

The University of Trinidad and Tobago

# Annual Report 2007



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## The Mandate of The University of Trinidad and Tobago

UTT was established in 2004 to expand tertiary education opportunities in areas integral to national development.

The University's focus on learning and discovery in the fields of education, science, arts and technology is driven by its mandate to facilitate social and cultural growth, economic competitiveness and wealth generation.

In pursuit of these objectives, UTT is being developed to be a world-class training institution with a significant innovation and development capability.

Our value system recognises that *Scholarly Excellence* must be constantly nurtured, while our operating philosophy is premised on the concept of *Excellence* – not as an end-point, but as a continuum of ongoing life-long learning and improvement.



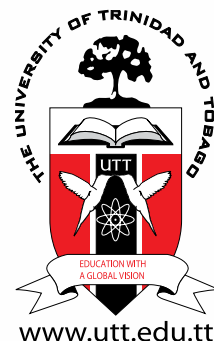


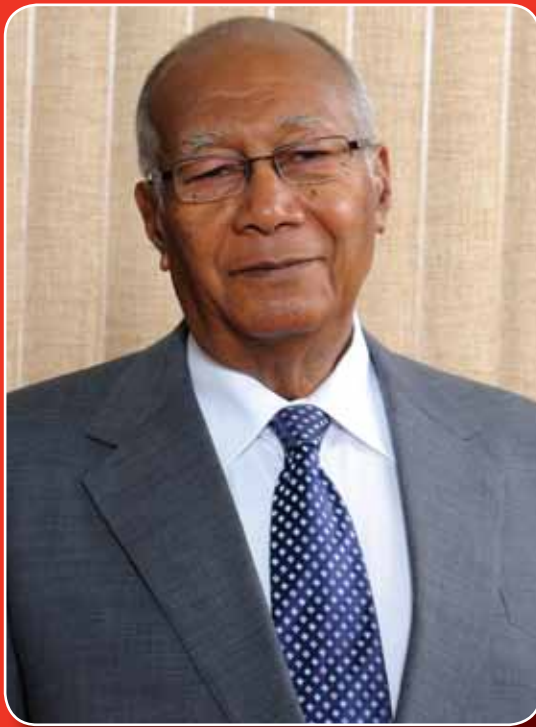


**Vision** The Vision of UTT is to be the National Institution of higher learning and research for socio-economic and technological development that:

- (a) Inculcates in the graduates a set of overarching skills – metaskills – that help them navigate the new and emerging technologies in the national and global contexts, and
- (b) Through its R&D activities, brings and keeps Trinidad and Tobago in the vanguard of engineering and technology in niche areas of key importance, such as natural gas is to the nation.

**Mission** To be an entrepreneurial university designed to discover and develop entrepreneurs, commercialise research and development, and spawn companies for wealth generation and sustainable job creation towards the equitable enhancement of the quality of life of all individuals, families and communities of the Republic of Trinidad and Tobago and the Caribbean.





*President of the Republic  
of Trinidad and Tobago and  
Chancellor of The University  
of Trinidad and Tobago  
His Excellency  
Professor George Maxwell Richards,  
T.C., C.M.T., Ph.D.*



*The Honourable Christine Kangaloo  
Minister of Science, Technology and  
Tertiary Education  
Line Minister responsible for  
The University of Trinidad and Tobago*

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In our 2nd Annual Report (2006) published in November 2008, we sought to demonstrate how UTT's strategic development thrust aligned itself to the five Pillars underlying the Vision 2020 Draft National Strategic Plan of the Government. This Annual Report (2007) continues that demonstration with a particular emphasis on Pillar 1 "Developing Innovative People", Pillar 3 "Enabling Competitive Business" and Pillar 5 "Promoting Effective Government". UTT's efforts in this regard are outlined in sections 6, 7, and 11 of this Report where the rationale and activities of the Academy for the Performing Arts, the Centre for Production Systems and the Institute for Criminology and Public Safety are presented.

A review of national development successes of the latter 20th Century reveals the underlying need not only to have a skilled human resource base, but to utilise such a base in industries with significant value-added potential, either through the application of knowledge or through the generation of innovative processes. In the increasingly competitive global market, the focus is no longer strictly on the level of competence, but on how efficiently those competencies can be applied in different sectoral frameworks to generate a quality output.

It is in this context that the **Centre for Production Systems** was established, having primary responsibility for "Entrepreneurship and Commercial Studies," "Design and Manufacturing Systems" and "Biosciences, Agriculture and Food Technologies." It is also in this context that work of the **Academy for the Performing Arts** will allow for the development of a non-traditional niche industry which will be based on a diverse and multicultural heritage that exists nowhere else in the world. But productivity, output and culture can only be maximised where individuals and organisations feel a sense of security and where there is respect for the rule of law. UTT's **Institute for Criminology and Public Safety** will bring resources to bear in identifying the determinants and manifestations of crime nationally. The Institute will also provide options for addressing these drivers and provide

support to the various groups involved in efforts to stabilise and recover recent trends in this area.

### Centre for Production Systems

The 2009–2010 Global Competitiveness Report emphasises that economies which focus on productivity enhancements are able to build present and future prosperity and minimise business cycle downturns, thereby allowing for sustainable development and overall growth potential. This, however, requires several elements which are precursors to enhancing competitiveness at industry or national level. Within the context of Trinidad and Tobago's policy as an emerging economy, Government has focused on several of these elements within the Vision 2020 Operational Plan 2007-2010 – a framework which focuses on productivity enhancement from a systems, economic and human resource perspective. In particular, UTT's influence addresses needs in Higher education and training, Technological readiness, Business sophistication and Innovation, whereby the efforts of the University will bolster strategies being pursued by Government and the Private sector in improving productivity and competitiveness within the country.

And even while the global economic downturn has impacted competitiveness in world economies, the 2009-2010 data for Trinidad and Tobago shows a marginal improvement in performance from the 2008 ranking, with a score of 3.91. This represents the first advance in performance since 2006, and the reversal of a downward trend over the previous five years.

### Period Performance

2008 – 2009	3.85
2007 – 2008	3.88
2006 – 2007	4.03
2005 – 2006	3.81
2004 – 2005	4.12

Such a decline had not gone unnoticed, with the Manufacturing Association, Chambers of Commerce, Government, Trade Unions and other associated interest groups noting the need for improved performance if Trinidad and Tobago is to develop and meet the expectations of its citizens. In fact, despite being the only CARICOM economy benefiting from a well-developed energy sector, Trinidad and Tobago has ranked behind Barbados and Jamaica in the Global Competitiveness ratings since 2006, only marginally moving ahead of Jamaica in the current Report.

Given that the Vision 2020 Operational Plan 2007-2010 addresses the need to diversify the structure of production so that reduced dependence on the energy sector can be realised, and given that the Plan also recognises that “the development and exploitation of novel products, processes, services and systems and their incremental upgrading is the main driver of long-run productivity growth for competitive businesses in developed societies,” UTT, as part of its mandate for providing ‘Education with a Global Vision’ is focused on innovation and is pressing ahead with the development of academic and research programmes that can transform targeted sectors.

In fact, UTT’s approach is a reflection of the position adopted in the Operational Plan that “success in innovation will be largely a function of our ability to generate new ideas, methods and approaches and successfully apply these to our production processes in ways which enhance performance and output”. This approach is seen in the strategy for the Centre for Production Systems where the programmes being developed in business, agriculture and manufacturing address not only the theoretical or scientific aspects, but the principles of entrepreneurship and integrated systems driven by research and evidence.

Having fostered partnerships with stakeholders in introducing the programmes, strategic alliances have been established with world-renowned institutions – such as Cambridge

Manufacturing Industry Links Limited (University of Cambridge – UK) for institutional and programmatic support in the development of the respective programmes within the Centre. As a result of these efforts, UTT was able to launch the M.Sc. in Industrial Innovation, Entrepreneurship and Management (IIEEM), a first of its kind programme in the Caribbean focusing on technology, innovation and entrepreneurship. This programme is seen as central to generating a cadre of professionals who can initiate successful new ideas and develop globally competitive businesses from these opportunities.

Another milestone followed in 2008, when UTT was awarded the 2008 Investors’ Prize at the prestigious Global Social Entrepreneurship Competition, beating out 15 other finalists from Ivy League tertiary institutions such as Cornell University and Harvard University, as well as the University of Georgia, the University of Washington in the United States, the Indian University of Management and the University of Pretoria in South Africa. Locally, graduates of these programmes are sought after by industry, and several have embarked on start-up projects which will generate future employment opportunities.

A similar approach is being pursued for the programmes in Biosciences, Agriculture and Food Technologies. Local agricultural production has been on the decline over the last three decades, in part because higher wages and benefits in the industrial and service sectors have attracted a substantial amount of labour. UTT intends to implement a transitional programme which shifts the focus from traditional agriculture towards a “business-oriented approach” both from the management and production perspectives. The biosciences, agriculture and food technologies programme will accordingly be positioned such that Trinidad and Tobago can become a major international producer of a number of agricultural products. Further, by highlighting R&D in biosciences, agriculture and food technologies integrated with technology acquisition/utilisation, operations, market value enhancement and

commercialisation, a new generation of food and agricultural entrepreneurs and biotechnologists will be produced who will be better positioned to make evidence-based and informed judgments on implementing best practices and developing appropriate proposals that will enhance the sector over time.

### Academy for the Performing Arts

It is anticipated that work of the Academy for the Performing Arts will serve a dual purpose. From an economic standpoint, developing our world-renowned culture with its rich mix of indigenous, European, Asian, African and Latin heritages provides opportunities to generate significant returns. Our unique influences allow several options for spearheading the establishment of additional, non-traditional pathways which can showcase the creativity and inventiveness of our islands. But in so doing, the Academy will also allow for the further development of the culture of Trinidad and Tobago, by highlighting and enhancing the elements which currently exist, by conducting research into areas that are not well documented or continue to survive only in the memory of a dwindling few pioneers, or by introducing new elements which will be integrated into the indigenous heritage in our own "Trini way".

### Institute for Criminology and Public Safety

It is recognised that, as a cornerstone of civilised society, no country will achieve its full potential if the principles of trust and fair play are constantly challenged, and a general sense of anarchy pervades. Maslow's work highlighting this need at the individual level suggests that, if not addressed, individuals, and by extension communities and countries, cannot aspire to satisfying more complex higher-order aspirations. The Institute for Criminology and Public Safety will adopt a two-pronged agenda for the expanding challenges being experienced

due to the existing level of illegal activity in the country. Work has already commenced on the causes and implications of criminal activity, and several training and development initiatives are to be launched which will support the relevant entities in efforts to preempt, identify or more effectively prosecute incidents of illegal activity.

### Conclusion

As an emerging national institution of higher education, UTT continues to support the Vision 2020 pillars. The institution has worked to introduce a full spectrum of offerings in several areas linked to the National Strategic Plan, highlighting value-added research and the integration of technology in all fields. By introducing specific programmes in enterprise systems, manufacturing systems, biosciences and food technologies, the performing arts and criminology, as well as emphasising cross-disciplinary research efforts integrating elements of these programmes with other disciplines, the institution is confident that it will continue to be relevant to the needs of the national community, and be able to facilitate the advancement of Trinidad and Tobago.

## 2.0 NOTICE OF THE 2009 FOURTH (4th) ANNUAL MEETING OF MEMBERS OF UTT

NOTICE is hereby given that the 2009 **Fourth (4th) Annual Meeting of the Members** of The University of Trinidad and Tobago is scheduled for **Tuesday 2009 September 22** at **10.30 a.m.\*** at the Board Room, UTT O'Meara Campus for the following purposes:

### Ordinary Business

1. To confirm Minutes of the Special Meeting of Members held on 2008 November 19.
2. To receive and consider the Audited Financial Statements and the Auditor's Report for the Year ended 2007 September 30.
3. To consider the Report of the Board of Governors.
4. To re-appoint Messrs. Ernst & Young as the Auditors of the University to hold office until the close of the next Annual Meeting.
5. To acknowledge appointments to the Board of Governors.
6. Any Other Business.

**BY ORDER OF THE BOARD OF GOVERNORS**



**Corporate Secretary**  
**2009 September 14**

### NOTES:

1. Service Contracts have been entered and are in force between the University and two of its Directors as at September 2009.
2. A Member entitled to attend and vote at the Meeting is entitled to appoint one or more proxies to attend and vote instead of him/her. A proxy need not be a Member. Attached is a proxy form for your convenience which must be completed and signed in accordance with the Notes on the Proxy Form and then deposited with the Corporate Secretary at the Registered Office of the Company at least 48 hours before the time appointed for the Meeting.
3. A Member that is a body corporate may, in lieu of appointing a proxy, authorise an individual by resolution of its directors or its governing body to represent it at the Meeting.

*\* This Meeting was subsequently postponed and held on 2009 October 6.*

### 3.0 THE UNIVERSITY OF TRINIDAD AND TOBAGO SIGNATURE BUILDING COMPLEX TAMANA INTECH PARK, WALLERFIELD



*The University of Trinidad and Tobago (UTT) Signature Building Complex, Tamana InTech Park, Wallerfield (Architectural Sketch).*

The Tamana InTech Park is being strategically developed to become the home of 21st century innovative, cutting-edge industries. Its location in Wallerfield sets it in a green space that will be protected as far as practicable from environmental degradation. One major policy for the operation of the Tamana InTech Park is that every effort must be made by occupants to minimise the entry of vehicles on the park. The initiative is aimed at encouraging and supporting industries that are knowledge-based. The backbone for the creation of the knowledge-based asset is The University of Trinidad and Tobago which will be the largest single entity on the park.

The University is currently constructing its Main Campus, the first phase being commonly known as the Signature Building Complex. The project consists of the construction of buildings for classrooms, laboratories, offices, and ancillary services to facilitate a projected start-up student population of five thousand persons. Between the two main blocks is located a Central Plaza that will be the hub of student activities on the campus. There is also a Public Safety and Administrative Building which will be the nerve centre of the security and safety systems on the campus. In addition, a short distance away, a Central Plant Complex will house all the support



*Signature Building Complex under construction, September 2009.*

services for the functionality of the buildings, both for Phase 1 and subsequent Phases of construction.

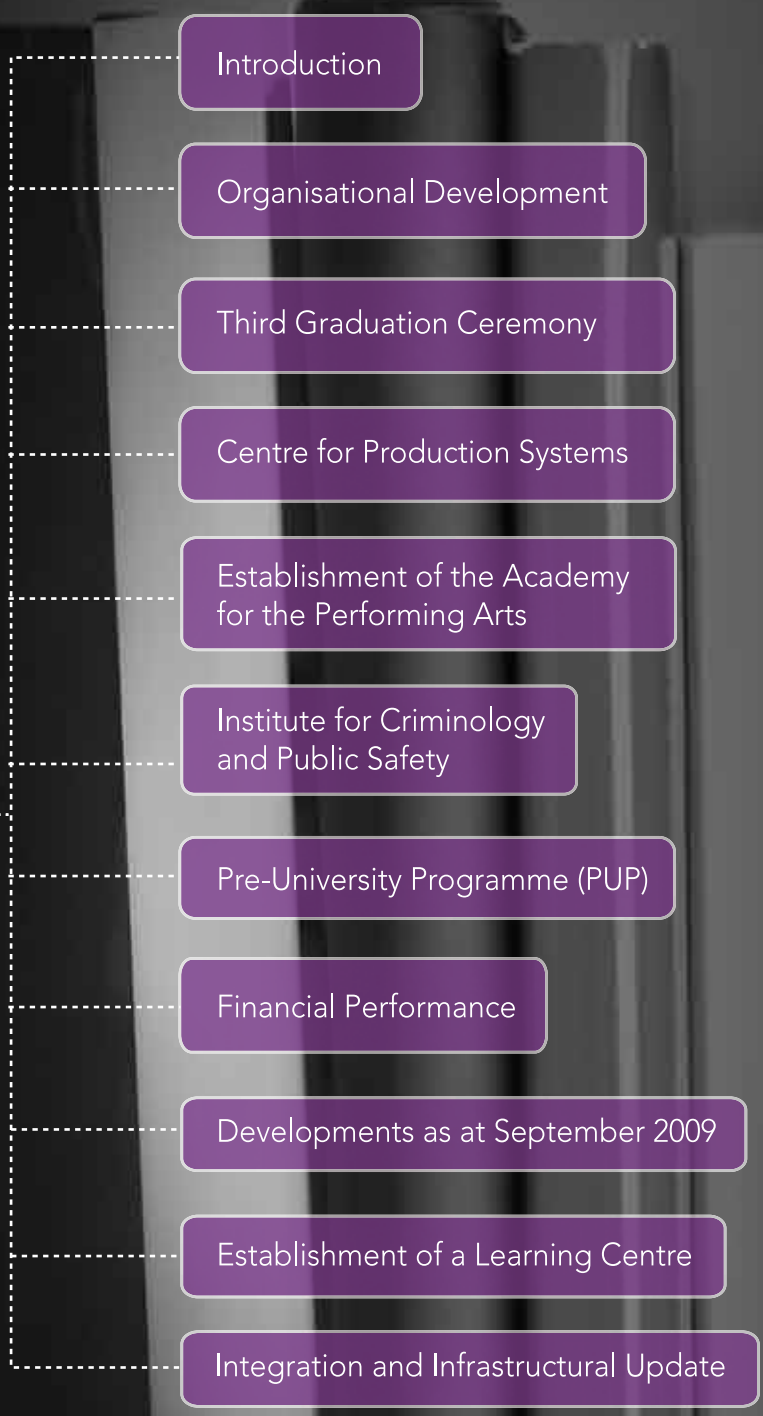
The east block comprises four six-storey buildings that will serve mainly as offices, library, student affairs, learning spaces and administrative support, including offices of the Board of Governors, President and Provost. The west block comprises two five-storey buildings that will house classrooms, laboratories, auditorium, bookshops, cafeterias and common rooms for faculty and students. All buildings

will be outfitted with cutting-edge technology that will put them in the modern, smart, eco-friendly category.

The actual construction started in 2008 and is progressing apace. This project is scheduled to be completed before the end of 2010. Thereafter UTT's campus at Tamana InTech Park will serve as a centre for creation of human capital with the skill sets that ably support the future economic development of Trinidad and Tobago.

