentation at the annual School of Pharmacy and Pharmacology Research Day, 2000
 - The Efficacy of Standard Treatment Guidelines and the Essentials Drugs List in the Treatment of Community-Acquired Urinary Tract Pathogens
 - Antibiotic Resistance Determinants in Pork
 - Antibiotic Resistance Determinants in Beef
- 1999:**
- 'The Competent Pharmacist'
 - Anti-Gram-positive Activity of Organotin Quaternary Ammonium Disinfectant
 - Anti-Gram-negative Activity of Organotin Quaternary Ammonium Disinfectant
Awarded fourth prize for best research presentation at the annual Department of Pharmacy Research Day, 1999
 - Quinolone Resistance in Community-Acquired Pathogens
 - Antibiotic Resistance Determinants in Poultry
Awarded first prize for best research paper presentation at the at the annual Faculty of Health Sciences Research Day, 1999, and, Awarded third prize for best research presentation at the annual Department of Pharmacy Research Day, 1999, and resulted in 1 conference presentation
 - A Staphylococcus Carrier Study Among Health Science Students
Resulted in 1 publication and 1 conference presentation
- 1996:**
- The Effect of Microwaving on the Bacterial Viable Count
 - Status of Infection Control in Provincial Hospitals in Durban
- 1995:**
- Incidence of Nosocomial Infections at King Edward VIII Hospital
Awarded third prize for best podium presentation at the Faculty of Health Sciences Research Day, 1995
 - Evaluation of Microbial and Particulate Contamination in Intravenous Admixtures
Awarded third prize for best poster presentation at the Faculty of Health Sciences Research Day, 1995
- 1994:**
- Perception of the Pharmacist by Other Health Care Professionals
Resulted in a publication
 - Tuberculosis Awareness Campaign
Awarded a prize for best poster presentation at the Faculty of Health Sciences Research Day, 1994
 - Immunisation Awareness in Informal Settlements in Durban
Resulted in 1 publication and 1 conference presentation
 - An Evaluation of Antibiotic Susceptibility Testing Techniques for Antibiotics

1993:

- AIDS Awareness Campaign
- Permeability : A Primary Resistance Mechanism to β -Lactam Antibiotics in Gram-negative Bacteria

1992:

- The Effect of Clavulanic Acid on the MIC of β -Lactam Antibiotics

Current

PhD Students registered at UKZN:

17. N Ayepong (PhD)

ESKAPE Pathogens from Ghana

18. F Choonara (PhD)

Prevalence, Phenotypic and Genotypic Characterization of Resistant Bacterial Isolates from Microbiological Specimens at Kamuzu Central Hospital

19. B Gaspar (PhD)

Campylobacter spp. and *Salmonella spp.* in Poultry in Maputo and Matola Regions, Mozambique: Phenotypic and Genotypic Characterization of Serovars and Antibiotic Resistance Profiles

20. R Joaquim (PhD)

Molecular Epidemiology of *Staphylococcus aureus* Isolated in Hospital Environments, from Colonized and Infected Patients admitted for Surgery in the Maputo Central Hospital

21. A Naidoo (PhD)

An Open Label Randomized Controlled Clinical Trial Comparing Two Regimens (Moxifloxacin vs Ethambutol) for Treatment of Smear-Positive Pulmonary Tuberculosis

22. U Naidoo (PhD)

Graduate Attributes of Health Sciences Students at UKZN

23. J Osei (PhD)

Phenotypic and Genotypic Characterization of Carbapenem-Resistant Enterobacteriaceae from the Private Sector in Durban, South Africa

24. Y Rasool (PhD)

Evidence-Based Strategies for Prevention and Control of Multidrug Resistant Gram Negative Bacteria in Tertiary Care Hospital in Saudi Arabia

25. M Ramtahal(PhD)

Use of Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry (MALDI-TOF MS) for the Rapid Identification of Mycobacteria and Characterization of Drug Resistance Profiles

26. A Somboro (PhD)

Pharmacokinetics/Pharmacodynamics and In Vivo Efficacy of Potentially Novel Anti-Tuberculosis Drugs

27. LL Njougang Yontchoung (PhD)

Molecular Epidemiology of Livestock-Associated Methicillin Resistant *Staphylococcus aureus* (MRSA) and Extended-Spectrum Beta-Lactamase-Producing Enterobacteriaceae in Food Animals, Particularly Pigs and Related Workers In Cameroon

28. T Zimba (PhD)

ESBL-Producing *Escherichia coli* and *Klebsiella pneumoniae* in Maputo City

Masters Students Registered at UKZN

29. R Abotsi (M. Pharm)

Fluoroquinolone Resistance in *Haemophilus parainfluenzae* from Private Sector Patients in Kwazulu-Natal, South Africa.

