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Dr S Fourie
The Registrar
Rhodes University

Dear Dr Fourie,

Letter addressing my suitability relative to the requirements of the role of Dean

I was honoured to have been nominated for the position of Dean of the faculty of science. As requested, I present in this letter evidence for required competencies under the general themes of Education, Experience, Academic competencies, and Personal attributes following guidelines in the document *Conditions of Service for Dean of Faculty: Commerce, Humanities and Science (internal candidates)*.

1. Education

I have a PhD in solid state physics obtained in 2000 from the University of Edinburgh in Scotland, UK; an MPhil in the same subject from the University of Sussex, Brighton, UK, received in 1994 and a BSc with majors in Physics and Mathematics from the University of Malawi completed in 1989. I have been an academic for 23 years going back to the time I joined the University of Malawi as a Staff Associate, a position equivalent to junior Lecturer at Rhodes University. Between July 2001 and December 2001, I carried out postdoctoral research at the University of Zululand under the auspices of an NRF grant and also at the University of Edinburgh as a Royal Society (UK) Research Fellow. I joined Rhodes University as a Lecturer in 2002, was promoted to Senior Lecturer in 2006 and to Associate Professor in 2009.

2. Experience: Leadership, Management and Administration

2.2 Departmental

I am now in my second term as head of department (HOD) of physics having taken over in March 2010. Before that I had served as Acting HOD on a number of occasions. When I assumed responsibility as HOD I called a departmental review where we discussed and agreed strategies to address some long-standing problems of physics as a discipline at Rhodes University. In my opinion, we needed to improve and modernise our teaching methods, to

reduce the drop-out rates at First Year, to increase the number of postgraduate students resident at Rhodes University, and to increase our publications and research outputs. Since then there has been significant improvement in these areas. The progress made in all these areas has come from a collective effort and it would be disingenuous for me to claim all the credit for this. However, I do feel that I played my part in seeing off this change.

Regarding community engagement (CE), my contribution to this for the past five years or so, has been from a leadership position. Apart from personal involvement, I have as head of department, worked at getting my department to use its facilities and skills in several ventures that fall under the CE ambit. A key example is a workshop for Science teachers that we organized in collaboration with Mrs Joyce Sewry of the Department of Chemistry and Dr Ken Ngcoza of the Department of Education. I have also arranged for some of our Honours students to help teach in the Khula science project, a remedial teaching programme for grade 12 students.

2.2 Faculty

I was honoured to serve as Deputy Dean of Science between January 2012 and June 2013 and as Acting Deputy Dean between July and September 2011. This is a role I carried out with the generous support of Professor R Bernard, The Dean of Science. During my tenure, I represented faculty at the University research committee and headed the faculty of science research committee. We started a number of initiatives including a transferable skills programme. The aim of the programme was to improve the research capacity within faculty. The programme consisted of a range of workshops and brief courses designed to address particular research related problems with themes including Research Skills, Communication Skills and Computational Skills. I composed and led discussion on a set of guidelines for attributing authorship on scholarly documents, and a proposed an award to encourage academics to put in extra efforts to produce papers of very high quality or to achieve excellence in their research outputs. As Deputy Dean, I sat on various committees including senate and deputised for the Dean as required.

2.3 University-wide

The following is a summary of my contributions to leadership, management and administration:

Deputy Dean	Faculty of Science, January 2012 – July 2013
Acting Deputy Dean	Faculty of Science, July 2011 – September 2011
Member	Dean's election committee, Dec 2013 – Feb 2014
Member	Teaching and Learning Committee, 2009 - 2010
Member	Selection Committee for Nanotechnology Specialist, Department of Chemistry, July 2009
Member	Selection Committee for Office Administrator, Research Office, November 2009
Member	Selection Committee for Lecturer, Mathematics Department, March 2010
Member	Selection Committee for Lecturer, Mathematics Department, November 2010
Member	Selection Committee for Associate Professor\Professor, Computer Science, November 2010 – January 2011
Member	Selection Committee for vacancies in the Department of Physics, 2008, 2010
Member	Personal Promotions Committee, 2009, 2010, 2011
Member	Executive Committee, Visiting Lectures' Fund, 2011
Member	VC Research Awards Committee, 2009
Member	Senate, Faculties of Science, Pharmacy Board, 2010
Hall Fellow	Courtenay-Latimer Hall, 2008 – 2012
Chairman	Screening Committee for GS Sequencing Facility Manager (Instrument Scientist), Department of Microbiology, Biochemistry and Biotechnology, November 2012