REPORT OF THE PRESIDENT







**Kenneth Julien, T.C. (Professor Emeritus) President**

*Highlights for the period include the visit of Prince Charles and the Duchess of Cornwall, representatives from the African Energy Ministers, a delegation headed by the Prime Minister of Grenada, and, under the aegis of the Indian High Commissioner, a delegation from the National Institute of Fashion Technology (India).*

### Introduction

We are pleased to submit our Third Annual Report 2007 at this time and, following the method we adopted in the previous Annual Reports 2005 and 2006 where we reported on the more recent events of the University up to the period September 2008, this Report will in addition outline the more recent events of the University up to the period September 2009.

### Organisational Development

The data below depicts the rapid growth, at a minimum of 50% , in respect of student numbers between 2007/8 and 2009/10:

Numbers of students by level as at September:

	<u>2007</u>	<u>2009</u>
Postgraduate	126	169
Undergraduate	2,360	3,585
Diploma	144	2,354
Certificate	1,832	121
Pre-University Programme	843	504
	<u>5,305</u>	<u>6,733</u>

Final student enrolment for the academic year 2009/10 is expected to be approximately 7,500.

Greater details of our programmes will be outlined in the Report of the Provost in section 5, but suffice it to say that over the five-year period the University has placed increasing emphasis on Postgraduate Studies and Research (more details are provided in section 12).

### Third Graduation Ceremony

In November 2007, the University hosted its third graduation ceremony. Three hundred and ninety-four (394) students received Master of Science and Bachelor of Applied Engineering degrees, Diplomas and Certificates in their

respective fields. To commemorate its third graduation exercise, the University awarded Honorary Doctorates to the following:

**Mr. Ralph de Boissière:** An acclaimed novelist, de Boissière wrote extensively on Trinidad through his novels, *Crown Jewel*, *Rum and Coca-Cola*, *Homeless in Paradise* and *Call of the Rainbow*. His novels captured Trinidad as it existed both in pre- and post-World War II and the issues which were unique to each era.

**Mr. Malcolm A. Jones:** A graduate both of the University of the West Indies (Bachelor of Science degree (honours) in Chemical Engineering) and Queen's University, Ontario, Canada, (Master's in Chemical Engineering), Mr. Jones has held positions with Texaco Trinidad Inc., the Ministry of Petroleum and Mines and with Trinidad Nitrogen Company Ltd., where he served as President. His professional career also spanned a 12-year period with The National Gas Company of Trinidad and Tobago Ltd.

**Mr. Rampersad Motilal:** Mr. Motilal earned degrees in Mechanical Engineering (1976) and Production Engineering and Management (1979) at the University of the West Indies, St. Augustine. He later secured an Executive Master's in Business Administration (EMBA); graduating, with distinction, as the top student in the Class of 1995. Mr. Motilal has served as a Director to the Board of CL Financial Ltd. and has held the positions of Chief Executive Officer and Managing Director on Methanol Holdings (Trinidad) Ltd; as well as Director of the Formaldehyde Council and Methanol Institute (MI) in Washington DC, USA.

### Centre for Production Systems

Considerable time and effort have been invested in programme review and restructuring as deemed appropriate. One of the key initiatives resulting from this activity is the establishment of a Centre for Production Systems which incorporates programmes in Design and Manufacturing Engineering, including the Master's of Science in Innovation, Entrepreneurship and Management, and in Biosciences, Agriculture and Food Technologies.

Entrepreneurship and innovation are key learning objectives incorporated in the curricula in both cases. It is envisioned that the graduates from these programmes will acquire a wide range of knowledge and skills which will enable them to play a key role in transforming the society's business and agricultural landscape.

### Establishment of the Academy for the Performing Arts

In keeping with its thrust to provide nationals with the opportunity to pursue a wide range of programmes locally, the Academy for the Performing Arts was established in 2007 to provide educational opportunities to talented and dedicated students of Trinidad and Tobago and the Caribbean region. The Academy offers programmes in the areas of music, theatre and dance, design technologies and music technology at the tertiary level, leading to a Certificate, Diploma and/or Bachelor's Degree in Fine Arts.

As pertains with all of UTT's programme offerings, emphasis is being placed on producing well-rounded and responsible graduates whose creative talents can be utilised for the benefit of a culturally diverse society. Pursuant with this perspective in the area of music, both Caribbean and Indo-classical music will be offered.

### Institute for Criminology and Public Safety

The work of the nascent Institute for Criminology and Public Safety (ICPS) is expected to accelerate and take on increasing importance with several teaching and research programmes focused on this challenging phenomena of crime, security and public safety and their impact on economic development. The ICPS work programme outlines partnerships with various public-sector agencies directly involved with the fight against crime (the Ministries of National Security, Legal Affairs and the Attorney General), associated Ministries impacted by the effects of crime and criminal activity (Health, Education, Social Development, Community Development and Gender Affairs), as well as the

## 4.0 REPORT OF THE PRESIDENT

private sector and various NGOs and CBOs. It is hoped that the data provided by this Institute through its research efforts, and the practical assistance it will provide in enhancing the knowledge of personnel directly involved in the fight against crime, will positively influence the level of security in the country over time.

### Pre-University Programme (PUP)

Mention has been made in previous annual reports of the Pre-University Programme introduced in 2007 as a means of strengthening the academic foundation of prospective entrants to UTT Diploma programmes without the requisite admission requirements.

Over 600 students have successfully completed this programme to date and qualified for matriculation to Diploma programmes, including 14 from Tobago. It is instructive and a testament to the programme's success that a recent performance review of Diploma students conducted at the Point Lisas, John S. Donaldson and San Fernando campuses has determined that the performance of the Cohort 1 PUP students admitted to the Diploma programme has been on par or even marginally above that of their counterparts who were admitted directly after attainment of the CXC/O'Level qualification.

### Financial Performance 2006/7

The operations surplus for the period amounted to \$19 million fuelled substantially by the contribution of our Professional Educational Unit which recorded a positive excess of \$8.6 million. Our accumulated Reserves from inception in 2004 to 2007 now total \$32.6 million to assist in financing the future expansion of the University's staffing establishment to meet our expected growing programme offerings to the student population.

The Government provided \$134 million in capital grants to fund our development programme, particularly with respect to the construction of the new Campuses at O'Meara, Chaguaramas and Tamana InTech Park. Of the \$154 million spent in the year for capital works, these three new campuses accounted for \$127 million of such outlays.

The gross asset base of the University at the end of the year stood at \$762 million – up from \$575 million of the previous year.

### Developments as at September 2009

#### Delegations

UTT has hosted several delegations at its campus locations during the past several months. These delegations represent a wide cross-section of local and international interests, from eminent persons in public life, to private-sector industry, to NGOs and CBOs, and Government representatives involved in building bilateral relationships.

Highlights included the visit of Prince Charles and the Duchess of Cornwall, representatives from the African Energy Ministers, a delegation headed by the Prime Minister of Grenada, and, under the aegis of the Indian High Commissioner, a delegation from the National Institute of Fashion Technology (India).

#### National Initiatives

But beyond the hosting of delegations, UTT directly contributed to two major national initiatives during the past year. One such activity – the Summit of the Americas – allowed the country to host the leaders of the Western Hemisphere as they deliberated on tangible interventions which would positively impact on the lives of peoples throughout the Americas. In keeping with the umbrella theme of the Summit – Human Prosperity, Energy Security and Environmental Sustainability – UTT staff and students were invited to participate in the Youth Forum which was developed around the concept of Alliances for the 21st Century, with Professor Denise Thompson being a panel member for the Interactive Theme Session on Energy Security: Innovation and Creativity to Secure Our Future.

In addition, several other UTT staff provided varying levels of support to the Summit Secretariat in the planning and roll-out of Summit Activities, including Ms. Judy Lake (Vice President Information Technology Services) and Professors Jeannette Morris and Anthony Joseph. More recently, UTT has been



*UTT Graduate Ms. Khadisha Williams and her supervisor Mr. Alban St. Bernard.*

**Khadisha Williams:** Graduated in 2008,  
M.Sc. – Information and Communications Technology

**Employer:** Ministry of Energy and Energy Industries

*“Ms. Khadisha Williams holds the position of Systems Analyst I in the Information Technology Unit of the Ministry of Energy and Energy Industries. She joined the Ministry in August 2003, after attaining a B.Sc. in Computer Information Systems from The University of the Southern Caribbean.*

*Khadisha’s responsibilities at the Ministry include, among other things: installation,*

*upgrading and end-user support for technical applications, regular backup of all databases used by the technical applications, maintenance of documentation on work procedures and participation in special project teams as required. A highly motivated and ambitious person, she has since furthered her studies with the recent completion of the M.Sc. in ICT, from The University of Trinidad and Tobago (UTT).”*

**Supervisor:** Mr. Alban St Bernard  
Systems Analyst II  
Ministry of Energy and  
Energy Industries

## 4.0 REPORT OF THE PRESIDENT

participating as a member of an Inter-Ministerial Committee which has been established to action the follow-up activities related to the Summit Goals and Declaration.

UTT also supported the hosting of the African Energy Ministers in May 2009. At the beginning of the year, a team of UTT senior executives paid a visit to several African countries to hold discussions on support for training and education initiatives that could be jointly pursued with the University. Subsequently, these discussions were advanced when the Energy Ministers of Government and senior experts from several African nations including

Cote D'Ivoire, Gabon, Ghana, Nigeria, Tanzania and Uganda held discussions in Trinidad with local stakeholders on developing and diversifying their energy sectors. Several of these discussions included UTT, which was seen as a model for developing the human resource base needed to maximise the benefit of the existing energy reserves in these countries. But beyond immediate needs, the strategic approach being taken by UTT in creating a platform for long-run national diversification also provided the visiting representatives with a framework for expanding the training and education opportunities in their respective countries.



**Visit to Rwanda, January 2009:** Members of UTT visit the Université Nationale du Rwanda (National University of Rwanda). In photo from left: Mr. Oliver Flax, Mr. Rodney Jagai, Trinidad and Tobago's High Commissioner to Uganda HH Patrick Edwards, Professor Adel Sharaf, Professor Verdiana Masanja (Université Nationale du Rwanda), Ms. Eva Paul (Ministry of Infrastructure, Rwanda) and Mr. Zameer Mohammed.

### Health Sciences Initiative

As part of the Trinidad and Tobago Health Sciences Initiative which was featured in our earlier Annual Report (2005), UTT continues to build capacity in its Master's in Health Administration Programme in which 40 students are currently pursuing studies. UTT has also partnered with the University of the Southern Caribbean in establishing a temporary research laboratory for the Caribbean Herbal Medicine Research Institute, while long-term infrastructure is being designed at Waterloo, Central Trinidad. This will allow for an accelerated investigation of short-listed remedies which have been claimed

to have therapeutic effects for persons suffering from several common ailments.

The public-sector projects continue to be mobilised and/or be implemented, with a Ministerial Committee, established by the Cabinet of Trinidad and Tobago, providing guidance and oversight to the Cardiovascular Services Initiative and Diabetes Services Initiative which have been approved for implementation. Recommendations are also being considered by this Committee for the delivery of national health services in the context of the proposed investment in hospital infrastructure proposed by the Government.



**Summit of the Americas, 2009, Hyatt Regency Hotel Trinidad and Tobago:**  
UTT's Senior Instructor Mr. Aaron Ameeralli (centre) with students of the M.Sc. IIEM programme.  
From left to right: Priscilla Bahaw, Laura Leekam, Debbie Sammy and Dziko Woodley.

## 4.0 REPORT OF THE PRESIDENT

### Establishment of a Learning Centre

The process of providing high capacity Internet access and electronically linking all campuses has now been completed. However, in keeping with its recognition of the importance of technology in creating a dynamic learning environment, UTT has now established a Learning Centre to facilitate and actively promote technology-enabled teaching, learning and research. Through the aegis of the Centre, professional development workshops on instructional design, use of course management systems and problem-based learning have been conducted at UTT teaching campuses. Additionally, as part of the thrust, Learning Commons which provide staff and students with a one-stop shop to address their learning, teaching and research needs have been established at two campuses and plans are in train to establish more at other campuses over the next year.

### Integration and Infrastructural Update

UTT has continued to work assiduously towards the full integration of those institutions assigned to it by the Government. In this context several joint meetings of UTT and the Ministry of Agriculture, Land and Marine Resources have been held and a Business Plan formulated for use of the resources at the Sugarcane Feed Centre and Aripo Livestock Station for the Biosciences, Agriculture and Food Technologies Programme (see section 8). NIHERST has also been actively engaged in the conceptualisation and promotion of our Service Learning and Community Outreach initiatives. The latter aspect involves the implementation by 2010 of a coherent outreach programme informed by a shared University mission and commitment

to core UTT goals. This would build on the Institute's Science Popularisation and Innovation Programmes and be expanded to encompass the Arts, Sports, Humanities, and other areas which are of particular interest to various communities.

Major infrastructural works focused on i) the O'Meara Campus where construction of the Main Campus Building, Graduation Pavilion, Administration Building, Sporting Facilities and External Infrastructure Works were all completed and operational at a total cost of TT\$166.8 million; and ii) the Chaguaramas Campus where construction of the Main Campus Building, Workshop Building, Training Pool, Fire-Ground and related Infrastructure Works are almost fully complete: the estimated total construction cost of the above being TT\$119.6 million. Additional enhancement works including the construction of a 36,000 sq. ft. pre-engineered building for new programmes are currently in progress. Construction of the Tobago Campus has not yet commenced owing to a delay in the finalisation of the site.

### Conclusion

The prevailing theme for UTT in relation to all of these efforts and initiatives, some of which are expanded upon later in this Annual Report, has been to provide students with an educational experience consonant with the demands of a Twenty-First Century educational environment. The process is ongoing and subsequent Reports will continue to provide feedback on developments. However it must be emphasised that staff and students are all committed to ensuring that The University of Trinidad and Tobago's activities redound to the benefit of the national community.



UTT Graduate Ms. Arlene Wallace-Romero and her supervisor Mr. Averde Pantin.

**Arlene Wallace-Romero:** Graduated in 2008 – M.Sc. – Industrial Innovation Entrepreneurship and Management (IIEEM)

**Employer:** Point Lisas Port Development Corporation (PLIPDECO)

“Arlene Wallace-Romero commands the respect of her peers as she undertakes her core function as the sole Business Analyst with the Point Lisas Industrial Port Development Corporation (PLIPDECO). She is responsible for researching, analysing and evaluating business processes. Her primary focus is to quantitatively and qualitatively analyse all aspects of the business model and recommend improvements. Her effective networking and coordination of a multidisciplinary team has greatly added

value and contributed to the future of PLIPDECO.

Having worked with Arlene before she pursued her studies at The University of Trinidad and Tobago (UTT), I have found that she has a more comprehensive sense of the business environment. Arlene is now better able to communicate at a higher level in the organisation, since obtaining the M.Sc. in Industrial Innovation, Entrepreneurship and Management (IIEEM) at UTT.”

**Supervisor:** Averde Pantin  
Vice President, Special Projects  
Point Lisas Industrial Port Development Corporation (PLIPDECO)

REPORT OF THE PROVOST





Introduction

The Teaching Programmes

Postgraduate Studies and Research

Research Programmes

Graduate Output 2005-2008  
and Projections for Enrolment

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Registration and Accreditation Status



*Professor David McGaw, Provost*

### Introduction

In its fifth year of operation to 2008/9, UTT moved to further broaden its academic offerings with the introduction of programmes in Fashion and Design, expansion of its programmes in Sports and Leisure Studies, and the planning of new programmes in Marine Sciences, Agriculture, the Performing Arts and Criminology and Public Safety. UTT's portfolio has increased more than 500 per cent since 2004. At inception, the University offered a total of 17 programmes in seven engineering disciplines – petroleum, chemical, mechanical, electrical, computer, telecommunications and process and utilities. During the 2010 academic year, the Institution expects to offer more than 80 programmes over a wide range of disciplines.

In designing these new programmes, key considerations were the relevance to national development, the maximisation of access to tertiary education, and the provision of vertical

integration of programmes, where appropriate. This allows for students to attain their ultimate level in accordance with ability and personal choice. The Organisational Structure of the Academic function is structured along sectoral lines as shown in Figure 1: this approach allowing for a more multidisciplinary approach to both programme delivery and the organisation of the various research programmes.

### The Teaching Programmes

#### Programme Structure

At the completion of the registration process with the Accreditation Council of Trinidad and Tobago (ACTT) in 2009, UTT was approved to deliver qualifications spanning the full spectrum from Certificate to Doctoral, including 27 bachelor's programmes and 38 postgraduate qualifications, of which 12 are at the doctoral level. It should also be noted that of the available programmes, approximately 20 (or 25 per cent of offerings) were new areas introduced since 2007, and this excludes the several programmes in the Performing Arts and Criminology and Public Safety which are now at an advanced stage of development. Several of these programmes have also been the subject of review during the past year, ensuring that the teaching and research are relevant to the needs of industry and producing a quality of student that can effectively support the associated organisations.

As with previous Reports, updates on the various programmes – Pre-University, Certificate, Diploma, Bachelor's, Master's and Doctoral – are presented under the various Schools and Academies through which these programmes are delivered.

#### Pre-University Programme

The Pre-University Programme (PUP) registered its second cohort in 2008/9 with 295 students achieving the standard for moving into the mainstream programmes. Based on reviews undertaken at three campuses, the performance of the Cohort 1 PUP students admitted to the Diploma programme has been on par or even

marginally above that of their counterparts who were admitted directly after completion of the O'Level qualification, particularly in the fields of Chemical, Computer, Mechanical and Petroleum Engineering. Over 500 students are registered to date for the 2009/10 Academic Year, and, based on the potential shown during these very early evaluations, UTT will continue to monitor progress and make appropriate modifications to facilitate the development of the PUP as a catchment for students wishing to refocus on the attainment of a tertiary-level qualification.

### **School of Science, Engineering and Technology**

The current offerings at the different levels may be summarised as follows:

- One Certificate Programme in Process Operations;
- Ten National Engineering Technicians' Diploma (NETD) Programmes in the various Engineering and IT Disciplines;
- Maritime Diploma Programmes training both Deck Officers and Engineering Officers;
- Four Diploma Programmes in Agriculture and Forestry;
- Two Diploma Programmes in Animation and Visual Communications Design;
- BAsC/M.Eng programmes in seven Engineering and IT disciplines.