30. CB Adjei (M. Med. Sc)

Clonality of Pan-Resistant *P. aeruginosa* from a Private Hospital in Durban, South Africa

31. E Agoba (M. Pharm)

Mechanisms of Resistance to Quinolones in *S. typhi* Isolates from Food

32. D Amoako (M. Med. Sc)

Molecular Characterization of Methicillin-Resistant *Staphylococcus aureus* (MRSA) from the Private Sector in KwaZulu-Natal, South Africa

33. J Asante (M. Pharm)

Vancomycin Resistance in *Staphylococcus aureus* and *Enterococci* in Ghana

34. R Azumah (M. Med. Sc)

Evaluation of Metal Chelators as Potential Metallo- β -Lactamase Inhibitors

35. J Chinnathumby

Strain Typing and Plasmid Profiles of Clinical *Campylobacter* Isolates from Geographical Distinct Areas within South Africa

36. L Chirindze (M Med Sc)

Prevalence, Phenotypic and Genotypic Characteristics of ESBL-positive *E. coli* Carriage in a University Student Residence Population

37. N Chiweshe (M. Ed)

Non-Academic Student Support that Translates Access into Retention and Success

38. S Faife (M Med Sc)

Characterization Extended Spectrum Beta – lactamase (ESBL) - Producing Bacteria isolated from Chickens Imported and Produced in Maputo City

39. WC Nyirenda (M. Med. Sc)

Molecular Characterization of Antimicrobial Resistance in Escherichia Coli from Urine Cultures.

40. A Phiri (M. Med. Sc)

Antibiotic Resistance in Shigella spp Isolated from Stool Specimens of Patients with Acute diarrhea at Bwaila Hospital, Lilongwe

41. S Pottapinjara (M. Med. Sc)

In Vitro Antibacterial Activity of Methylglyoxal and its Derivatives Against Selected Oral Bacterial Strains

42. CO Shobo (M. Med. Sc)

Fluoroquinolone Resistance in *Campylobacter jejuni* from Clinical Isolates in South Africa

Coursework Masters Students Registered at UKZN

43. S Hoosain

Antibiotic De-Escalation as a Strategy in the Management of Sepsis

44. C Langa (M H. Sc.)

Resistance profile of β lactamase producing *Escherichia coli* isolated in the Microbiology Laboratory of Maputo Central Hospital

45. S Singh

The Use of Point of Care Testing to Inform Antimicrobial Therapy in a ICUs in a Private Hospital

46. Z Randeree

Impact of strategies of cost containment in the private sector on the quality of life

Students registered at other Universities

47. C Najjuka (PhD) – Makerere University, Uganda

Characterization of ESBLs in Enterobacteriaceae in Uganda

48. D Pareko (PhD) – North West University

Antibiotic usage among ambulatory patients in the private healthcare sector of Namibia

49. N Mbelle (PhD) – University of the Witwatersrand

Cassette Arrays associated with Quinolone and Extended Spectrum Beta-Lactamase Co-Resistance in *Enterobacteriaceae* isolated from selected Hospitals in South Africa

3.5 External Examination

I have served as external examiner for Masters dissertations from Management Sciences University, Malaysia, the Quaid-I-Azam University, Pakistan, the University of Cape Town, University of the Witwatersrand, Nelson Mandela Metropolitan University and the Nelson R Mandela School of Medicine, UKZN.