Chairman	Screening Committee for Technician posts, Department of Chemistry, 2012
Member	Screening Committee for Instrumentation Scientist, Geology Department, 2012
Member	Selection Committee for vacancies in the Department of Statistics, 2012, 2014
Convenor	Faculty of Science Research Committee, 2012 – July 2013

3. Academic competencies

3.1 Teaching and Learning

I have taught across the undergraduate curriculum, at Honours and also supervise postgraduate students. My latest teaching portfolio is available from The Centre for Higher Education Research, Teaching and Learning (CHERTL). I have been involved in more general tasks concerned with improving the teaching and learning of physics in our department, at the university (I sat on the Teaching and Learning Committee from 2009 to 2010) and, in South Africa. Concerning the latter, I served on a national committee, the so-called Group of Experts convened to discuss how the teaching of physics in South Africa could be improved in light of certain identified problems. The resultant report[1] discussing a wide range of issues and recommendations has now been published. I am now a member on a committee to see through the implementation of recommendations in our report.

3.2 Research

The main theme of my research is the study of point-defects in insulators using luminescence methods. The ultimate objective of this work is to better understand the dynamics of irradiation-induced charge transfer between point defects in insulators. Apart from the aim to improve and refine the use of such materials in radiation dosimetry using luminescence methods, my interest also stems from the need to better understand the physics of defects whose study is an essential element of modern solid state physics.

The main areas of my research interest concern time-resolved optically stimulated luminescence and thermoluminescence of quartz, an ubiquitous natural mineral used in retrospective dosimetry and □-Al_2O_3:C, a ultra-sensitive synthetic dosimeter of topical research. I am also interested in applying the techniques to non-traditional materials in our context such as UHMWPE, a thermoplastic used in hip-joint prostheses and several materials of interest for use as luminophors. My research capabilities include development of instrumentation, experimentation, and development of theory.

Time-resolved optical stimulation of luminescence is a method we developed to enable us study the underlying processes leading to emission of luminescence. This is done by analysing spectra measured during optical stimulation. The utility of thermoluminescence in our work is its ability to monitor accurately changes in defect concentration in insulators. Experimentally, thermoluminescence produces temperature-dependent set of peaks which can then be analysed for information on properties of materials. These studies are complemented by mathematical modelling and also by use, at collaborating institutions world-wide, of other techniques such as radioluminescence, 3-D spectrometry, and positron annihilation. I established and run a research group on projects in the areas described.

The quality of my papers may be assessed by way of say, the *h*-index, quality of journals used or their impact. My work has also been featured in a number of books (listed in my CV). I have an NRF C2 rating (2007; 2012) and received the Vice Chancellor's Distinguished

[1] Available at http://www.saip.org.za/index.php/projects/review-of-physics-training-in-sa

Research Award in 2006. I am interested in fostering collaboration and have links or collaborated with colleagues from various institutions in the USA, Nigeria, Switzerland, South Africa, Italy, Malawi, Finland, Hong Kong, South Korea, Israel, UK, Sweden and Poland.

4. Professional activities

I have acted as a referee for national and international journals, reviewed research proposals, organised international conferences, served on organising committees of some, and presented plenary talks at others. I am a member of a national review on the teaching of physics, and have acted as external examiner for some universities. The following is a list of my professional activities going back 5 years or so.