The first graduates (63) from the original B.Sc. in Engineering Programmes in ICT, Manufacturing Engineering, Petroleum Engineering, and in Process and Utilities Engineering completed their programmes in June 2009. The second and last cohort will complete their programmes in June 2010.

These programmes have been replaced by the 3-Year BAsC and 4-Year M.Eng Programmes which were introduced for the first time in the 2007/8 Academic Year, and are offered both Full Time and Part Time. The number of disciplines was expanded in 2008/9 to include Biomedical Engineering and Civil Engineering, the first students on these programmes entering the second year in 2009/10.

The B.Tech (with UWI) and B.Eng programmes which are at the Incorporated Engineer level are being phased out over the next two years.

The first graduates from the two Maritime Diploma Programmes completed their studies in 2008/9. This area remains a popular choice for local students seeking training in non-traditional fields, and interest has also been increasing from several other Caribbean states.

The traditional ECIAF Diploma Programmes in Agriculture and Forestry continued, as did the newer UTT Diploma Programmes in Ornamental Horticulture and Animal Health, Production and Veterinary Public Health. However, a new thrust in Agriculture was developed in 2008/9, background to this initiative being detailed in section 8 of this Annual Report.

The new Diploma Programme in Animation initiated at the John S. Donaldson Campus in 2008/9 has proved to be very popular.

There were approximately 2000 registrations in these programmes in the 2008/9 Academic Year, and this will increase slightly in 2009/10.

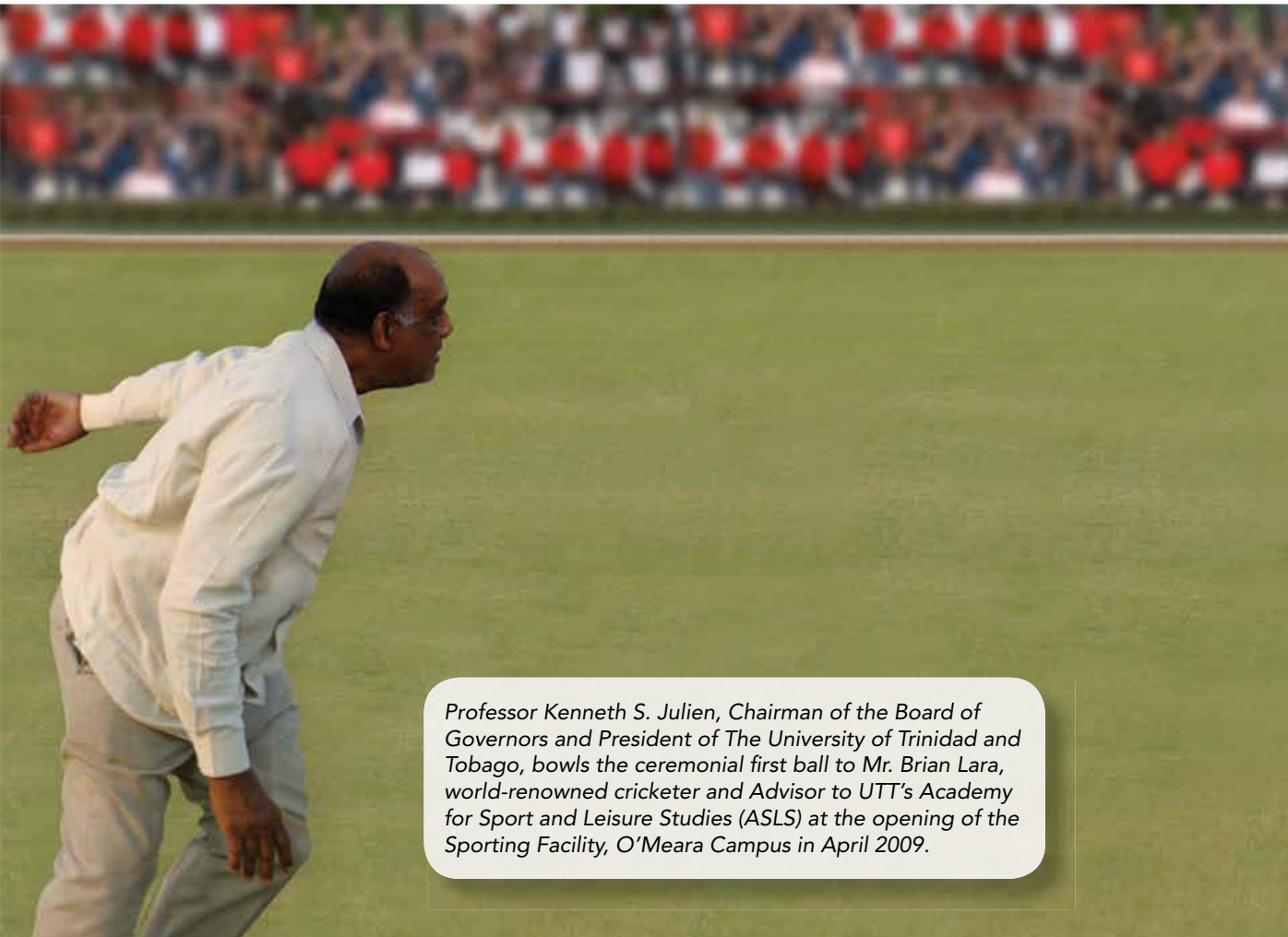
### **School of Learning, Cognition and Education**

The 4-Year B.Ed Programme was initiated at the behest of the Government of the Republic of Trinidad and Tobago's (GORTT) Ministry of Education in September 2006, with an average intake of ~400 students each at the two campuses, Valsayn and Corinth. Since that time both campuses have been expanded to accommodate the new programme with its specialist disciplines. The first 45 graduates completed the programme in August 2009, these being in Primary Education, having been granted credits to give exemption from the first year. The fourth cohort entered in September 2009, with the first full slate of graduates in all specialities being available to the Teaching Service in August 2010.

There were ~2000 registrations in the B.Ed Programme in 2008/9; however, it is expected that this will increase to 2500 in 2009/10.

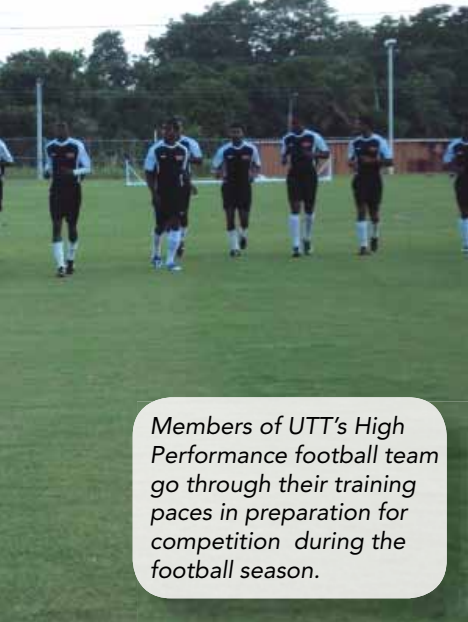


*Coached by Mr. Jon Ishee of Southeast Missouri University, UTT's High Performance basketball team practises at their training clinic in August, 2009.*



*Professor Kenneth S. Julien, Chairman of the Board of Governors and President of The University of Trinidad and Tobago, bowls the ceremonial first ball to Mr. Brian Lara, world-renowned cricketer and Advisor to UTT's Academy for Sport and Leisure Studies (ASLS) at the opening of the Sporting Facility, O'Meara Campus in April 2009.*

## Academy for Sports and Leisure Studies



Members of UTT's High Performance football team go through their training paces in preparation for competition during the football season.



Andrew Ivan Lewis, a member of UTT's High Performance Team, training in the waters off the coast of Southampton, UK in preparation for possible qualification in the 2012 Olympics.



### The Academies

#### The Academy for Sports and Leisure Studies

– The Certificate in Sports Studies was initiated in the 2007/8 Academic year with 25 Sports Scholars completing the programme. These students were specifically chosen for their potential for success in the major sports. Two new cohorts, one for a new set of Sports Scholars, and another for general admission, completed the programme in 2008/9. In addition, a new Bachelor's programme in Sports Studies started in the 2008/9 Academic Year with the graduates from the 2007/8 Certificate programme taking up places, together with new students from general admission.

There were 173 registrations in the Sports programmes in 2008/9 which will increase to almost 300 in 2009/10.

In several national competitions during the course of the year, UTT student-athletes secured top places, including in Netball, Boxing, Swimming, Rugby, Volleyball and Table Tennis. Several of these students have been selected for inclusion on the respective national teams. It should also be noted that the Academy served as the local organising committee for the Inaugural Caribbean Congress and Exposition of the International Council for Health, Physical Education, Recreation, Sport and Dance (ICHPER.SD) in May 2009.

#### The Caribbean Academy for Fashion and Design

– This Academy opened its doors in September 2008 introducing two Diploma Programmes and a Bachelor's programme in Fashion and Design at the JSSTI campus from September 2008. There were 85 registrations on these programmes in 2008/9, increasing to in excess of 120 in 2009/10.



**Mr. Heera Dookran**  
*Executive President of the Student Guild, 2007*

### The Student Guild

The first Student Guild elections were held in October 2007, with Executives and Elected Representatives nominated and elected by students at each campus of the University. The main function of the Guild is to represent the students of UTT to the Academic Body, the Government and the Nation by extension. The Student Guild is a vital and active element of University life and its aim is to be involved

in every aspect of the University in an effort to ensure that each student's university experience is fulfilling and memorable.

In recognition of the adage, "All work and no play makes Jack a dull boy..." the Guild is committed to providing extra-curricular activities that are not only highly enjoyable, but also add to the quality of campus life. To this extent, the Guild facilitates and endorses the formation of student clubs and organisations, offering whatever assistance is required. By the Guild's definition, "extra-curricular" is not limited to clubs and organisations, or to sporting and physical activity; "extra-curricular" is an encompassing term which also incorporates the student's personal development. The tangible output of UTT is its students. It is, therefore, crucial that the students be aptly prepared for study and for what lies ahead upon graduation in order to adequately contribute to the wider community.

The greatest contribution that one can make is to be of benefit to one's fellow man. The Student Guild is comprised of dedicated students working together, representing the voice of the students to their fullest ability.



*Mr. Rajiv Takru, Director General, National Institute of Fashion Technology (NIFT), New Delhi, India, admires the hand-painted silks and other works produced by students of the Caribbean Academy of Fashion and Design (CAFD), at the Art and Design Exhibition held at UTT's John S. Donaldson campus in May, 2009.*

In May 2009, an Open House was hosted by the Academy where the work of the students, which was on display for assessment by local pioneers in the Fashion Industry and senior Ministry and UTT staff, received high commendation.

**The Academy for the Performing Arts** – This Academy is looking forward to the completion of the National Centre for the Performing Arts later this year, with the planned programmes in Dance, Music, Theatre and the Technologies for the Performing Arts being phased in for delivery between the National Centre and the John S. Donaldson Campus. The first Diploma Programmes, however, will be introduced at the Valsayn Campus in 2009/10. A more comprehensive background to the Academy for the Performing Arts is presented in section 6 of this Annual Report.

**The Academy of Arts, Letters, Culture and Public Affairs** – This Academy continued its

outreach programmes, namely, the "Saving the Calypso Series"; the "Research Fellows' Series"; "Critical Writing Workshops" designed to teach young writers the fundamentals of creative writing and the many ways of publishing their creative work; and included a Symposium on the Life and Work of J.D. Elder in Tobago in November 2008 and the introduction of Certificate courses in Yoruba Language and Culture as well as Ramlila/Ramdilla Studies.

Five postgraduate students continued to be supervised with a view to their gaining the Ph.D. Award in the Humanities and in Ethnographic Studies. Perspectives on future Academic Programmes have been developed and are at different stages of implementation, e.g. the BFA, M.A. and Ph.D. in Carnival Studies.

In June 2009, the Academy lost the invaluable services of its founding Associate Provost, Professor Kenneth Ramchand.

### Postgraduate Studies and Research

#### Postgraduate Teaching Programmes

The following M.Sc. Programmes continued to be operated during the 2008/9 Academic Year:

- Environmental Science and Management
- Health Administration (with Johns Hopkins University, USA)
- Industrial Innovation, Entrepreneurship and Management (with Cambridge University, UK)
- Information and Communications Technology
- Maritime Management (with Southampton Solent University, UK)
- Petroleum Engineering (with the University of Texas, Austin, USA)

Two new programmes were introduced as follows:

- International Master's in Sports Management
- International Master's in Sport for Development

There were 176 registrations on these programmes in 2008/9 and this is expected to increase to >250 for the 2009/10 Academic Year.

### Research Programmes

In its quest towards being a research-based University, UTT has initiated a number of research programmes, with students registered for the award of M.Phil and Ph.D. degrees (see section 12 of this Annual Report). UTT recognises the importance of multidisciplinary research and has, since its inception, been developing a number of research groups in specific areas associated with national development as follows:

- Biomedical Engineering
- Biosciences, Agriculture and Food Technologies
- Education
- Energy Systems with an emphasis on Renewable and Green Energy Technologies
- Environmental Health and Safety
- Environmental Science and Management
- Herbal Medicine (with John Hopkins University, USA)

- Information Communications Technology
- Literary and Cultural Studies
- Mechatronics/Manufacturing Engineering
- Natural Gas Institute of the Americas (NGIA) with the University of Texas, Austin
- Petroleum Engineering
- Process Engineering
- Utilities Engineering

Of particular note is the construction of a Pilot Plant at the Point Lisas Campus for evaluating the production of Single Cell Protein from Natural Gas or Methanol. This is being done in collaboration with NEC, e Teck, the Danish Technical University, and the UNIBIO Company, also from Denmark. The Plant is scheduled for start-up in the fourth quarter of 2009.

The first research degree was awarded in the 2008 convocation.

In addition, the Academy for Arts, Letters, Culture and Public Affairs has eight distinguished Research Fellows carrying out research on a wide range of cultural topics of national importance:

- Hidden Cultures – French Creole/History and Culture of Sugar/First Peoples Ramlila
- Visual Arts
- History of Media
- Entrepreneurship

The research work of UTT is disseminated nationally through the Public Lecture Series, the organisation of conferences and also through the Fellows gatherings of the Academy for Arts, Letters, Culture and Public Affairs.

### Graduate Output 2005-2008 and Projections for Enrolment

Between 2005 and 2008, UTT graduated over 1,800 students mostly at the Diploma level. Over the coming years, there will be an increase, not only in the numbers of students graduating, but also in the distribution of qualifications to include larger numbers of Bachelor's, Master's and Doctoral awards.

In the 2008/9 Academic Year, the total student body was 6,500 students in the various programmes, but this is expected to increase to well over 7,500 in 2009/10 with the introduction



**UTT Graduate Mr. Brian James. Inset: Mr. Brian James and his supervisor, Mr. Cipriani Davis.**

**Brian James:** Graduated in 2008, M.Sc. – IIEM

**Employer:** Metal Industries Company Limited

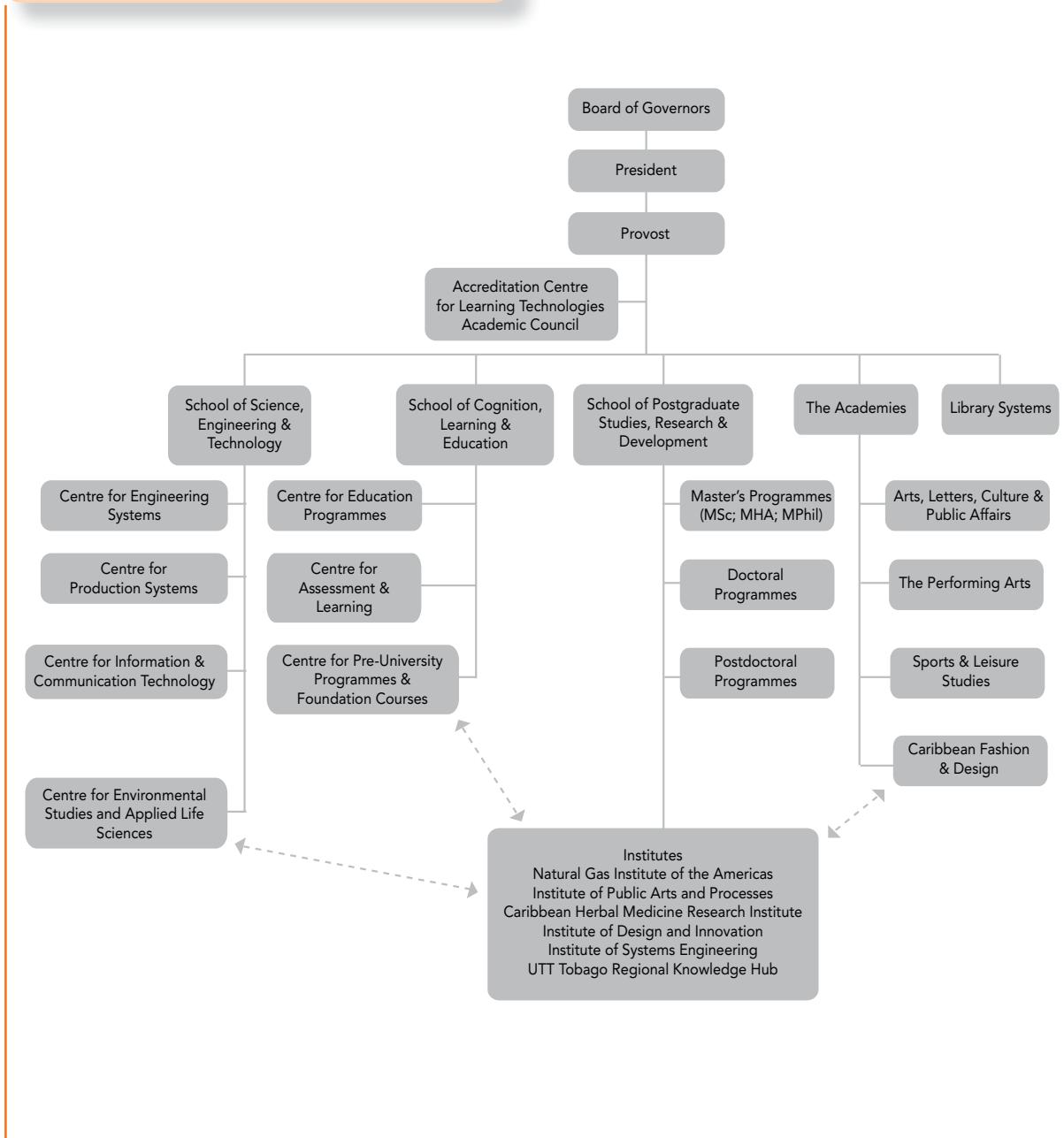
"I have known Mr. Brian James since 1980 when, as a student at John S. Donaldson Technical Institute (JSDTI), he pursued a Mechanical Engineering Technician programme. After many years, I once again met Mr. James at Metal Industries Company Ltd. (MIC) where he underwent training as a Design Technician. Mr. James' meticulous documentation skills, his ability to analyse design problems and to identify possible solutions made him stand out above the other trainees.