3.6 Honours and Achievements Related to Teaching

2012:

- Initiated national-level discourse on quality teaching and learning in higher education by way of workshop session for the Council for Higher Education in preparation for the 2nd cycle of quality assurance

2011:

- Appointed as expert on the “Standards Development Reference Group” of the Council for Higher Education

2010:

- Awarded a grant of £100 000 from Department for International Development, Mobilizing Regional Capacity Initiative (DFID-MRCI) for a project entitled “Institutional Initiatives to Enhance Participation, Access, Retention and Success in African Higher Education: A Multi-Country Study on Good Practice to Inform Policy”
- Awarded a grant of R25 000 from the UKZN Competitive Research Grant (Teaching & Learning) for a study entitled “Student Success in the Faculty of Health Sciences: the impact of curriculum change, the introduction of innovative teaching/learning methods, and student support services” as co-investigator.
- Appointed Visiting Professor to the University College of Technology and Management, Malaysia, 2010-12
- Appointed on the Council for Higher Education (CHE) Programme Accreditation Panel
- Appointed as Higher Education South Africa (HESA) representative on the Professional Body Reference Group of the South African Qualifications Authority (SAQA)

- Appointed Higher Education South Africa (HESA) and South African Committee of Health Sciences Deans representative on task team synergising accreditation of health professional training programmes between the CHE and the Health Professional Council of South Africa.

2009:

- Successfully nominated by the Institution of International Education to participate in the World Innovation Summit for Education
- Nominated for the UKZN Distinguished Teachers Award by peers
- Serve on the Steering Committee for Development of Inter-College Teaching and Research Programmes in Research Management (Responsible for facilitating the development of the macro-curriculum) (2009)

2008:

- Invited to present the keynote address entitled *Moving Beyond Access to Student Success* at the 2^{9th} Annual Conference of the Southern African Association for Counselling and Development in Higher Education, September, 2008.
- Invited membership of the Directors Forum of the Higher Education Learning and Teaching Association of Southern Africa (HELTASA). This is a special interest group focusing on Academic Development and Support in HEIs in South Africa including *inter alia* higher education studies, foundation programmes, technology-assisted learning, professional development of lecturers, curriculum development and student counselling.
- Served as external panel member on the School and programme review of the School of Pharmacy at the University of the Western Cape.

2007:

- Competitively selected as a South African representative on the AHEC Grant, a programme of the CIES, a division of the IIE on the basis of my teaching-related initiatives as Dean in the Faculty of Health Sciences, specifically the ADSS project described above
- Invited to present the keynote address entitled *Teaching and Learning for Retention and Success – A Personal and Professional Health Sciences Perspective* at the 1st Teaching and Learning Conference of the University of KwaZulu-Natal, September 2007.
- Awarded Certificate in Conducting Outcomes-Based Assessments
- Registered as an Assessor with the South African Pharmacy Council
- Appointed member of the Quality Assurance Committee of Pharmcore a 3rd stream income generating company formed in accordance with the UKZN Policy of Self-Funded Teaching Programmes and the UKZN Commercial Initiatives Policy offering courses and programmes determined by market-need.

2006:

- I was appointed Visiting Professor to the University College of Technology and Management, Malaysia to undertake a review of their Pharmacy programmes

3.7 Publications Related to Teaching

- Naidoo, U., Flack, P. & Essack, S.Y. 2014. Secondary school factors relating to academic success in first-year Health Science students. *South African Journal of Higher Education* 28(4): (in press) [Principle supervisor of Masters student] ISSN:1011-3487
- Higgins-Opitz, S.B., Tufts, M., Naidoo, I. & Essack, S.Y. 2014 *Perspectives of student performance in the Health Sciences: how do physiology and professional modules compare?* *South African Journal of Higher Education* 28 (2): (in press) [Co-investigator & author] ISSN:1011-3487
- Essack, S.Y. & Naidoo, I. 2013. Teaching and Learning Indicators in University Rankings. *South African Journal of Higher Education* 27 (1): 42-47 [Principal investigator & author] ISSN:1011-3487
- Essack, S.Y. 2012. *Translating Equitable Access into Retention and Success in African Higher Education: The Role and Responsibility of Individual Institutions.* *Journal of Higher Education in Africa* 10 (2): 47-62³ [Principal author] ISSN: 0857-7762
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4. **SERVICE**