4.1 International

Referee:	Journal of Luminescence, Radiation Measurements, Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Journal of Physics D: Applied Physics, Physics and Chemistry of Minerals, Physica Scripta, Materials Research Bulletin, Radiation Protection Dosimetry, Gondwana Research, Mediterranean Archaeology and Archaeometry, Applied Radiation and Isotopes, Journal of Physics and Chemistry of Solids, Journal of Applied Physics**,** The South African Institute of Physics Conference Series, South African Telecommunication and Networks Conference, Scientific Journals International, 3rd Walter Sisulu University International Research Conference
Most valued reviewer	Listed as one of 17 the most valued reviewers of 2013 world-wide by the editors of *Radiation Measurements* published by Elsevier, Netherlands[2]
Convenor	Bid team for the 15th International Conference on Luminescence and Electron Spin Resonance Dating, South Africa, 2017
External Assessor	Promotions committee, The University of Zimbabwe
Organiser	International Symposium on Luminescence, Port Elizabeth, 1 – 6 July 2012
Member	International Standing Committee, 2nd International Symposium on Luminescence in Archaeology, Lisbon, Portugal, 5 – 7 September 2012
External Examiner	Annamalai University, Annamalainagar, India; PhD thesis; 2013
Member	International Affairs Committee, 1st International Conference on New Trends in Luminescence and Phosphor Materials 2010, Hermosillo, Mexico, 4 – 9 October 2010
Member	International Standing Committee, 1st International Symposium on Luminescence in Archaeology, Delphi, Greece, 9 – 12 September 2009
Invited Speaker	The Virtual Conference on Nanoscale Science and Technology**,** Arkansas, USA, 24 – 29 July 2008
Co-organiser	International Seminar on Luminescence, University of Bern, Switzerland, 3 – 6 July 2007

4.2 National

Assessor	Department of Science and Technology review of the South Africa – Switzerland Research Cooperation Programme, June 2014
Member	Group of Experts[3], Council on Higher Education (CHE) and South African Institute of Physics Review on Undergraduate Physics Undergraduate Education in South Africa, October 2012 -
Member	Review panel, National Equipment Programme; National Nanotechnology Equipment Programme, NRF, April 2013
Member	Review panel, Competitive Programme for Rated Researchers; Competitive Support for Unrated Researchers, NRF; November 2013
Member	Review panel, Scholarships and Fellowships Programme; NRF; Nov. 2013

[2] Listed at http://www.journals.elsevier.com/radiation-measurements/news/thank-you-reviewers-rm/.
[3] Listed at http://www.saip.org.za/index.php/projects/review-of-physics-training-in-sa

Member	Review panel, Comp. Programme Rated Researchers, NRF; July 2012
Member	Review panel, South African Research Chairs Initiative, NRF, Nov 2011
Member	Review panel, National Equipment Programme, NRF; February 2011
Reviewer	Blue Skies Research Programme, NRF; 2010, 2011
Reviewer	Research and Innovation, Research and Advancement (Rating), NRF, June 2011
Referee	Competitive Programme for Rated Researchers, NRF, May 2010
Organiser	Symposium on Teaching and Learning of Physics in South Africa, SAIP Series on 'Review of Physics Training in South Africa, August 2010
External Examiner	University of Zululand, South Africa, 2010-2011
External Examiner	University of Johannesburg, South Africa, 2011
External Assessor	Selection interviews for Physics, Walter Sisulu University, June 2009
External Assessor	Selection interviews for Chemistry, Walter Sisulu University, Sept. 2009

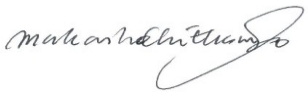
5. Personal attributes

The role profile for the position of Dean lists many desirable personal qualities e.g. champions transformation and diversity, able to withstand criticism, culturally aware and sensitive *etc*. These to me are ideals one has to try to live up to. For example, decisions of a Dean affect more people than those of an HOD and are subject to far more criticism. I will have to learn to handle criticism at this scale. There are many other things that I feel I could know better for example, many of the university policies now in use, details of various curricula in the science faculty and current issues in education that may have an impact on our work.

6. Summary

The Deanship to me is a service to colleagues in the same way as being head of department is. The role profile for this position is extremely detailed and on the face of it, intimidating. The paradox of this position, as it seems to me, is that a good dean is one experienced in the position. No one is trained for this position. Although the little experience in administration I have had as head of department or as deputy dean may be handy, I am willing to learn from more experience colleagues and to try my best to be effective.

Yours sincerely



Makaiko Chithambo