In 2007, Mr. James was awarded unpaid leave to pursue the M.Sc. qualification in Industrial Innovation, Entrepreneurship and Management (IIEM) at The University of Trinidad and Tobago (UTT). Having successfully completed this programme, he was promoted and is currently employed as the Manager, Engineering Division, at MIC. Mr. James has never lost focus of his goals and has demonstrated that perseverance has its rewards."

**Supervisor:** Mr. Cipriani Davis  
Chief Executive Officer  
Metal Industries Company Ltd (MIC)

Figure 1

Academic Structure as at August 31 2009





Members of UTT's victorious debate team who competed against their UWI counterparts in the South Trinidad Chamber of Industry and Commerce (STCIC) debate challenge. From left: Brendon Davy, Moderator Andy Johnson, Patrice Joseph and Randall Ballack.

of the four new programmes in BAFT, Criminology and Public Safety, Performing Arts and Marine Sciences.

On the current trend, projected growth over the next three years is as follows:

- 2009/2010 – 7500
- 2010/2011 – 9000
- 2011/2012 – 9500

This increase in growth will be fuelled by the natural expansion of existing programmes and the introduction of new programmes in the following areas:

- Biosciences, Agriculture and Food Technologies (BAFT)
- Criminology and Public Safety
- Energy Studies
- Performing Arts

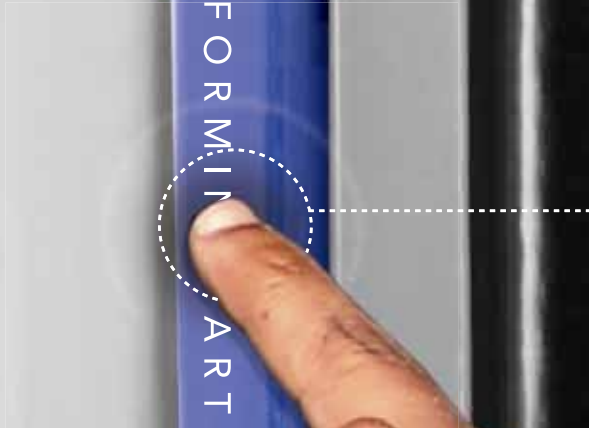
### Registration and Accreditation Status

The Accreditation Council of Trinidad and Tobago (ACTT) requires that all tertiary level institutions operating in Trinidad and Tobago be registered

under the Act governing the ACTT. UTT was formally re-registered by the ACTT in June 2009 for the period until June 2012. UTT has now moved towards the next stage and has begun to prepare its submission for Accreditation.

A Quality Assurance and Accreditation Unit has been set up in order to ensure that all academic programmes conform to the highest Quality Standards and are in accordance with the University's Regulations. It should be noted that a programme may only qualify for accreditation after it has graduated its first cohort of students. Two of the B.Tech programmes (offered jointly with the Faculty of Engineering UWI) have already received accreditation from the Institute of Engineering and Technology (UK). With the original B.Sc. Engineering programmes maturing in July 2009, moves have been made to accredit these programmes through Professional Institutions under the Engineering Council in the UK, with the first visit from the Energy Institute in August 2009 to evaluate the Petroleum Engineering programmes.

ACADEMY FOR THE PERFORMING ARTS



Introduction

The Academy's Vision

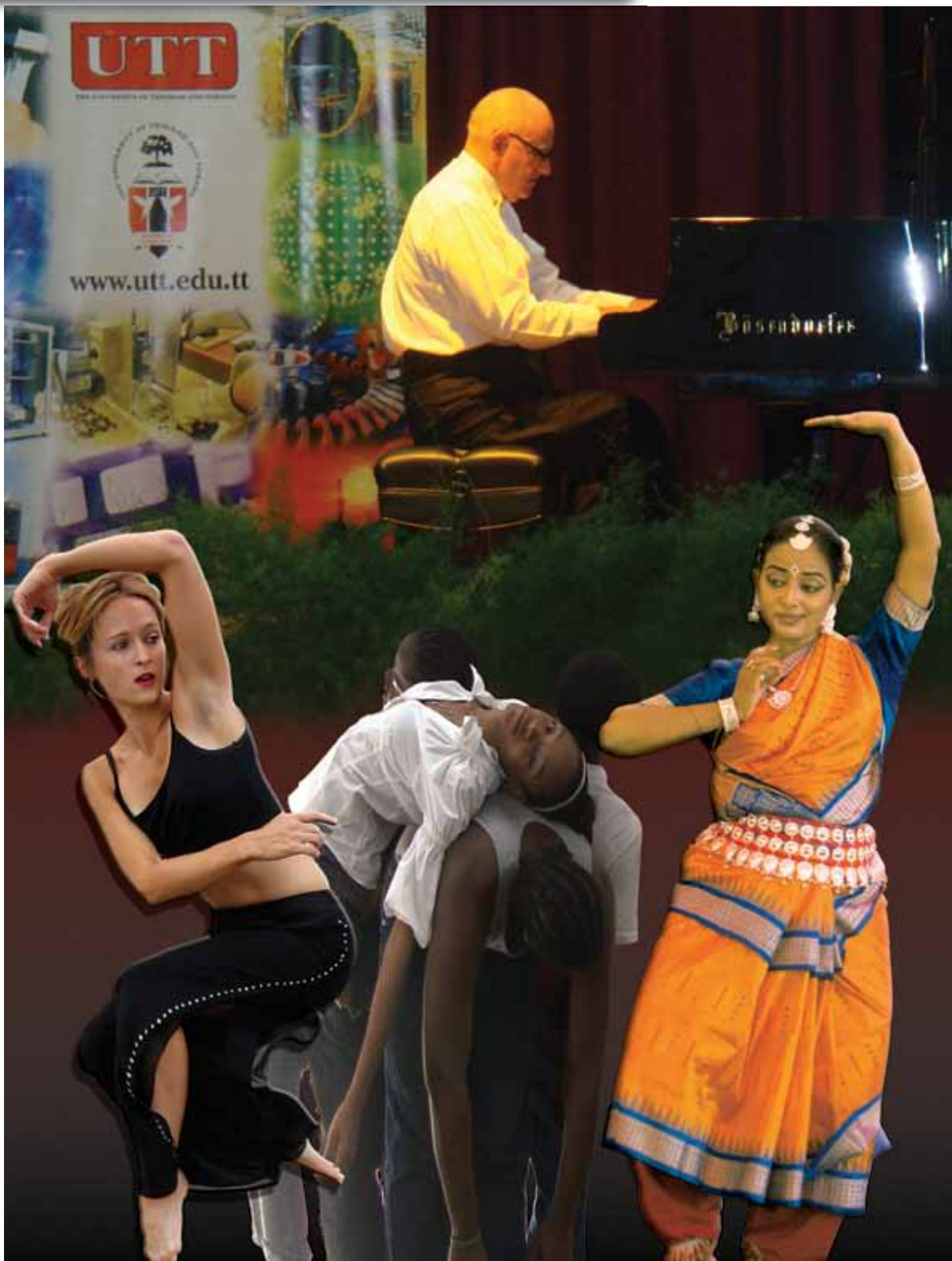
The Academy's Mission and Goals

Programmes

Students' Outcomes

Outreach Programme

Faculty/Staff



**Top:** Aglow in amber lighting, UTT's Professor Peter Seivewright captivates the audience with a mixture of classical and jazz music at UTT's San Fernando Campus. **Left:** Nicole Wesley, Associate Professor of Dance at UTT's Academy for the Performing Arts; **Centre:** Actors demonstrate "Give and Take Support" during a workshop conducted by UTT's Academy for the Performing Arts in 2009; **Right:** Indian dancer, Sangeeta Dash, strikes an alluring pose in Oddissi dance, during a workshop at UTT's O'Meara Campus on her visit to Trinidad in August 2009.

## Introduction

The Academy for the Performing Arts (APA) was established in 2007 to provide educational opportunities to talented and dedicated students of Trinidad and Tobago and the Caribbean Region. The Academy will focus on the areas of music, theatre and dance, design technologies, and music technology at the tertiary level, leading to a Certificate, Diploma and/or Bachelor's Degree in Fine Arts.

## The Academy's Vision

The Vision of the APA is to produce graduates who will be relevant to the industry and society at large, while allowing students to engage in the educational process of understanding and exploring the contributions of our creative industries for the benefit of our future culture and economy.

The performing arts is a powerful means of expression and a key medium for communicating a country's culture. However, despite Trinidad and Tobago's rich cultural background, formal training in the performing arts and opportunities for pursuing a career in this field locally have historically been limited. Only a relative few with deep passion and through sheer determination have been fortunate enough to access structured programmes internationally. Even fewer have returned to Trinidad and Tobago and are able to utilise their skills and experiences appropriately and with some measure of satisfaction.

As such, the APA is intended to be a forum whereby critical mass is created in a niche sector that will be unique in the Americas. In pursuing this opportunity, the Academy envisages a programme that will develop students artistically, academically and socially and so transform them into professional, independent, responsible and creative artistic practitioners, having lifelong interests and abilities in the performance and learning of the Arts.

## The Academy's Mission and Goals

The APA's mission is "To deliver advanced knowledge and excellent professional training in the Performing Arts within a Caribbean contextual bias, for the purposes of expanding and supporting career diversity, whilst strengthening national and regional cultural development."

To achieve this, the Academy has identified several short- and medium-term goals which will guide the academic, research and outreach programmes being contemplated. These include:

- Provide an educational environment that fosters the artistic, intellectual and personal growth of its students, so preparing them to embark on successful careers and productive lives as professional artists, responsible citizens, as well as leaders in their chosen professions;
- Establish and continuously pursue mutually beneficial and collaborative relationships with existing performing arts organisations and individuals in order to advance, integrate and reinforce the aims, objectives and impact of the Academy, its students and faculty among the wider communities;
- Continue to attract and retain renowned faculty members in all artistic disciplines by providing a collaborative work environment and involving them fully in the artistic educational life of Trinidad and Tobago;
- Uphold its commitment to the diversity of its community by fostering an environment that is inclusive, supportive and welcoming to all;
- Develop audiences who will further appreciate and financially support the arts; and
- Explore new boundaries and undertake the required research which will further develop the arts in Trinidad and Tobago and the Caribbean.

## 6.0 THE ACADEMY FOR THE PERFORMING ARTS

### Programmes

The Academy will be offering in September 2010 a Bachelor of Fine Arts (BFA) in the following programmes with the exception of Music Technology which will offer a Diploma:-

- Acting
- Dance
- Music (Caribbean, Indian Classical, Vocal, Instrumental, Western Classical, Jazz)
- Music Technology (Diploma)
- Design, Technology and Management.

As a precursor to the BFA, commencing September 2009 the Academy will be offering the following programmes at the Valsayn campus:

- Music (Voice, Instrumental) – 2-year Artist Diploma
- Music (Indian Classical) – 1-year Certificate
- Acting – Classes in Voice & Speech, Improvisation, Movement for the actors, Singing for the actors
- Dance – Classes, Workshops and Labs

The objective of these programmes will be to systematically expose the public to the Academy's offering, while preparing potential students for the BFA.

### Students' Outcomes

The APA is committed to developing graduates who can assume leadership positions in their disciplines. Building the critical mass in the performing arts not only requires raw talent, but individuals with an appreciation of the arts as a profession, and the level of commitment required to sustain a vibrant sector that brings value to local expression. The programmes to be offered by the APA are being developed with these factors in mind, so that apart from mastering the specific discipline, upon completion of a Certificate, Diploma or BFA Programme, graduates will be able to:-

- Integrate the theoretical perspectives of the Performing Arts in Trinidad and Tobago, the Caribbean and the World;
- Integrate historical/traditional constructs of the Performing Arts in Trinidad and Tobago in developing variations of, or completely new forms of expression;
- Develop and deliver a high quality of performance based on internationally accepted standards of excellence in the professional realm;
- Build teams that will provide service to the community and support the expansion of the arts through local groups; and
- Apply a strong sense of ethics, self-identity, confidence and self-esteem.

### Outreach Programme

To bring awareness of the Academy and the programmes to be offered by it, the Academy's faculty undertook a series of community-based performances, workshops, seminars and forums – all designed to stimulate an interest in education in the Arts. A particular workshop of note was the one undertaken for professional and aspiring actors at the Caribbean School of Dancing, with additional examples of the work undertaken being outlined as follows:-



**Top:** Prashant Patasar (left), Instructor, Dr. Ruby Mallik (right), Assistant Professor, both with UTT's Academy for the Performing Arts, conducted an Indian Classical Workshop – Vocal, Harmonium and Tabla – in January 2009 at the Divali Nagar site in Chaguanas. **Centre:** In April 2009, fellow Cellists Manab Naska and Caitlyn Kamminga of UTT's Academy for the Performing Arts entertained the audience at a lunchtime recital of classical music at UTT's O'Meara Campus. **Above:** UTT's Music Technology Programme Administrators Martin Raymond (left) and Yoichi Watanabe (right) make adjustments at the "Making Good Music Better" workshop in February 2009.

## 6.0 THE ACADEMY FOR THE PERFORMING ARTS

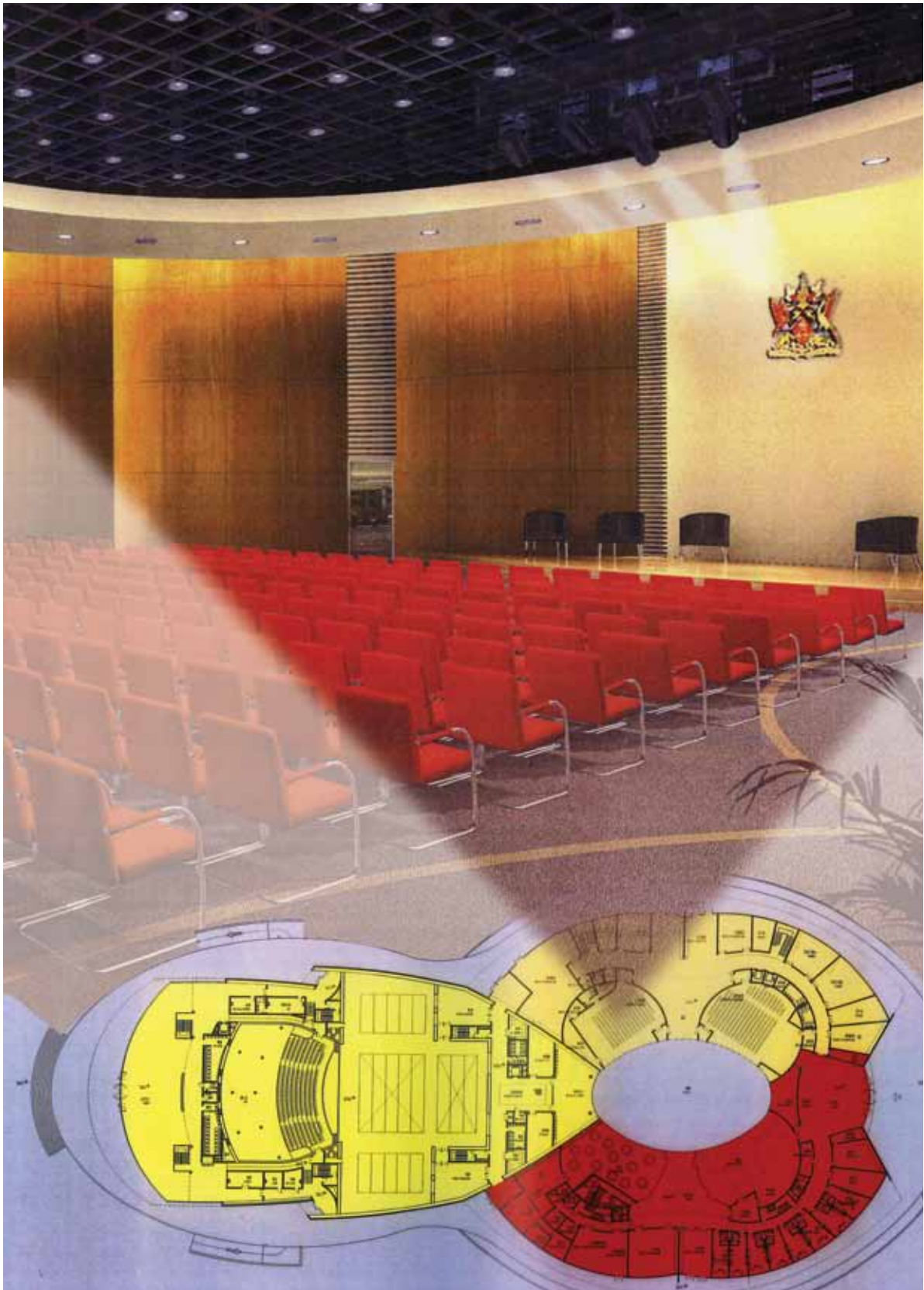
MONTH	PRESENTATIONS
October 2008	<ul style="list-style-type: none"> <li>Dance Workshop – Locks, Keys and Garments (Costume as Partner in Caribbean Dance)</li> </ul>
November 2008	<ul style="list-style-type: none"> <li>Dance Workshop – Shaping Creative Movement, The Fundamentals of Choreography</li> <li>Acting Workshop for professional and aspiring actors</li> </ul>
January 2009	<ul style="list-style-type: none"> <li>Dance Forum</li> <li>Dance Workshop for CXC Teachers – Principles of Choreography</li> <li>Indian Classical Workshop – Vocal, Harmonium and Tabla</li> </ul>
February 2009	<ul style="list-style-type: none"> <li>Indian Classical Workshop – Vocal, Harmonium and Tabla</li> <li>Behind the Bacchanal – The Business and Technology of a Carnival Event</li> <li>Audio Production Seminar, Making Good Music Better – The Art of Mastering Audio</li> <li>Indian Classical Dance Workshop – Orissi</li> </ul>
March 2009	<ul style="list-style-type: none"> <li>Indian Classical Dance Workshop – Orissi</li> <li>Indian Classical Dance Workshop – Kathak</li> <li>Indian Classical Workshop – Vocal, Harmonium and Tabla</li> <li>Community Concert in Indian Classical Music – Vocal, Harmonium and Tabla</li> <li>Acting Workshop in Audition Techniques</li> </ul>
April 2009	<ul style="list-style-type: none"> <li>An Evening of Music</li> </ul>
June 2009	<ul style="list-style-type: none"> <li>Play, "Three Women" – Acting</li> </ul>
July 2009	<ul style="list-style-type: none"> <li>Choral Singing Seminar</li> </ul>
August 2009	<ul style="list-style-type: none"> <li>Dance Criticism Workshop – Thinking Movement</li> </ul>
September 2009	<ul style="list-style-type: none"> <li>Choral Singing Seminar</li> </ul>

Since the Professors of the APA are also performers, and given the success of the activities already completed, the Academy will shortly initiate an expanded outreach programme through a series of nationwide concerts and performances which will serve to expose the work of the Academy to the general population, and attract interested students to the offerings being made available in the various disciplines.