4.1 **International**

- 2015:** Appointed as expert consultant on antimicrobial resistance to the WHO Africa Office
- 2013:** Appointed on the Advisory Group of the Academic Institutional Membership (AIM) Dean's Forum of the International Pharmaceutical federation's Education (FIPEd) Initiative
Appointed on the World Health Organization Technical Working Group on Health Workforce Education Assessment Tools 2013-2015. Coordinator of sub-group responsible for the concept paper and serve on the sub-groups responsible for generating the assessment tool and protocol for its implementation
- 2012:** Nominated as country representative on the Global Respiratory Infections Partnership (GRIP) initiated as the International Antibiotic Misuse and Sore Throat Treatment Advisory Group by Reckitt & Benckiser
- 2010:** Appointed Visiting Professor to the University College of Technology and Management, Malaysia, 2010-2012
- 2006:** Appointed President of the South African Chapter for the Alliance for the Prudent Use of Antibiotics
Appointed Visiting Professor to the University College of Technology and Management, Malaysia, 2006-8
- 2003-2005:** Appointed external examiner in Pharmaceutical Microbiology in the Department of Pharmacy, Makerere University, Uganda, 2003-2005
- 2003:** Member of organising committee for 23rd International Conference on Chemotherapy

4.2 **National**

- 2015:** Appointed on national working group for the implementation of the South African Antimicrobial Resistance National Strategy Framework
Appointed on Monitoring and Evaluation Task Team on the Review of the Clinical Training Grant commissioned by the Department of Higher Education and Training
- 2014:** Appointed on the Board of the Office of Health Standards Compliance in the National Department of Health for the period 2014-16
Appointed on the Bio-economy Health Innovation Sector Coordination Committee of the Department of Science and Technology
- 2013:** Appointed on the Academy of Sciences of South Africa (ASSAf) Panel to generate a consensus report entitled "Reconceptualizing Education and Training of an Appropriate Health Workforce for the Improved Health of the Nation"
Nominated as a peer-reviewed member of the Southern Africa FAIMER Regional Institute (SAFRI) community
- 2012:** Appointed on the National Conditional Grant Task Team (Health Professions Education & Training Grant)
Nominated to serve on the South African Academy of Science national task team to generate a consensus report on the implementation of the Lancet Report entitled "Health professionals for a new century: transforming education to strengthen health systems in an interdependent world".
Appointed on the South African National Working Group of the Antibiotic Stewardship Programme
- 2011:** Appointed as expert on the "Standards Development Reference Group" of the Council for Higher Education
Appointed on the Department of Science and Technology Task Team to formulate an implementation plan in response to the Academy of Science of South Africa Consensus Report on Revitalizing Clinical Research in South Africa
- 2010:** Ministerial appointee to the National Health Research Ethics Council (2010-2013)
Appointed on the South African National Working Group of the Global Antibiotic Resistance Partnership
Appointed on the Council for Higher Education (CHE) Programme Accreditation Panel
Appointed as Higher Education South Africa (HESA) representative on the Professional Body Reference Group of the South African Qualifications Authority (SAQA)
Appointed Higher Education South Africa (HESA) and South African Committee of Health Sciences Deans representative on task team synergising accreditation of health professional training programmes between the CHE and the Health Professional Council of South Africa.
- 2009:** Appointed external expert/member of an Academic Promotions Panel for Professorship at DUT
- 2008:** Appointed Associate Editor of the Southern African Journal of Epidemiology and Infection
Appointed external expert on a School Review Panel for the School of Pharmacy, University of the Western Cape.
- 2007:** Co-founded the South African Committee of Health Sciences Deans and principal author of its Constitution
- 2006:** Member of the Advisory Board on the Student's Female Condom Study of the Reproductive Health and HIV

Research Unit (RHRU)

2004-5: Served as a member of the National Executive Committee of the Pharmaceutical Society of SA 2004-5

2000: Appointed as tutor of academic interns at the University of Durban-Westville

4.3 University

2015: Served as College Dean of Teaching and Learning in the College of Health Sciences

- Served on University Senate (2005-15)
- Served on the Teaching Strategy Group (2015)
- Served on the Executive Leadership Forum (2005-15)
- Served on the Executive and Deans Committee (2005-15)
- Served on the Scholarships Committee (2015)
- Served on the Distinguished Teacher Award Selection Committee (2014-5)
- Served on the Distinguished Student Award Selection Committee (2014-5)
- Served on the Quality Enhancement Project Committee (2015)

2014: Served as Dean and Head of the School of Health Sciences (2012-4)

2013: Served as Senate Representative on the UKZN Council

- Served as on the Executive Committee of Council
- Served on the Council Membership Committee of Council
- Served as on the Finance Committee of Council
- Served on the Performance Management Committee of Human Resources as Deans' representative
- Served on the ICT PC Review Committee