### Faculty/Staff

To deliver the programmes, the University has as part of its team a range of Professors and

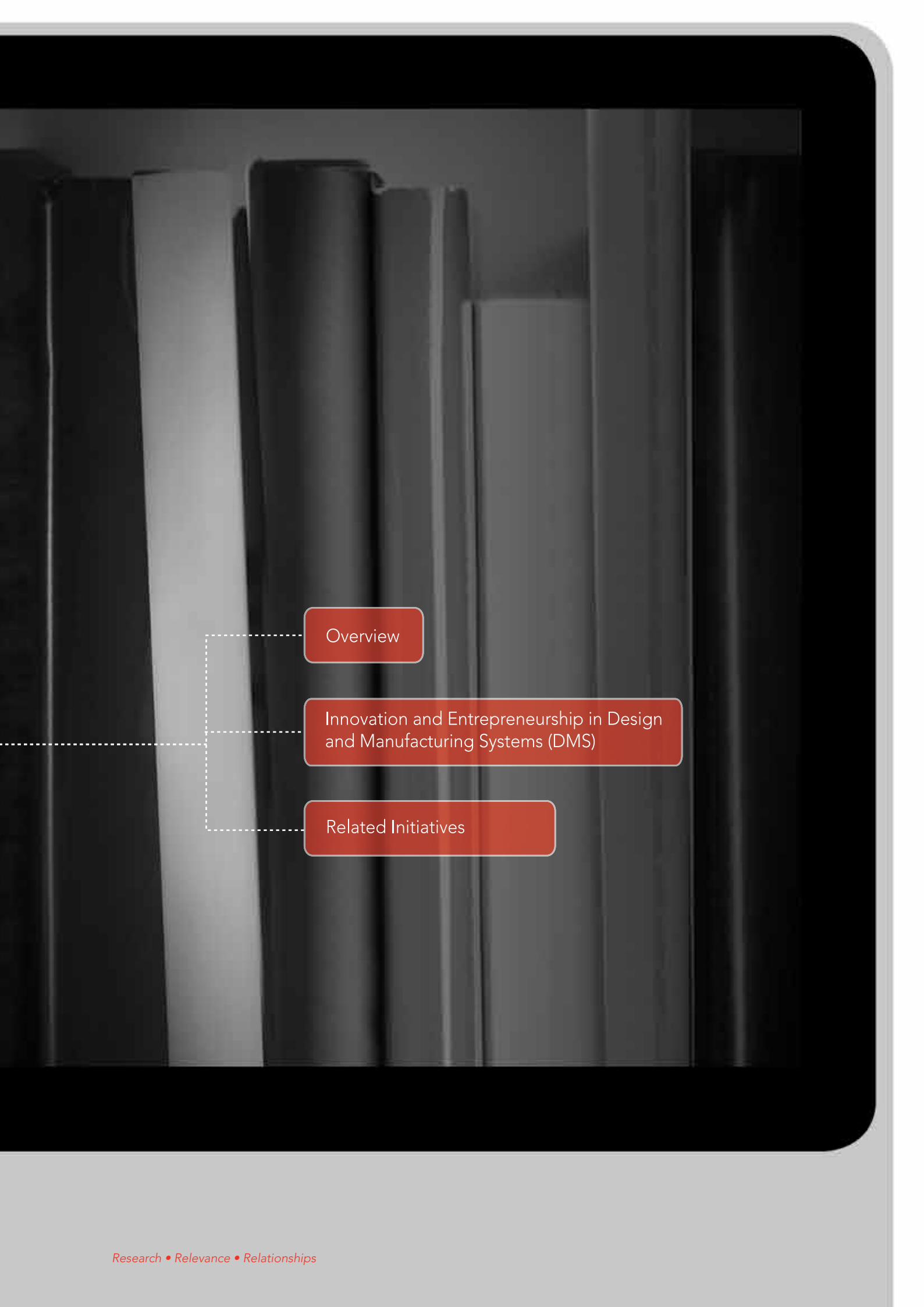
Instructors who are experienced performers as well as teachers. These faculty have been recruited from several different cultural environments – local, North American, European and Asian, with several having performed extensively in parts of the world renowned for the performing arts – New York, London, Paris, Sydney to name a few. The expectation is that the faculty will bring these experiences to bear in the design and delivery of the courses contemplated for the Academy which will ultimately benefit the students of The University of Trinidad and Tobago.



Artist's rendition of one of two Auditoriums to be used by UTT's Academy for the Performing Arts at the National Centre for the Performing Arts, Queen's Park West, Port of Spain. The building's architectural design features two Auditoriums with a combined seating capacity of more than 500 and a grand Auditorium with seating accommodation for over 1,200 persons.

CENTRE FOR PRODUCTION SYSTEMS





Overview

Innovation and Entrepreneurship in Design  
and Manufacturing Systems (DMS)

Related Initiatives

### Overview

In keeping with the entrepreneurial mission of The University of Trinidad and Tobago (UTT) and national aspirations, the primary objective of the Centre for Production Systems is to be a teaching, research and consulting centre of excellence for the development and growth of innovative people and world-class, globally competitive, manufacturing, bio-agricultural and technology/knowledge-based companies. The Centre for Production Systems has currently launched two innovative programmes – Design and Manufacturing Systems (DMS) and Biosciences, Agriculture and Food Technologies (BAFT) which will be highlighted in this Annual Report (BAFT will be discussed in section 8 following). The first programme, the Master of Science in Industrial Innovation, Entrepreneurship and Management (M.Sc. IIEM) in Design and Manufacturing Systems, enrolled its first cohort in September 2006. The first cohort of undergraduate students specialising in Design and Manufacturing Systems started that elective at the second year of their four-year programme in September 2007.

### Innovation and Entrepreneurship in Design and Manufacturing Systems (DMS)

Innovation, invention and entrepreneurship have been linked to the economic and social development of societies. At DMS, entrepreneurship and innovation are key learning objectives incorporated into both the undergraduate and graduate curricula where all students are exposed to the steps involved in the commercialisation of new products and processes and the principles of new business creation. At UTT, the definition of manufacturing used is that of the full cycle of activities from identifying market need, through product creation and production, to after sales service.

The Bachelor of Applied Science (BASc.) programme in Design and Manufacturing Systems provides industry with graduates possessing a wide range of professional engineering knowledge and skills necessary to overcome modern manufacturing challenges,

and contribute to productivity, product creation and global competitiveness in Trinidad and Tobago. These skills are demonstrated in the final-year engineering projects. Projects submitted included the design-build-test phases of the product development process; and business concepts forming the first stages of developing potential businesses.

At the graduate level, entrepreneurship and innovation are the fundamental drivers in the IIEM programme which is based on an established, high-performing Master's programme from the Institute for Manufacturing (IfM), University of Cambridge. The IIEM programme integrates core learning and skills from lectures, practical exercises, national and international company visits and live industrial projects. Graduates develop problem-solving skills that enable them to identify improvements for local, regional and international businesses.

A requirement for the completion of the IIEM programme is the development of a business plan, which entails the conceptualisation of a business opportunity, feasibility testing and presentation of that business opportunity to a panel of potential investors for start-up financing.

After three years (2006–2009), the IIEM programme will be expanded, based on direct consultation with the University's Manufacturing Advisory Council and local industrialists, to further emphasise the importance of innovation and design in today's business environments. An Innovation and Technology Management module has been developed in collaboration with the IfM which aims at providing graduates with the knowledge of the tools, techniques and skills needed to manage innovation, balancing both technological and commercial drivers for change.

A Design option has also been developed which will foster the development of creative people and produce ideas for new products and services through iterative design and prototyping activities. Graduates will produce free-form designs as well as participate in exercises and activities including reverse engineering and product teardown exercises linked to marketing concepts.



**International Study Tour (Brazil, July 2009):** Students of UTT's IEM Programme in their protective wear prior to touring (left) Barducco – an international food company and leading producer of oven-baked products in Brazil; and (right) Valtra – one of the largest companies in the heavy agricultural equipment industry.

These course developments will further enhance the ability of the programme to educate the students in the complete process from ideation to business creation, thus giving them a framework for taking their ideas to market. By incorporating this holistic approach, the Centre for Production Systems stimulates the growth of the local manufacturing sectors, specifically in the areas of light manufacturing, food and beverage and ICT. It also further develops the indigenous innovative capabilities of the people of Trinidad and Tobago.

A major focus area of the M.Sc. IEM programme is the industrial projects to be undertaken at the end of each module. Graduate students spend five three-week periods working in teams of two or three on industry projects, four in the private sector and one in the public sector. In these projects, students engage in real industrial problems and produce realistic and feasible technical and business solutions for the organisation. An average of 45 industrial projects are done on an annual basis, and at the end of each project, each team presents its findings to senior management and faculty staff with an opportunity for feedback prior to final project assessment.

Typical private sector projects included:

- Evaluate the 24-hour Turnaround Time Objective (Distribution company)
- Waste Reconciliation (Manufacturer)
- Marketing Plan for Launch of New Electrical Product (Components manufacturer)

- Improve Customer Complaint Database and Reduce Complaints (Glass manufacturer)
- Verify the Accuracy of Key Process Parameters (Printing & Packaging company)
- Business Expansion Strategy (Fruit Juice Production company)
- Increasing Productivity on Metal Fabrication Line (Lighting Technology company)
- Warehouse Space Optimisation (International paint manufacturer)
- Re-establishment of Product Brand Name in T&T (Distribution company)

Typical public sector projects included:

- Process Improvement for the Adult Priority Care Facility (Mt. Hope Hospital)
- Evaluate 7-day Delivery Time Objective for Repair of Specific Public Sector Vehicles (Vehicle Management Corporation of T&T)
- Refuse Collection/Removal System (Arima Borough Corporation)

A major component of the IEM programme is the international study tour where students are exposed to global manufacturing realities. This international exposure helps students meet the objectives of the programme including the acquisition of knowledge and transferable skills for global enterprise development and management. One of the desired outcomes is the development of a culture of entrepreneurship which will fuel the conceptualisation, start-up, and growth of globally competitive local businesses.



Company briefing for Industry Project Teams.

During the international study tour of overseas companies, manufacturing plants, development offices, research centres and educational establishments, themes of direct practical value in enhancing business profitability and competitive business opportunities for Trinidad and Tobago are investigated. The study tour also encourages networking for career development and professional information exchange.

Study tours have to date been carried out to the US, Venezuela, Dominican Republic and Brazil. The tours provided the students with an in depth insight into manufacturing in a global context, giving them exposure to the cultural differences of business operations and educational systems in foreign countries, and allowed them to compare and contrast international companies with local companies already visited or worked in.

In summary, the M.Sc. IEM Programme comprises the following modules (the order and content is liable to change from year to year as part of a continuous improvement plan):

- i) **Induction:** A four-week module aimed at developing a satisfactory standard in presentation, report writing and problem-solving skills to enable graduates to complete their first industry project. Graduates receive foundation lectures covering all manufacturing disciplines; visit a range of factories; and do in-class exercises to contrast and compare different approaches to manufacturing and the organisation of different industries. The module ends with an "outward bound" exercise to demonstrate simple elements of teamwork.
- ii) **Induction Project:** A three-week, two-person project to demonstrate problem solving skills and an understanding of the tools for data gathering in industry.
- iii) **Business Strategy and Marketing:** This module emphasises the importance of market and customer focus in both existing and new businesses. It covers the strategy development processes both at the enterprise and the functional level and the business processes associated with the Sales and Marketing functions.
- iv) **Marketing and Strategy Projects:** This project involves carrying out a market analysis/strategy development project for a small business to demonstrate understanding of the subject knowledge.
- v) **Design Project 1:** To execute the Conceptual Design process for a simple product based on marketing specifications.
- vi) **Innovation and Technology Management:** This module focuses on the ability to generate new products and services; it provides a framework for innovation and technology

management to enable the student to evaluate innovations and technologies in small and medium companies in order to deliver sustainable commercial benefits.

- vii) **Process Improvement Project:** This project enables graduates to test their understanding of the selection and deployment of process-improvement tools and techniques.
- viii) **Design Project II:** To execute the front-end design process for an industry design problem including concept generation and evaluation based on design specifications.

### Related Initiatives

#### i) Entrepreneurship Competitions

The Centre for Production Systems has now developed two competitions- a) an IDEAS competition for early stage ideas followed by b) a Business Plan competition where some of those ideas are further developed to viable business plans.

The IDEAS competition held at UTT's O'Meara campus on March 5th 2009 received wide

participation from students, faculty and staff representing groups of the Diploma in Fashion Management, Academy of Sports and Leisure Studies, Electrical and Electronic Engineering Technology, Manufacturing, Process Engineering, and Information and Communication Technology programs. The judging panel comprised of representatives from venture capital, economic development, investment and lending agencies including representatives from local banks, angel investor networks and the Venture Capital Incentive Programme of the Ministry of Trade and Industry.

The Business Plan Competition (BPC) initially started off as the final module of the MS (IEM) programme in 2007. The BPC continues to challenge the Masters students to design products or services that are innovative and have the potential to be marketed locally, regionally and internationally and able to meet industry standards and needs in Trinidad and Tobago.

#### ii) Virtual Innovation Centre

While the Trinidad and Tobago Innovation Centre (TTIC), jointly owned by UTT and eTeck, is planned to be eventually located at the Tamana InTech Park, it is presently operated



Permanent Secretary in the Ministry of Trade and Industry, Mr. Carl Francis, presents the prize of TT\$100,000 to Miguel and Fiona Jagessar, proud winners of UTT's Business Plan Competition 2009. The Jagessars developed the board game "Heaven's Gate".

as a Virtual Incubator under UTT and eTeck's joint oversight. For the past two years, the Centre for Production Systems has provided the Virtual Incubator programming that has more than quadrupled in participation from an initial Knowledge and Networking Series offered to four small, high-growth aspiration companies, to networking, training and business support workshops, seminars and project consulting targeting three groups. The programme includes (i) mentoring and coaching for almost 20 small businesses committed to specific growth goals; (ii) Intellectual Property-related commercialisation awareness and exposure for UTT faculty, staff and graduate students; and (iii) business start-up, growth and angel funding support and tracking for some 60 graduates of the first two cohorts of the M.Sc. IEM and ICT programmes, and other UTT alumni and participants of UTT's IDEAS and Business Plan competitions.

### iii) Appropriate Technology (AT) Regional Meeting

The University accepted an invitation from the Planning Committee of the International Conference of Appropriate Technology to host the first regional meeting in April 2008. Appropriate Technologies are those suitable for developing nations and involve adapting and developing new technologies to fit the local context. That meeting was attended by 89 participants from the Caribbean and the US; it was also supported by all the engineering programmes at UTT and all the Tertiary Institutions in Trinidad and Tobago. The conference focused on the innovation and policy issues related to the development and commercialisation of AT in the areas of Health; Water, Food and Shelter; Energy and the Environment; and Industry and Transportation, all of which are at the heart of the quality of life that a society affords its people.

The objectives of the meeting were to establish a network of regional AT researchers and practitioners who would identify, research and highlight initiatives and other AT activities in the region. This research would be used to promote commercialisation of AT solutions and develop regional technology-based R&D capacity.



**Professor Denise Thompson**  
*Centre for Production Systems (CPS)*

The meeting has formed the basis for some exciting new initiatives for the participants and the Centre for Production Systems. Papers and presentations based on the Conference findings have been given to the International Conference in Kigali, Rwanda and at the Kennedy School of Government in the US. The participants identified common interests in climate change and two UTT faculty helped set up a planning committee for an International Conference in Jamaica. Based on the network relationships developed through these conferences two collaborative research proposals were submitted to the European Union, one of which included the design of an appropriate technology cocoa dryer and development of cell phone technology for real-time in-field support for farmers and which was awarded research funding of over US\$1 million.

### iv) Developing a Research Agenda

The initial focus of the Centre for Production Systems was graduate and undergraduate manufacturing education. As the Centre becomes firmly established it has developed a research agenda that allows UTT an opportunity to contribute to making Vision 2020 a reality. New internal initiatives include innovation strategy and entrepreneurship, design and materials technology and environmental sustainability (see Table 1).

### Alliance Successes

The Alliance programme developed in 2005 in conjunction with the Institute for Manufacturing at the University of Cambridge is unique in combining technical and management skills

**Table 1: DMS – Research Agenda Perspectives**

Innovation & Entrepreneurship	Engineering Product Design	Materials Technology	Sustainability & Environmental Management
<p>Manufacturing Strategy</p> <p>Operational Efficiency and Productivity Interventions</p> <p>Technology Entrepreneurship and Sustainable Economic Development</p> <p>Engineering, Entrepreneurship, Education, Policy and Strategy</p> <p>Innovation, Incubation and Technology Commercialisation</p>	<p>Decision-making in Engineering Design</p> <p>Bearings and Lubrication</p> <p>Inclusive Design (Universal Design) and Design for Healthcare</p> <p>Novel Interfaces for User Interaction and Smart Products</p> <p>Artificial Intelligence Applications in Engineering Design</p>	<p>Nanotechnology Focusing on Nanocomposites</p> <p>Fracture Mechanics</p> <p>Mechanisms and Kinetics of High Temperature Reactions</p> <p>Development and Manufacturing of the Steelpan</p>	<p>Environmental Management</p> <p>Life Cycle Assessments (LCA)</p> <p>Sustainable Manufacturing and Product Design</p> <p>Material Recovery Methods</p> <p>Eco-Tourism, Energy Economy and Cost Control</p> <p>Environmental Reporting and Monitoring</p>

in running a business with the innovation and entrepreneurship skills necessary for new venture creation. In the third year of the alliance, the IIEM teaching programme has been successfully transferred to be taught by UTT staff. The 800-year traditions of the University of Cambridge are being blended with the dynamic and ambitious development of UTT to further develop programmes rooted in global excellence and focused on increasing the prosperity of the country's economy. The approaches to teaching and learning pioneered through the alliance, and

proved in IIEM, are providing models for other programmes to adopt.

The enrolment targets of 20-25 full-time students and a goal of two or three fundable business concepts each year, expressed by the willingness of venture or angel capital companies to fund the business plan competition proposals, have also been met. Of the 17 business plans developed by IIEM graduates, and five business concepts developed by ICT graduates, 11 business plans or concepts were deemed



Participants listen in rapt attention during the Appropriate Technology Conference at UTT's Point Lisas Campus in 2008.



**The Prime Minister's National Awards for Innovation 2008**

*Intrinsic to the Vision 2020 Action Plan of the Government of the Republic of Trinidad and Tobago, is that of promoting innovation within the national community. The biennial "Prime Minister's Awards for Innovation and Invention" recognises persons whose ideas embrace this concept. Mr. Jannix Joseph, entrant in the NIHERST/UTT, "Innovators and Inventors" and "Design Challenge" Competitions, copped the Special Prize – Junior Category for the Non-Slip Fork. In photo, Jannix receives his award from The Honourable Christine Kangaloo.*

immediately fundable by the judging panel, and nine graduates are actively working on those business ideas. Three new companies, all winners in the 2008 Business Plan Competition, have been registered – one each in food and beverage, corrugated plastic products and downstream aluminium sectors. Five students with businesses prior to starting the programme returned to operate those businesses, with the aim of making them nationally and regionally competitive.

Of the 38 graduates who enrolled in the first two years of the programme 90% are currently employed or pursuing postgraduate work, the details of which are as follows:

- 12 returned to their previous jobs of which five have received promotions on their return;
- 15 have gone to new companies/institutions of which four are employed at UTT either full time or part time;
- Four are employed in their family business
- Four are pursuing postgraduate work of which three are at UTT.



**UTT Graduate Ms. Stephanie Ramhit and her supervisor Mr. Paco Maldonado.**

**Ms. Stephanie Ramhit:** Graduated in 2007, M.Sc. – Petroleum Technology

**Employer:** Repsol T&T.

*“Ms. Stephanie Ramhit works as a Production Engineer in the Poui field (Repsol T&T). Since her start with Repsol, she has excelled in her daily duties, showing herself to be a quick learner and a responsible worker who is focused on results. Despite the difficulties of working in a mature asset with old completions and a declining production, her efforts towards production optimisation has made it possible to keep production up in the Poui field.*”

*Stephanie is a good team member who shares her work experience with others and when dealing with other departments she has always pursued production targets beyond any difficulties. Stephanie has become a key member at Repsol T&T due, in part, to her determination in pursuing her goals; such as graduating with the M.Sc. Petroleum Technology at The University of Trinidad and Tobago (UTT).”*

**Supervisor:** Paco Maldonado  
Reservoir Engineering Manager  
TSP Asset  
Repsol T&T

BIOSCIENCES, AGRICULTURE AN

KNOW



Introduction

Goals and Objectives of  
UTT's BAFT Programmes

BAFT Work Programmes

Products and Services  
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Market Potential for Products

## 8.0 BIOSCIENCES, AGRICULTURE AND FOOD TECHNOLOGIES: PERSPECTIVES

### Introduction

The Programme in Biosciences, Agriculture and Food Technologies (BAFT) of UTT was established following the approval of the Cabinet of Trinidad and Tobago in 2007 and is a culmination of decisions previously taken that were to impact positively on national agricultural and related activity. UTT's intervention in the educational, R&D activities and extension services of the agriculture and food sectors was based on the premise that:

- A new approach to education and training in the sector was required if the appropriate human capacity was to be generated;
- An increased and targeted level of research would develop knowledge and provide a launch for the application of technology and innovation to respond to the needs of all stakeholders;
- The incorporation of outreach activities would facilitate appropriate behavioral change and equip all stakeholders with skills required in creating a competitive industry;
- Value for the national agricultural investment would be maximised by removing duplication of effort and over-staffing; and
- A comprehensive outreach to primary and secondary schools and collaborations with other UTT programmes would result in a robust, technology-based and business-oriented programme that met future needs and attracted students to a career in the sector.

UTT's strategy of intervention is evidence-based and will be driven by results of the research and development effort. This approach, when coupled with the state-of-the-art facilities anticipated at the several BAFT locations, will allow for the development of the full value chain of activities in the sector – from education and training through to extension services and incubators. However, it should be noted that the model of extending the arm of the University outside its walls and its laboratories to farmers, food processors, the market place on the one hand, and into the classroom of primary and secondary schools on the other, would be entirely different from the previous approaches used locally, and follows a model utilised in the United States and China.

To establish the programme, UTT would provide a capital budget to meet expenditure for the enhancement of facilities that would provide the infrastructure for creating a Centre of Excellence to service the needs of Trinidad and Tobago and the region. This includes several areas previously assigned to the Ministry of Agriculture, Lands and Marine Resources (MALMR) to UTT/BAFT:

- the Aripo Livestock Station (ALS);
- the Research Division of the Central Experiment Station (CES);
- the Sugarcane Feeds Centre (SFC); and
- the agricultural holdings of the Palo Seco Agricultural Enterprises Limited.

In accordance with the decision of Cabinet, several Government entities have also been absorbed operationally by the University, namely The Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) and The Research Extension and Support Services (RESS). As such, for the purposes of this Report, the above Units, together with those assigned from the MALMR, would be referred to as the "field stations."



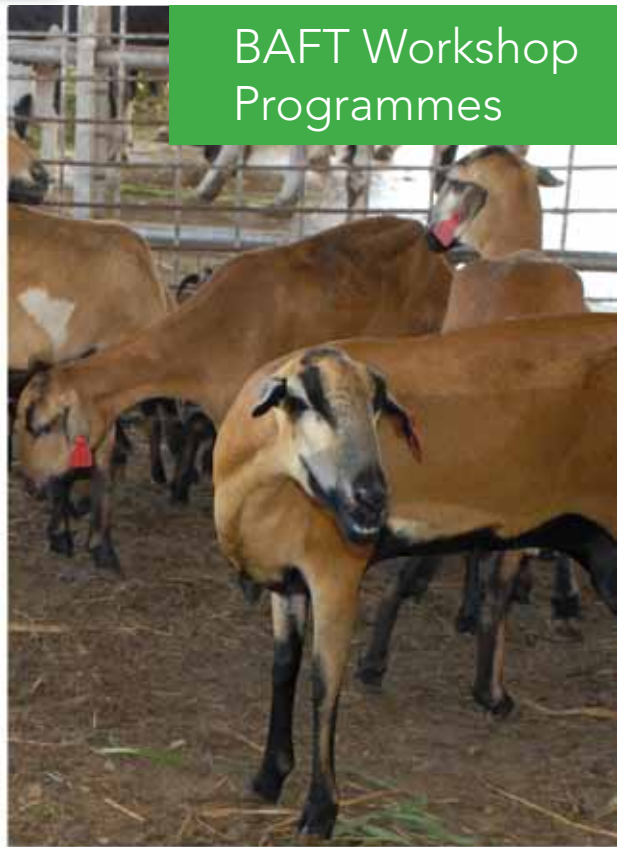
*Dressed in their protective gear, students inspect a bee hive as part of their practical studies at Aripo.*

The transfer of agricultural assets for teaching, research, demonstration and development by GORTT to UTT/BAFT represents a significant departure from the previous approach to agricultural development. It also presents a significant challenge and a great opportunity for UTT to re-establish Trinidad and Tobago as a leader in Tropical Agriculture, in the tradition of the highly respected Imperial College of Tropical Agriculture (ICTA). Importantly, it presents to UTT/BAFT the opportunity to develop synergy across the four components (Teaching, Research, Processing and Extension/ Services) which can accelerate the development, acquisition, teaching and transfer of appropriate technology to support the agriculture sector as accomplished by Land Grant Institutes in the

USA. This approach builds on GORTT's significant historical investment in these facilities, including but not limited to:

- Provision of technical and analytical support;
- The development and supply of improved adapted breeds of cattle, buffalo, sheep and goats;
- The conservation, development and supply of water buffalo genetics; Demonstration of innovative production practices, including integrated farming and the use of alternative feed sources;
- Applied research towards the refinement of technology for transfer and adoption on farms; and
- Production of farm/work-ready agriculture practitioners.

BAFT Workshop  
Programmes



*Showcasing the country's flora and fauna, students of Biosciences, Agriculture and Food Technologies (BAFT) display their talents at ornamental horticulture and husbandry.*

### Goals and Objectives of UTT's BAFT Programmes

The BAFT programmes provide the opportunity not only to reduce the decline in agriculture, but to place Trinidad and Tobago as a major international producer of a number of agricultural products. The programme aspires to be:

- The National Learning Centre for cutting-edge technology in food and agriculture;
- The National Research Centre in food, agriculture, biotechnology and food safety; and
- The National Centre for technical support to agriculture practitioners and public and private organizations in food and agricultural policy, technology transfer, information dissemination, plant production and protection, animal production and protection and food and agricultural development.

Such programmes are expected to produce a new generation of food and agricultural entrepreneurs and biotechnologists who can undertake and sustain the development of the food and agricultural sectors leading to the goals of wealth creation, food security and food safety. By highlighting R&D in biosciences, agriculture and food technologies integrated with technology acquisition/utilisation, operations, market value and commercialisation, graduates will be better positioned not only to be farmers, but to make evidence-based and informed judgments on implementing best practices and to developing appropriate proposals that will enhance the sector over time.

The Programmes are expected to impact Trinidad and Tobago by:

- Producing a new generation of food and agricultural technologists and providing momentum for the future food and agricultural sector;
- Retaining second-generation food and agricultural entrepreneurs and ensuring a continuation of human capacity and sustainability;
- Developing business incubators for selected rural populations to create new enterprises;
- Providing technical training to existing practitioners and improving efficiency and competitiveness;
- Diversifying enterprise and reduction of risk;

- Expanding existing sectors and creation of jobs and wealth;
- Creating of new sectors with additional job and wealth creation; and
- Producing new leaders in food and agriculture who are ready to lead with action, technology and vision.

### BAFT Work Programmes

#### A. Teaching:

UTT will continue to mount the Diploma Programmes in Agriculture and Forestry at the ECIAF Campus with the necessary revisions to upgrade content and delivery. Two new Diploma programmes that have been added in the areas of Ornamental Horticulture and Veterinary Public Health are also to continue. In January 2010, it is planned that UTT will be launching the first of its new programmes leading to the Bachelor of Science and Bachelor of Technology qualifications. The initial programmes are in Animal Science, Crop Science, Biotechnology and Food Science and Technology. As the critical mass develops, these offerings are to be expanded to the Master's and Doctoral levels so that, when fully operational, approximately 700 persons are expected to be enrolled in the various programmes at any one time.

#### B. Research:

Efforts in this area will focus on several aspects including:

- The breeding, selection and production of animals such as buffalo, cattle, sheep, goats, rabbits and fish. It should be noted that the focus will be on species such as the ruminants and rabbits which can be sustained from grass (a renewable local resource);
- Enhancing reproductive management of the aforementioned animals;
- Alternative feed/forage sources, based on the utilisation of locally produced starches as an energy source;
- Alternative vegetable production systems geared towards the year-round production of traditionally consumed vegetables and the production of vegetables such as carrots

## 8.0 BIOSCIENCES, AGRICULTURE AND FOOD TECHNOLOGIES: PERSPECTIVES



*Working to improve methods of dairy production, the milk extraction process takes place at the ECIAF campus.*

and onions which are not normally grown in Trinidad and Tobago;

- Product development and processing technologies related to carbohydrates, milk, meat, fruits and vegetables; and
- Vertical integration of primary production and processing as a strategy for sustainable development of local agriculture.

### **C. Development:**

UTT will support the development of agriculture within the existing policy framework of GORTT and in line with its long-term goals for the industry. Specifically, with the incorporation of the transition facilities, UTT is well placed to undertake activities which can support the sector by either providing improved inputs, systems or processes which allow lower costs of production, higher yields and higher quality of output, or by demonstrating appropriate systems and technologies which have the capacity to enhance local production in the targeted areas. Specific aspects include:

- Food processing technology and processes for carbohydrates, vegetables, dairy products and meats;
- Provision of superior animal genetics particularly in water buffalo, dairy and beef cattle, sheep and goats (live animals, embryos and semen);
- Provision of planting material for forage production;

- Controlled environment vegetable and poultry production systems, highly automated and mechanised production systems;
- The production of primary products to support product development and processing components; and
- Provision of technical support, which will allow for direct and indirect transference to stakeholders/clientele.

### **Products and Services to be Offered**

One objective of UTT is to inculcate in its programmes and students an entrepreneurial spirit, which it is believed will drive national development in the long-term. In reflecting this overall approach in the curriculum and operations of BAFT, the following products and services are expected to be provided by the various field stations:

#### *From the Aripo Livestock Station:*

- Improved breeding stock for cattle, sheep, goats, rabbits and buffalo;
- Demonstrated techniques and systems of production for dairy cattle, sheep, goats, rabbits and buffalo;
- Consultancy services for the management of the aforementioned livestock species and assistance in solving problems which may develop on farms;
- Planting material for high protein forages which can be planted on farms to be used as feed supplements;
- Appropriate strategies for the proper management of pastures; and
- Training in farm management principles and practices.

#### *From the Sugar Cane Feeds Centre:*

- Demonstration of the production and use of alternative feeds and feeding under the intensive system for cattle, sheep, goats, pigs, and rabbits;
- Demonstration of semi-intensive and intensive systems for the production of fresh water fish, in particular tilapia;
- Tilapia fingerlings;

- Meats including beef, pork, mutton, goat and rabbit;
- Consultancy services for the production of the aforementioned species and systems of production; and
- Consultancy on integrated farming systems.

*From the ECIAF Campus:*

In the short term (one year or less):

- Demonstration of semi-intensive production systems for the production of cattle, sheep, pigs, layers and broilers;
- Demonstration of the high-density broiler production system using tunnel-ventilated pens;
- Consultancy services on the aforementioned systems; and
- The sale of livestock including pigs, rabbits, goats and broilers.

In the medium term outputs will be centred on food processing technologies demonstrating:

- Milk processing to pasteurised milk and yogurt;
- Carbohydrate processing to composite flours; baked products; extruded snacks; sugars and ethanol;
- Meat, fish and vegetable processing;
- Tunnel Ventilated system for the production of broilers;
- Intensive systems for the production of tilapia;
- Undercover vegetable production systems;
- Production systems for horticultural and fruit trees; and
- Consultancy services for all of the aforementioned production and processing systems.

### Market Potential for Products

It is a well-established fact that significant increases in the price of livestock and livestock products have occurred over the last three years in Trinidad and Tobago. These price increases generally threaten to derail the development of many small states by masking economic and social gains achieved in other sectors of the economy. Moreover, not only are livestock

products showing large increases in price, many are simply becoming unavailable. The reduction in availability and increase in price in livestock products were attributed to several factors, including rapidly increasing price of oil and gas; increasing demand from non-traditional markets (China, India and Eastern Europe); adverse weather conditions in major supply countries (Australia and USA); high grain prices associated with increase production of bio-fuels and increase real estate prices (New Zealand) that hampers the expansion of the livestock industry.

While there has been temporary respite from these trends with the contraction of the world economy, most experts believe that the increased prices and growing demand will continue in the long run. Trinidad and Tobago's major animal protein source comes from poultry, in particular broilers, with an estimated annual consumption of 44,000 metric tonnes or 86 per cent of total protein consumption. The remaining 14 per cent or 7,000 metric tonnes comes from goats, sheep, beef, pigs and other animals such as rabbits. Though most of the poultry consumed is reared locally, almost all of the ingredients used (corn and soya bean) in feed manufacturing are imported. In addition, most of the non-poultry meat is imported.

It is therefore critical that Trinidad and Tobago enhances its livestock production capacity if it is to address the negative effects of dwindling availability and higher prices of livestock products such as goat, mutton, beef, poultry, rabbits, milk and milk products. While the primary objective of the various field stations will not be commercial, each facility, while pursuing its core functions of teaching and research, will have the capacity to produce quantities of such products for sale on the local market.

The market potential for all of the products therefore exists, but it will be imperative that while engaging in production, extra effort be made, by the adoption of improved technological and scientific methods, to ensure that the costs of production make the local products competitive relative to the imported alternatives.



*UTT Point Lisas Campus, its origin depicted from the canefields in Couva (reproduced from Annual Report 2006).*



FINANCIAL STATEMENTS



Auditors' Report

Balance Sheet

Statement of Income  
and Expenditure

Statement of Changes  
in Reserves

Statement of Cash Flows

Notes to the Financial Statements

### TO THE MEMBERS OF THE UNIVERSITY OF TRINIDAD AND TOBAGO

We have audited the accompanying financial statements of The University of Trinidad and Tobago ("the University") which comprise the balance sheet as at 30 September, 2007 and the statements of income and expenditure, changes in reserves and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory notes.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

#### Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate for the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the

appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

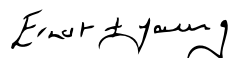
We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

As explained in Note 18 to the financial statements, no tax liability has been recorded in the financial statements notwithstanding the fact that the University's application for Charitable Organisation Status under the Corporation Tax Act, with retroactive effect from 14 September, 2004, has to date not yet been granted by the Board of Inland Revenue. The University continues to pursue a resolution of the matter, and is therefore subject to taxation. If the University were to account for taxation there would be no corporation tax liability and expense to be recorded as at 30 September, 2007 and for the year then ended, as the tax computation reflects a tax loss position. There would also be no net deferred tax expense to be recorded in the statement of income and expenditure for

the year ended 30 September, 2007, as the deferred tax asset equates the deferred tax liability. However, non-current assets and non-current liabilities as reflected on the balance sheet as at 30 September, 2007 is understated by \$12.7 million (2006: \$6.08 million) in respect of the unrecorded gross deferred tax asset and liability. There is no impact on accumulated reserves as at 30 September, 2007.