2011: Served on the UKZN task team on the Review of the Higher Education Funding Framework

- Served as alternate on the Council Membership Committee of Council
- Served as alternate on the Executive Committee of Council
- Served on the University Teaching and Learning Committee

2010: Served on the Task Team developing guidelines for the Research Development Grant

2009: Served on the Council Membership Committee of Council

- Served as alternate on the Finance Committee of Council
- Served on Remuneration Committee of Council as Deans' nominee/representative (2008-2010).
- Served on the Salary Subvention Committee of Council as Deans' nominee/representative
- Served on Student Services Council as Deans' nominee/representative
- Served on the Academic Resource Planning Committee of Senate
- Served on the Goal 7 Task Team tasked with the Implementation of Goal 7 of the UKZN Strategic Plan (VC's nominee)
- Served on the Science Access Steering Committee
- Served on the LEAP Management Committee
- Served on the LEAP Academy
- Served on the Access Advisory Committee (2005-9)

2008: Served on the Institutional Audit Coordinating Committee as Deans' nominee/representative

- Served on the College Quality Committee of the College of Science and Agriculture
- Served on the "transformation, social cohesion, and elimination of discrimination" task team

2007: Served on the Finance Stabilization Task Team as Deans' nominee/ representative

- Served on the Senate Sub-Committee on the Examination and Administration of Postgraduate Degrees
- Served on the Senate Sub-Committee for Policy Formulation on Graduation Certificates

2006: Served on the Steering Committee for the formulation of the UKZN Strategic Plan 2007-16

- Served on the planning committee for the "Implementation Strategy for School and Business Plans"

2005: Served on the Reference Group Auditing Student Failure (April 2005)

- Appointed on the working group for the development of an Access Policy for UKZN
- Appointed on the working group for the development of the Research Policy for UKZN

4.4 College of Health Sciences

Current: Serve on the College Management Committee

- Serve on the College Academic Affairs Board
- Serve on the College Promotions and Awards Committee

2009: Served on the Steering Committee for Development of Inter-College Teaching and Research Programmes in Research Management (Facilitating the development of the macro-curriculum)

- Served on the Steering Committee for Development of Teaching and Research Programmes in Autistic Spectrum Disorders
- Served on the Academic Affairs Board

- Served on the College Quality Committee
- 2008:** Chaired the sub-committee responsible for implementation of Goal 6 of the College Strategic Plan

4.5 School of Health Sciences

- 2012-4:** Served as Dean and Head of School
- Chair of:
 - School Board
 - School Management & Quality Committee
 - Formulated School constitution