### Opinion

In our opinion, except for the matter explained in the preceding paragraph, the financial statements give a true and fair view of the financial position of the University as at 30 September, 2007, and of its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.



Port of Spain  
TRINIDAD:  
22 September, 2009

## BALANCE SHEET AS AT 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

	Note	2007 \$	2006 \$
<b>Current assets</b>			
Inventory		743	–
Accounts receivable and prepayments	3	144,882	133,746
Cash and short-term deposits	4	<u>118,502</u>	<u>74,373</u>
		<u>264,127</u>	<u>208,119</u>
<b>Current liabilities</b>			
Bank overdraft	4	5,271	–
Accounts payable and accruals	5	118,117	72,351
Deferred fees	6	<u>22,611</u>	<u>15,080</u>
		<u>145,999</u>	<u>87,431</u>
<b>Net current assets</b>		<u>118,128</u>	<u>120,688</u>
<b>Non-current assets</b>			
Property, plant and equipment	7	481,215	353,394
Intangible assets	8	7,149	3,294
Other assets	9	<u>10,204</u>	<u>10,456</u>
		<u>498,568</u>	<u>367,144</u>
		<u>616,696</u>	<u>487,832</u>
<b>Non-current liabilities</b>			
Deferred capital grants	10	571,301	463,392
Deferred contributions	11	10,415	7,331
Amount due to 'National Energy Skills Center' (NESC)	15	<u>2,400</u>	<u>3,600</u>
		<u>584,116</u>	<u>474,323</u>
<b>Reserves</b>			
General		18,248	7,800
Professional Education Unit (PEU)		<u>14,332</u>	<u>5,709</u>
		<u>32,580</u>	<u>13,509</u>
		<u>616,696</u>	<u>487,832</u>

The accompanying notes form an integral part of these financial statements.

These financial statements were approved by the Board of Governors on 22 September, 2009 and signed on its behalf by:



Member of the Board of Governors



Member of the Board of Governors

## STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

	Note	2007 \$	2006 \$
<b>Income</b>			
Government contributions:			
Recurrent grants		197,320	96,868
Capital grants released	10	26,182	13,251
Tuition and other related fees		42,908	19,231
Professional Education Unit (PEU)		35,625	14,355
Non-Government contributions	11	970	74
Interest income		6,248	4,231
Other income	12	1,070	553
		<u>310,323</u>	<u>148,563</u>
<b>Expenses</b>			
Staff costs	13	150,298	51,579
General and administrative expenses	14	22,695	16,306
Academic programs and related costs	14	35,686	38,426
Professional Education Unit (PEU)	14	27,002	11,837
Facilities costs	14	29,180	14,328
Depreciation		<u>26,391</u>	<u>13,251</u>
		<u>291,252</u>	<u>145,727</u>
<b>Excess of income over expenditure for the year</b>		<u>19,071</u>	<u>2,836</u>

The accompanying notes form an integral part of these financial statements.

**STATEMENT OF CHANGES IN RESERVES  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

	Reserves		
	General \$	PEU \$	Total \$
<b>Year ended 30 September, 2007</b>			
Balances as at 30 September, 2006	7,800	5,709	13,509
Excess of income over expenditure for the year	10,448	8,623	19,071
Balances as at 30 September, 2007	<u>18,248</u>	<u>14,332</u>	<u>32,580</u>
<b>Year ended 30 September, 2006</b>			
Balances as at 30 September, 2005	7,482	3,191	10,673
Excess of income over expenditure for the year	318	2,518	2,836
Balances as at 30 September, 2006	<u>7,800</u>	<u>5,709</u>	<u>13,509</u>

The accompanying notes form an integral part of these financial statements.

**STATEMENT OF CASH FLOWS**  
**FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

	2007 \$	2006 \$
<b>Cash flows from operating activities</b>		
Excess of income over expenditure for the year	19,071	2,836
Adjustments to reconcile excess of income over expenditure to net cash from operating activities:		
Depreciation	26,391	13,251
Capital grants released to the statement of income and expenditure	(26,182)	(13,251)
Deferred contribution released to the statement of income and expenditure	(970)	(74)
Amortisation of intangibles	2,397	853
Disposal of assets (non-cash)	(95)	95
Amortisation of leasehold premiums	121	121
	<hr/>	<hr/>
Operating income before working capital changes	20,733	3,831
(Increase)/decrease in inventory	(743)	35
Increase in accounts receivable and prepayments	(11,136)	(78,092)
Increase in accounts payable and accruals and deferred fees	53,297	34,123
Decrease in amount due to NESC	(1,200)	-
Decrease in other assets	131	32
	<hr/>	<hr/>
Net cash inflow/(outflow) from operating activities	61,082	(40,071)
<b>Cash flows from investing activities</b>		
Purchase of property, plant and equipment	(154,117)	(183,777)
Purchase of intangible assets	(6,252)	(1,660)
	<hr/>	<hr/>
Net cash outflow from investing activities	(160,369)	(185,437)
<b>Cash flows from financing activities</b>		
Proceeds from capital grants	134,000	194,696
Proceeds from deferred contributions	4,145	4,955
	<hr/>	<hr/>
Net cash inflow from financing activities	138,145	199,651
<b>Net increase/(decrease) in cash and cash equivalents</b>	38,858	(25,857)
<b>Cash and cash equivalents at beginning of year</b>	74,373	100,230
	<hr/>	<hr/>
<b>Cash and cash equivalents at end of year (Note 4)</b>	113,231	74,373
	<hr/>	<hr/>

The accompanying notes form an integral part of these financial statements.



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**1. Corporate information**

The University of Trinidad and Tobago ("the University") was incorporated on 14 September, 2004 as a non-profit company under the Companies Act 1995, Chapter 81:01 of the laws of Republic of Trinidad and Tobago. This was an interim measure until such time as appropriate legislation is enacted to govern the conduct of its affairs.

The University operates out of multi-campus facilities throughout Trinidad and Tobago. Its registered office is at No. 6 Trintoplan Compound, Orange Grove Road, Tacarigua, Trinidad.

The Government of the Republic of Trinidad and Tobago (GORTT), through the Corporation Sole, is the Founder Member of the University and can appoint no more than one-third of the members of the Board of Governors.

The management of the University is vested in a Board of Governors, ten (10) of whom can be appointed by the three (3) First Members of the University and five (5) of whom can be appointed by the Corporation Sole. As at 22 September, 2009 the Board of Governors consists of fourteen (14) Governors (30 September, 2007: 10) and includes five (5) persons who have been appointed by the Corporation Sole.

The University is an institution of higher education and research. It provides training and educational services primarily at the undergraduate, graduate and post-doctoral levels, and performs research and other services through contributions from corporate donors and sponsoring organisations and under contracts with various clients. The University has fostered partnerships with the private sector and entered into strategic alliances with internationally reputable universities. The private sector brings industry-relevant course content with the result of a graduate being industry-ready.

The University has a "business school" referred to as 'Professional Education Unit' (PEU), formerly called 'Industry Liaison and Professional Education Unit' (ILPE) which provides short courses and professional programs mainly to meet the technical training needs of the oil and gas industry. The trainees are from wide sectors of the community – State Agencies and Government Ministries, Corporate Entities and Private Individuals.



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**1. Corporate information (continued)**

In March 2007, the University established two companies as follows:

- (i) 'URECO Ltd' – to manage the University's real estate portfolio;
- (ii) '(UTT) Caribbean Industrial and Technological Services Ltd' – to provide scientific and technological services.

As at 30 September, 2007, these companies have not issued any shares.

**2. Significant accounting policies**

The principal accounting policies adopted in the preparation of these financial statements are set out below:

**a. Basis of preparation**

These financial statements do not include any results or net assets of 'URECO Ltd.' and '(UTT) Caribbean Industrial and Technological Services Ltd' for the year ended 30 September, 2007 as these companies have not commenced operations and do not have any net assets to be reported here in.

These financial statements are expressed in thousands of Trinidad and Tobago dollars and have been prepared on a historical cost basis.

*Statement of Compliance*

The financial statements of the University have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**2. Significant accounting policies (continued)**

**a. Basis of preparation (continued)**

*Standards in issue not yet effective*

The University has not early adopted the following new and revised IFRSs and IFRIC (International Financial Reporting Interpretations Committee) interpretations that have been issued but are not yet effective:

IFRS 7 Financial Instruments: Disclosures (effective from 1 January, 2007) requires disclosures that enable users of the financial statements to evaluate the significance of the University's financial instruments and the nature and extent of risks arising from those financial instruments. The new disclosures are to be included throughout the financial statements and comparative information will be revised as needed.

IFRS 1 Presentation of Financial Statements was amended (effective from 1 January, 2007) regarding Capital Disclosures, and requires the University to make new disclosures to enable the users of the financial statements to evaluate the University's objectives, policies and processes for managing capital.

IAS 23 Borrowing Costs was amended (effective from 1 January, 2009) and requires capitalisation of borrowing costs that relate to a qualifying asset. The transitional provisions of the standard require prospective application from the effective date.

IAS 32 Financial Instruments: Presentation was amended (effective from 1 January, 2009) regarding "puttable" Financial Instruments and Obligations Arising on Liquidation, and requires entities to classify certain types of financial instruments as equity provided they have particular features and meet specific conditions.

IFRS 3 Business Combinations was amended (effective from 1 July, 2009). The amendments were the result of a joint project with the US FASB, and certain fundamental changes and improvements were made to reinforce the existing standard and remedy problems that have emerged with its application.

NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007  
(Expressed in thousands of Trinidad and Tobago dollars)

**2. Significant accounting policies (continued)**

**a. Basis of preparation (continued)**

*Standards in issue not yet effective (continued)*

In May 2008, the International Accounting Standards Board issued "Improvements to IFRSs", which is part of its annual improvements project, and a vehicle for making non-urgent but necessary amendments to various IFRSs. These amendments primarily become effective for annual periods beginning on or after 1 January, 2009.

**b. Significant accounting estimates, assumptions and judgments**

The preparation of the financial statements in conformity with IFRS necessitates the use of estimates, assumptions and judgments. These estimates and assumptions affect the reported amounts of assets and liabilities and contingent liabilities at the balance sheet date as well as affecting the reported income and expenses for the year. Although the estimates are based on management's best knowledge and judgment of current facts as at the balance sheet date, the actual outcome may differ from these estimates, possibly significantly.

The key assumptions concerning the future and other key sources of estimation uncertainty at the balance sheet date, which have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below:

*Property, plant and equipment*

Management exercises judgment in determining whether costs incurred can accrue significant future economic benefits to the University to enable the value to be treated as capital expenditure. Further judgment is applied in the annual review of the useful lives of all categories of property, plant and equipment and the resulting depreciation determined thereon.



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**2. Significant accounting policies (continued)**

**c. Impairment of assets**

Various assets of the University are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash generating units).

**d. Foreign currency translation**

Transactions in foreign currencies are initially recorded in the functional currency at the prevailing rate at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are translated into Trinidad and Tobago dollars at the rate of exchange ruling at the balance sheet date. Non-monetary assets and liabilities are translated using exchange rates that existed when the values were determined. Exchange differences on foreign currency transactions are recognised in the statement of income and expenditure.

**e. Property, plant and equipment**

Property, plant and equipment are stated in the balance sheet at cost less accumulated depreciation and accumulated impairment losses.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, only when it is probable that future economic benefits will accrue to the University and the cost can be measured reliably. All other repairs and maintenance are charged to the statement of income and expenditure when incurred. Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down immediately to its recoverable amount.

NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007  
(Expressed in thousands of Trinidad and Tobago dollars)

2. Significant accounting policies (continued)

e. Property, plant and equipment (continued)

With the exception of land and capital works in progress, depreciation is charged on all other assets on the straight line basis at rates estimated to write off these assets over their expected useful lives as follows:

Buildings and improvements	-	2.5% - 5%
Motor vehicles	-	25%
Reference library materials	-	20%
Machinery and equipment	-	10% - 33 1/3%
Office equipment, furniture and fixtures	-	10% - 33 1/3%

The costs of buildings under construction are classified under 'capital works in progress'. Depreciation is charged when the construction is substantially completed and the assets are ready for use.

Property, plant and equipment transferred by GORTT and/or donated by other sources to the University are recognised at estimated fair values, with a corresponding credit to the deferred capital grants or deferred contribution account.

Gains or losses arising from the derecognition of property, plant and equipment are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognised in the statement of income and expenditure when the asset is derecognised.

f. Intangible assets

Intangible assets acquired are measured on initial recognition at cost. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses.

Intangible assets are amortised over their useful economic lives and assessed for impairment whenever there is an indication that the intangible assets may be impaired. The amortisation period for an intangible asset is reviewed annually.

**2. Significant accounting policies (continued)**

**f. Intangible assets (continued)**

Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortisation period, as appropriate, and is treated as changes in accounting estimates. The amortisation expense on intangible assets is recognised in the expense category consistent with the function of intangible assets.

Gains or losses arising from the derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognised in the statement of income and expenditure when the asset is derecognised.

**g. Leases**

*Operating leases*

Leases of assets under which all the risks and benefits of ownership are effectively retained by the lessor are classified as operating leases. Payments made under operating leases are charged to the statement of income and expenditure on a straight-line basis over the period of the lease.

When an operating lease is terminated before the lease period has expired, any payment required to be made to the lessor by way of liquidated damages is recognised as an expense in the period in which termination takes place.

**h. Inventory**

Inventory representing the cost of laptop computers and related software for resale to students, is valued at the lower of cost and net realisable value. Cost is determined using the "first-in first-out" (FIFO) method. Net realisable value is the estimated selling price in the ordinary course of business, less estimated costs necessary to make the sale.

**2. Significant accounting policies (continued)**

**i. Accounts receivables**

Accounts receivables are recognised and carried at original full amounts less provision for doubtful debts. Specific provisions for doubtful debts are made where the recovery of the full amount is considered doubtful. Bad debts are generally written off against the provision when identified.

**j. Financial instruments**

Financial instruments carried in the balance sheet include cash and bank balances, receivables and payables, and are stated at cost.

**k. Cash and cash equivalents**

Cash and cash equivalents include cash at bank and in hand and funds held in short-term deposits with original maturity of three months or less and are carried at cost which approximates their fair value.

**l. Capital grants and government contributions**

*Capital grants*

Capital grants are received from both GORTT and private sources for the specific purpose of construction and/or purchase of property, plant and equipment. These grants are recognised where there is reasonable assurance that the grant funds will be received and utilised in accordance with all stipulated conditions. An amount equivalent to the depreciation charge on the relevant property, plant and equipment is released to income over the expected useful life of the asset. Non-monetary capital grants are recorded at fair value and are released to income over the expected useful life of the asset.

*Government contributions*

Contributions received from GORTT to meet operating deficits are recognised in the respective year to which the Government's annual budget allocation applies.

**2. Significant accounting policies (continued)**

**I. Capital grants and government contributions (continued)**

*Government contributions (continued)*

The University receives funding from donors for research projects, bursaries, scholarships, capital and other purposes. The University follows the deferral method of accounting for grants and donations when they are restricted in use by the donor.

Donations that are governed by donor-imposed stipulations, which must be complied with to the satisfaction of the donor for the project expenditure to be approved, are generally for projects undertaken by the various departments and are referred to as 'Deferred contributions' (Note 11). Such donations are accounted for as follows:

i. Donations received in advance of expenditure:

Donations received in advance of expenditure are deferred and shown in the balance sheet as 'Deferred contributions'. When funds are disbursed, the amount is charged as an expense in the statement of income and expenditure or, if applicable, included on the balance sheet as property, plant and equipment or intangible assets. An equivalent amount is then released as income from 'Deferred contributions' to the statement of income and expenditure.

ii. Expenditure in advance of receipt of donations pledged:

Expenditures, made in accordance with donor's stipulations in advance of receipt of donations pledged, are included in the balance sheet as 'Accounts Receivables'. The amount is also reflected in the statement of income and expenditure as relevant expenses or if applicable, in the balance sheet as property, plant and equipment with an equivalent amount reflected as 'Non-Government Contributions' in the statement of income and expenditure or if applicable, 'Deferred capital grants'.

**2. Significant accounting policies (continued)**

**m. Accounts payable**

Accounts payable are carried at cost, which is the fair value of the consideration to be paid in the future for goods and services received, whether or not invoiced to the University.

**n. Provisions**

Provisions are recognised when the University has a present obligation (legal or constructive) as a result of a past event where it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

**o. Revenue recognition**

Revenue is recognised to the extent that it is probable that economic benefits will flow to the University and the revenue can be reliably measured. Revenue is measured at the fair value of the consideration received, excluding discounts and rebates. The following specific recognition criteria apply to the relevant category of revenue:

- i) *Grants relating to operating activities*  
Grants relating to operating activities are recognised as income on a systematic and rational basis over the periods in which the related expenses are incurred.
- ii) *Tuition and other related fees*  
Tuition fees are recognised on the accruals basis over the period of instruction.
- iii) *Interest income*  
Interest income is accounted for on the accruals basis.
- iv) *Other income*  
Income is received from a range of activities including catering, room hire, rental and other services rendered. Income is recognised on the accruals basis commensurate with the exchange of relevant services.

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**2. Significant accounting policies (continued)**

**o. Revenue recognition (continued)**

v) *Professional Education Unit (PEU)*

Income is recognised on the accruals basis commensurate with the exchange of relevant services and is reported separately to segregate its revenue and expenses for future activities relating to this Unit.

**p. Comparative information**

Certain changes in presentation of comparative information have been made in these financial statements. These changes primarily relate to the reclassification of balances previously presented as 'Managed projects' to 'Accounts payable and accruals'. In addition, there were changes to the classification of certain prior year expenses to ensure consistency with current year presentation. These changes had no effect on net assets or operating results for the previous year.