4.6 Faculty of Health Sciences (UKZN)

- 2009-11:** Dean of Faculty
- Chair of:
 - Faculty Board
 - Equity, Transformation and Human Resources Committee (ETHRC)
 - Faculty Exclusions Appeals Committee (FAEC)
 - Faculty Management and Quality Committee (FMQC)
 - Promotions and Awards Committee (PAC)
- 2008:** Formulated “UKZN – A Guide for Faculty of Health Sciences Staff”
- 2007:** Commissioned a video as a marketing tool encouraging students to choose programmes in the Faculty of Health Sciences at UKZN highlighting UKZN-specific programme characteristics in addition to academic excellence such as relevance to the South African and African healthcare contexts, diverse service and training platforms ranging from deep rural to urban, community-based education, undergraduate experiential training/internships, pedagogies appropriate to the diverse student needs, research areas, community outreach initiatives and international and national collaboration. The video is targeted at students at grade 9 and 10 from previously disadvantaged “Dinaledi” schools in rural and peri-urban areas.
- 2006:** Developed the Faculty Strategic Plan
- Developed the Faculty Equity Plan
 - Developed the Faculty Research Strategy
 - Developed a Faculty Enrolment Plan
 - Secured funding to the amount of R950 000 from SANTED and the UKZN Access Office for the “Academic Development and Student Success (ADSS)” as described in section E above.
 - Instituted a “twinning initiative” with the Student Counseling Centre (SCC) on the Westville campus in its “*Early Identification of Students at Risk of Failure*” retention project in response to the Hugh Africa Report. The SCC has formulated a series of questionnaires that enables the identification of problems ranging from academic difficulties, to learning skills and incorrect career choices. The questionnaire-based survey is undertaken after the first set of assessments in order to timeously respond to students at risk of failing.
 - Formulated business plans to generate third stream income from alumni and the corporate sector. Secured R885 000 over a 5-year period, including R250 000 for a training Pharmacy and annual funding of R250 000 for the Pfizer College of Health Sciences Young Health Scientists Research Symposium and the Pfizer-UKZN National Young Health Scientists Research Symposium.
 - Developed the Faculty of Health Sciences Postgraduate Administration Procedure covering all aspects from indication of interest to graduation.
 - Collated Faculty Board sub-Committee packs containing national and UKZN policies and procedures relevant to the terms of reference of the committee.
 - Implemented a student monitoring system on students readmitted on probation after successful appeals against exclusion. Monitoring templates are sent to all disciplines and monthly reports are evaluated by the Dean.
- 2005:** Developed Faculty Constitution
- Initiated “Selection Tools Project” to determine the best access tool for predicting student success in preparation for the Further Education and Training Certificates of 2008. Results published in: Essack, S.Y., Barnes, G., Jackson, L., Majozi, M., McInerney, P., Mtshali, N., Naidoo, I., Oosthuizen, F. and Suleman. F. 2009. *Maximizing Income via the Higher Education Funding Framework in Health Sciences*. South African Journal of Higher Education **23**: 59-74
 - Implemented a series of workshops in the interests of staff capacity development, increasing research output and credentialing. These are run annually.
 - Instituted research networking meetings
 - Chaired the
 - DP Appeals Committee (2005)
 - Research, Ethics and Higher Degrees Committee (REHDC) (2005-7)
 - Teaching, Learning, Access and Undergraduate Committee (TLAUC) (2005)
- 2003:** Served on UKZN Faculty Planning Committee

- Served on Faculty Merger Committee
 - Served on Faculty Promotions Committee
- 2002:** Served as Vice Dean of Research (1999-2002)
- Served as Chair of the Faculty Research Standing Committee (1999-2002)
 - Served as Faculty Representative on the University Research Committee (1999-2002)
 - Served as departmental representative on Faculty Research Committee (1998-2002)

4.7 School of Pharmacy and Pharmacology

- 2004:** Served as Head of School (2003-4)
- Served on the School EXCO (1998-2004)
 - Initiated a review and evaluation of the B. Pharm programme by stakeholders from community Pharmacy, hospital Pharmacy (both public and private), pharmaceutical industry, research and development, academia, and the Department of Health (Pharmaceutical Services). Feedback was used to amend the curriculum in order to make it relevant to pharmaceutical care imperatives in South Africa. The new B. Pharm programme was finalized in 2003 under my headship and offered for the first time in 2004. Continuous curriculum review occurs within the School
 - Initiated a quality assurance mechanism by submitting module content for evaluation to academics at other Pharmacy Schools in South Africa
 - Secured funding from Pfizer South Africa for the annual research day, Pfizer research Symposium in Pharmaceutical Sciences
 - Secured student awards as follows:
 - Resmed Healthcare Award for Best Student in Pharmaceutical Chemistry
 - Resmed Healthcare Award for Best Student in Pharmaceutics
 - Hexal Pharma Award for Best Student in Pharmacology
 - Sparkport Pharmacy Award for Best Student in Pharmacy Practice
 - Pfizer Award for Best research presentation
 - Enaleni Pharmaceuticals Award for Best Pharmacy Student
- 2003:** Developed School Constitution to ensure good School governance with detailed line function, accountability and responsibilities.
- Initiated staff trajectories
 - Initiated staff portfolios with letters of commendation and recognition of academic, research, outreach and administrative activities of academic and non-academic staff.
 - Initiated mechanism to increase intake into the B. Pharm degree in the short and long term
 - Formulated “time release mechanism” to free staff pursuing postgraduate degrees.
 - Initiated a SWOT analysis in preparation for the merger with the University of Natal.
 - Formulated School webpage and brochure to be used as a tool to attract funding for research, workshops, conference attendance, sponsorships of HODs/Chairs of departments
- 2002:** Devised admissions and selection criteria for first and second level entry into the B. Pharm degree
- Served as Discipline Chair, Pharmaceutics (2001-2002)
 - Served as Undergraduate Research Co-ordinator (1999-2002)
 - Serve as School Representative on the Faculty Research Committee (1999-2002)
 - Served as Acting School Director (1999-2002)
 - Devised Student Evaluation Policies
 - Devised Undergraduate Research Policies

5 PERSONAL DEVELOPMENT

5.1 Short Courses and Workshops

- 2013:** Executive Leadership Academy
(Convened by the Center for Studies in Higher Education University of California, Berkeley)
Systematic Reviews and Meta-Analysis of Health Research
(Convened by the London School of Hygiene and Tropical Medicine)
- 2011:** International Programme on Leadership Management
(Convened by the University of Warwick)
Review of Programme Accreditation Criteria in the context of the 2nd Cycle of Institutional Audits
(Convened by the Council for Higher Education)
Funding Health Sciences Education in South African Universities
(convened by the National Department of Education)
- 2010:** Revitalizing Clinical Research in South Africa on the basis of the Report by the Academy of Sciences of South Africa
(convened by the Department of Science and Technology)
- 2007:** Enhancing Quality in Multi-Campus Institutions
(Convened by the Council for Higher Education, Higher Education Quality Committee)

- Funding Health Sciences Education in South African Universities
(convened by the National Department of Education)
- 2006:** Higher Education Leadership and Management
(convened by Higher Education South Africa)
MESAB Mentor National Workshop
(convened by Medical Education for South African Blacks – South Africa)
- 2005:** Performance Management
(convened by Higher Education South Africa)
Financing Health Sciences Education
(convened by the Western Cape Health Sciences Deans Forum)
- 2004:** Bio-analysis and Microanalysis of Antibiotic Concentrations at Target Sites
Pharmacokinetics and Pharmacodynamics – General Concepts
International Society of Antimicrobial pharmacology Workshop on Anti-Infectives
(convened by Ehrlich Institute, Nurnberg, Germany)
- 2003:** Bacterial Resistance: Mechanisms, Detection, Pharmacology and Molecular Epidemiology
(convened by the American Society of Microbiology)
- 2001:** Intensive Course in Epidemiology and Medical Statistics
Infectious Disease Modelling and its Applications
(convened by the London School of Hygiene and Tropical Medicine)
- 2000:** PE Biosystems PCR and Real Time Quantitative Seminar
- 1999:** Harnessing Timely and Comprehensive Surveillance Data to Enhance Antimicrobial Drug Discovery
Writing a Funding Proposal
Qualifications Specifications
- 1997:** Lecturing in Science and Engineering
Making Presentations
Supervising Student Projects and Dissertations
(These workshops were part of the Staff Development Initiative at Queen Mary & Westfield College, University of London, UK)
- 1996:** Pharmacy Department Modularisation Workshop
- 1994:** FRD Workshop on Scientific Writing
Pharmacy Curriculum Review
- 1993:** PSSA - Pharmacy Education Forum
Pharmacy Re-curricularisation Workshop
- 1992:** Instructional Strategies Workshop

6. CONSULTANCIES (Unremunerated)

- Apex Asphalt – Evaluation of a Foot Dryer to Prevent T pedis Infection/Athletes Foot
- Steritech - Spectrum of anti-Gram-positive & anti Gram-negative Activity of Organotin Quaternary Ammonium Disinfectant
- Adcock Ingram Critical Care - Intravenous Admixture Therapy
- South African Pharmacy Council - Legal and Ethical Issues of Intravenous Therapy
- Milborrow Pharmaceuticals - Aseptic Facility Design

7. OTHER

Addington Hospital

- Devised antibiotic reconstitution and stability guidelines.
- Devised labelling requirements for all medication
- Served on Aseptic Processing, Total Parenteral Nutrition (TPN) and Intravenous Therapy Committees
- Pharmacy representative at Therapeutic Drug Monitoring Clinics for Epileptics
- Delivered a series of lectures to nursing staff.

Wentworth Hospital

- Served on Aseptic Processing, TPN and Intravenous Therapy Committees
- Pharmacy representative at Therapeutic Drug Monitoring Clinics for Epileptics
- Responsible for training of pharmacist intern in accordance with SAPC regulations

King Edward VIII Hospital

- Devised quality control regimens for all manufactured medication
- Served on Aseptic Processing, TPN and Intravenous Therapy Committees
- Pharmacy representative at Therapeutic Drug Monitoring Clinics for Epileptics
- Delivered a series of lectures to nursing staff and pharmacists.