<b>3. Accounts receivable and prepayments</b>	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Amounts due from GORTT (see below)	74,271	122,173
Corporate receivables	22,708	7,461
Prepayments	39,557	3,918
Other receivables	<u>11,248</u>	<u>2,339</u>
	147,784	135,891
Less: provision for doubtful debts	<u>(2,902)</u>	<u>(2,145)</u>
	<u>144,882</u>	<u>133,746</u>
Amounts due from GORTT comprise:		
Recurrent/capital contributions (cash in transit)	28,238	94,197
Government Assistance for Tuition Expenses (GATE)	36,122	27,976
Reimbursement for "Trinidad and Tobago Health Sciences Initiative" (TTHSI)	<u>9,911</u>	<u>—</u>
	<u>74,271</u>	<u>122,173</u>

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

	2007 \$	2006 \$
<b>4. Cash and short-term deposits</b>		
Cash at bank and in hand	45,950	21,110
Money market mutual funds	52,137	53,263
Term deposits	<u>20,415</u>	<u>–</u>
	<u>118,502</u>	<u>74,373</u>

The applicable interest rates at the balance sheet date on the money market mutual funds (TT\$) range from 5.75% to 5.95% per annum. The term deposits are for a 90-day maturity period and earn interest at a rate of 7.25% per annum.

Cash and cash equivalents for the purposes of the statement of cash flows include the following:

	2007 \$	2006 \$
Cash and short-term deposits	118,502	74,373
Bank overdraft	<u>(5,271)</u>	<u>–</u>
	<u>113,231</u>	<u>74,373</u>

### 5. Accounts payable and accruals

Other payables and accruals	66,835	38,961
Trade creditors	41,280	21,250
Retentions payable	5,939	8,206
Amount due to Johns Hopkins Medicine International	850	1,921
Amount due to National Energy Skills Center (NESC) – Note 15	<u>3,213</u>	<u>2,013</u>
	<u>118,117</u>	<u>72,351</u>

### 6. Deferred fees

This represents the portion of tuition fees that is deferred, as the services will be provided in the subsequent period. When the services are performed, the amount is released to the statement of income and expenditure and included within tuition and other related fees income.

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

### 7. Property, plant and equipment

	Buildings \$	Machinery and Equipment \$	Motor Vehicles \$	Office equipment and fixtures \$	Capital works in progress \$	Total \$
<b>Year ended 30 September, 2007</b>						
<b>Cost</b>						
As at 1 October, 2006	214,842	37,780	4,725	34,476	82,260	374,083
Additions	9,812	3,959	593	25,626	114,127	154,117
Disposals and other movements	–	151	(80)	(7)	2	66
Transfers from work in progress	19,759	23,601	–	11,654	(55,014)	–
As at 30 September, 2007	<u>244,413</u>	<u>65,491</u>	<u>5,238</u>	<u>71,749</u>	<u>141,375</u>	<u>528,266</u>
<b>Accumulated depreciation</b>						
As at 1 October, 2006	4,630	8,235	1,682	6,142	–	20,689
Charge for the year	6,611	7,605	1,216	10,959	–	26,391
Disposals and other movements	–	–	(27)	(2)	–	(29)
As at 30 September, 2007	<u>11,241</u>	<u>15,840</u>	<u>2,871</u>	<u>17,099</u>	<u>–</u>	<u>47,051</u>
Net book value as at 30 September, 2007	<u>233,172</u>	<u>49,651</u>	<u>2,367</u>	<u>54,650</u>	<u>141,375</u>	<u>481,215</u>
<b>Year ended 30 September, 2006</b>						
<b>Cost</b>						
As at 1 October, 2005	57,055	27,941	3,911	12,418	89,082	190,407
Additions	2,958	4,642	915	13,073	162,189	183,777
Disposals	–	–	(101)	–	–	(101)
Transfers from work in progress	154,829	5,197	–	8,985	(169,011)	–
As at September 30, 2006	<u>214,842</u>	<u>37,780</u>	<u>4,725</u>	<u>34,476</u>	<u>82,260</u>	<u>374,083</u>
<b>Accumulated depreciation</b>						
As at 1 October, 2005	1,638	3,595	585	1,626	–	7,444
Charge for the year	2,992	4,640	1,103	4,516	–	13,251
Disposals	–	–	(6)	–	–	(6)
As at 30 September, 2006	<u>4,630</u>	<u>8,235</u>	<u>1,682</u>	<u>6,142</u>	<u>–</u>	<u>20,689</u>
Net book value as at 30 September, 2006	<u>210,212</u>	<u>29,545</u>	<u>3,043</u>	<u>28,334</u>	<u>82,260</u>	<u>353,394</u>

NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007  
(Expressed in thousands of Trinidad and Tobago dollars)

**7. Property, plant and equipment (continued)**

*Capital Works in Progress:*

Capital Works in Progress at year-end include design and construction costs of the pre-fabricated Administrative Building at the O'Meara Campus, Arima, the Maritime Campus Phase II, Chaguaramas and the Main Campus at Tamana In Tech Park, Wallerfield in the amounts of \$13.3 million, \$41.8 million and \$71.7 million respectively. During the year the amount of \$19.1 million was transferred to buildings from the capital works in progress account with respect to the O'Meara Graduation Pavilion.

*Point Lisas Campus:*

In May 2004, GORTT approved the establishment of The University of Trinidad and Tobago and decided that the 'Trinidad and Tobago Institute of Technology' (TTIT), a division of the National Energy Skills Center (NESC), would be integrated with the University. In September 2004, the University recorded the building and equipment of TTIT ('the Point Lisas Campus') at fair values of \$56.0 million and \$26.4 million respectively and with corresponding credits to "Deferred capital grants" (Note 10). These assets have been recognised in the balance sheet on the basis that it is probable that future economic benefits will flow to the University and the assets have a cost or value that can be measured reliably.

In July 2005, GORTT approved the transfer of the land on which the building at the Point Lisas Campus is situated. The transfer has to be effected via a state grant and is subject to the provisions of the Real Property Ordinance which requires the submission of approved survey plans by the University. The University has submitted the survey plans but has not yet secured legal title to the land at the balance sheet date and accordingly, has not recognised the land on its balance sheet.

*John S. Donaldson and San Fernando Campuses:*

In June 2005, GORTT agreed to the assignment of John S. Donaldson Technical Institute and San Fernando Technical Institute to the University and accordingly to the vesting of the properties of these two (2) Institutes to the University. The formal transfer of these properties has not been effected as at the balance sheet date. In the interim, the University has been granted permission to occupy and utilise the said properties.

The University has therefore not recognised these properties on its balance sheet except for any upgrade works to these properties undertaken by the University.

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**7. Property, plant and equipment (continued)**

*Valsayn and Corinth Campuses:*

In December 2005, GORTT agreed to the transfer of Valsayn and Corinth Teachers' Training Colleges to the University. These two properties are currently vested with the Republic of Trinidad and Tobago with the Ministry of Education being the previous occupier. In the interim, the Ministry of Education has granted permission to the University to occupy and utilise these premises.

The University has therefore not recognised these properties on its balance sheet except for any upgrade works to these properties undertaken by the University.

*ECIAF Campus:*

In September 2006, GORTT agreed to the integration of the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) into the University. As part of the decision GORTT agreed to the vesting of the properties of ECIAF. The formal transfer of the properties of ECIAF has not been effected as at the balance sheet date. In the interim, the Ministry of Science, Technology and Tertiary Education has granted permission to the University to occupy and utilise the properties and buildings of ECIAF.

The University has therefore not recognised these properties on its balance sheet except for any upgrade works to these properties undertaken by the University.

**8. Intangible assets**

	<b>Computer software \$</b>	<b>Licences \$</b>	<b>Book Rights \$</b>	<b>Total \$</b>
<b>Year ended 30 September, 2007</b>				
Opening balance	3,227	67	–	3,294
Additions	6,214	–	38	6,252
Amortisation during the period	<u>(2,335)</u>	<u>(62)</u>	<u>–</u>	<u>(2,397)</u>
Balance as at 30 September, 2007	<u>7,106</u>	<u>5</u>	<u>38</u>	<u>7,149</u>
Cost	10,333	1,299	38	11,670
Accumulated amortisation and impairment	<u>(3,227)</u>	<u>(1,294)</u>	<u>–</u>	<u>(4,521)</u>
Net book amount	<u>7,106</u>	<u>5</u>	<u>38</u>	<u>7,149</u>

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**8. Intangible assets (continued)**

	<b>Computer software \$</b>	<b>Licences \$</b>	<b>Book Rights \$</b>	<b>Total \$</b>
<b>Year ended 30 September, 2006</b>				
Opening balance	2,358	129	–	2,487
Additions	1,660	–	–	1,660
Amortisation during the period	<u>(791)</u>	<u>(62)</u>	<u>–</u>	<u>(853)</u>
Balance as at September 30, 2006	<u>3,227</u>	<u>67</u>	<u>–</u>	<u>3,294</u>
Cost	4,119	1,299	–	5,418
Accumulated amortisation and impairment	<u>(892)</u>	<u>(1,232)</u>	<u>–</u>	<u>(2,124)</u>
Net book amount	<u>3,227</u>	<u>67</u>	<u>–</u>	<u>3,294</u>

*Computer software*

This includes the costs of acquired computer software and is being amortised on a straight-line basis over a finite period of three (3) years.

*Licences*

This represents the costs incurred by the University to acquire the licences granted by a foreign university in respect of the delivery of the University's educational program. The licence fee is being amortised on a straight-line basis over a finite period of three (3) years, which is the applicable period of the licence.

*Book rights*

This represents the costs incurred by the University to acquire the rights to two publications in relation to the herbal research project being established under TTHSI.

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

<b>9. Other assets</b>	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Lease premiums (see below)	10,204	10,325
Rental deposits	<u>–</u>	<u>131</u>
	<u>10,204</u>	<u>10,456</u>
<b>Lease premiums:</b>		
Opening balance	10,446	10,567
Amortisation during the period	<u>(121)</u>	<u>(121)</u>
	10,325	10,446
Current portion included in other receivables	<u>(121)</u>	<u>(121)</u>
	<u>10,204</u>	<u>10,325</u>

Lease premiums comprise amounts paid to acquire the leases of parcels of lands on which the O'Meara Campus, Arima and the Maritime Campus, Chaguaramas are situated. These payments are stated at cost and are amortised over the periods of the respective leases which are ninety-nine (99) years for Chaguaramas and thirty (30) years for O'Meara.

<b>10. Deferred capital grants</b>	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Monetary grants	504,319	391,214
Non-monetary grants	<u>66,982</u>	<u>72,178</u>
	<u>571,301</u>	<u>463,392</u>
Balance as at 30 September	463,392	281,947
Received during the period	134,000	194,696
Transfer from 'Deferred contributions' (Note 11)	91	–
Released to the statement of income and expenditure	<u>(26,182)</u>	<u>(13,251)</u>
Balance as at 30 September	<u>571,301</u>	<u>463,392</u>

For each reporting period, the University transfers to income an amount equivalent to the depreciation charge of related property, plant and equipment.

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

	2007 \$	2006 \$
<b>11. Deferred contributions</b>		
Balance as at 30 September	7,331	2,450
Received during the year	4,145	4,955
Released to the statement of income and expenditure	(970)	(74)
Transfer to 'Deferred capital grants' (Note 10)	<u>(91)</u>	<u>–</u>
Balance as at 30 September	<u>10,415</u>	<u>7,331</u>

These funds represent receipts from donors with specified conditions and restrictions relating to its use. When these funds are spent in accordance with the donor's stipulations, the amount is released to the statement of income and expenditure.

	2007 \$	2006 \$
<b>12. Other income</b>		
Facility rental	389	238
Project management fees (net)	318	294
Sundry income	276	10
Foreign exchange gain	82	8
Sale of laptops (net)	<u>5</u>	<u>3</u>
	<u>1,070</u>	<u>553</u>

	2007	2006
<b>13. Staff costs</b>		
Salaries, gratuities, allowances and other benefits	141,013	45,270
Independent contractors	7,668	5,603
Recruitment costs	3,540	1,291
Administrative fees recharged to PEU (Note 14 c)	<u>(1,923)</u>	<u>(585)</u>
	<u>150,298</u>	<u>51,579</u>
Compensation of key management personnel included above is as follows:		
Salaries, gratuities, allowances and other benefits	<u>4,708</u>	<u>2,753</u>

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER, 2007

(Expressed in thousands of Trinidad and Tobago dollars)

	2007 \$	2006 \$
<b>14. Analysis of expenses</b>		
<i>a) General and administrative expenses</i>		
Marketing and public relations costs	5,554	5,510
Travelling costs	3,512	1,891
Stationery and office supplies	3,267	2,136
Legal and professional fees	3,515	1,992
Amortisation of computer software	2,335	791
Audit fees and related costs	1,395	1,049
Insurance (non-property)	430	155
Other	<u>2,687</u>	<u>2,782</u>
	<u>22,695</u>	<u>16,306</u>
<i>b) Academic programs and related costs</i>		
Collaborative agreements with foreign universities	10,354	19,323
Medical transcription training costs	5,612	5,952
Student stipends	4,120	1,404
Student functions, transport and related costs	3,424	1,469
External instructors' fees	3,350	5,262
Advertising courses	2,925	1,220
Laboratory supplies	1,256	1,389
Amortisation of license	62	62
Other	<u>4,583</u>	<u>2,345</u>
	<u>35,686</u>	<u>38,426</u>
<i>c) Professional Educational Unit (PEU)</i>		
Independent contractor services	6,463	16
Direct staff costs	6,243	1,834
External facilitators' fees	5,076	2,731
Administrative fees (Note 13)	1,923	585
Facilities charge (Note 14 d)	1,311	1,096
Catering	1,830	997
Other	<u>4,156</u>	<u>4,578</u>
	<u>27,002</u>	<u>11,837</u>

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

<b>14. Analysis of expenses (continued)</b>	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
<i>d) Facilities costs</i>		
Telecommunications	4,903	2,837
Utilities (electricity and water)	4,427	2,103
Security	3,810	1,474
Repairs and maintenance	3,877	1,849
Rental of offices	2,886	1,748
Lease of land	2,827	684
Janitorial and sanitation	2,710	1,482
Aripo facility costs (see below)	1,866	999
Rental of office equipment	1,313	950
Insurance (property)	1,122	605
Other	750	693
Facilities costs recharged to PEU (Note 14 c)	<u>(1,311)</u>	<u>(1,096)</u>
	<u>29,180</u>	<u>14,328</u>

Aripo facility costs of \$1.866 million include staff costs of \$0.53 million (2006: \$0.344 million).

**15. Related party disclosures**

**During the year, the University had the following transactions with related parties as follows:**

	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Medical transcription training costs incurred by Evolving Technologies and Enterprise Development Company Ltd (e-Teck) and invoiced to the University	5,612	5,952
Rent paid to Evolving Technologies and Enterprise Development Company Limited (e-Teck) for the land at the O'Meara Campus	553	553

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**15. Related party disclosures (continued)**

Management is of the view that these transactions were entered into on terms no less favourable than those that could have been obtained from other parties providing these services.

<b>Related party balances at year-end include:</b>	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Amount due to NESC (current) – Note 5	3,213	2,013
Amount due to NESC (non-current)	2,400	3,600

An amount due to NESC of \$3.6 million is subject to an agreement dated 29 May, 2008. This \$3.6 million is repayable in equal monthly instalments of three hundred thousand dollars (\$300,000), the first such instalment is due on 2 June, 2008 and subsequent instalments due monthly thereafter, with the last such instalment due in May 2009.

	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Amount due to e-Teck re:		
Medical transcription training costs	19,024	13,412

**16. Contributed services**

Certain industry partners have seconded professional staff to assist the University in the start-up of its operations at no cost to the University. The value of these services is therefore not included in these financial statements.

**17. Commitments**

Future minimum rentals payable under non-cancellable operating leases entered with various companies are as follows:

	<b>2007</b>	<b>2006</b>
	<b>\$</b>	<b>\$</b>
Due within one year	5,316	2,255
Due after one year but not more than five years	5,244	3,623
Due after five years	<u>13,273</u>	<u>13,838</u>
	<u>23,833</u>	<u>19,716</u>



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**17. Commitments (continued)**

The University has approved capital commitments amounting to \$140.5 million (2006: \$112.3 million) mainly relating to obligations in connection with the construction of the O'Meara, Maritime and Wallerfield Campuses and the pre-fabricated buildings at Valsayn and Corinth Campuses. This capital expenditure committed at 30 September, 2007 is fully funded by government grants.

The University had entered into various agreements with foreign universities for delivery of its educational program. As at 30 September, 2007 the contractual commitments for these foreign universities amounted to \$9.2 million (2006: \$18.3 million).

**18. Taxation**

No tax liability has been recorded in the financial statements notwithstanding the fact that the University's application for Charitable Organization Status under the Corporation Tax Act, with retroactive effect from 14 September, 2004 has, to date (22 September, 2009), not yet been granted. In April 2008, the Minister of Finance granted Interim Charitable Organisation Status to the University pending the final recommendation by the Board of Inland Revenue. In January 2009, the Board of Inland Revenue advised the University that it was unable to recommend the grant of Charitable Organisation Status. The University continues to pursue a resolution of the matter.

If the University were to account for taxation there would be no corporation tax liability and expense to be recorded as at 30 September, 2007 and for the year then ended, as the tax computation reflects a tax loss position. There would also be no net deferred tax expense to be recorded in the statement of income and expenditure for the year ended 30 September, 2007, as the deferred tax asset equates the deferred tax liability. However, non-current assets and non-current liabilities as reflected on the balance sheet as at 30 September, 2007 is understated by \$12.7 million (2006: \$6.08 million) in respect of the unrecorded gross deferred tax asset and liability. There is no impact on accumulated reserves as at 30 September, 2007.



**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 30 SEPTEMBER, 2007**  
(Expressed in thousands of Trinidad and Tobago dollars)

**19. Financial instruments and risk management practices**

**a) Fair values**

The methods and assumption used to estimate the fair value of each class of financial instruments for which it is practical to estimate a value are as follows:

***Short-term financial assets and liabilities***

The carrying value of these assets and liabilities is a reasonable estimate of their fair value because of the short maturity of these instruments. Short-term financial assets comprise cash and short-term deposits and accounts receivable. Short-term financial liabilities comprise accounts payable and accruals.

**b) Foreign currency risk**

The University incurs foreign currency exposure on transactions that are denominated in a currency other than the Trinidad and Tobago dollar. The University ensures that the net exposure is kept within reasonable limits by monitoring and, where necessary, adjusting its exposure.

**c) Liquidity risk**

Liquidity risk, also referred to as funding risk, is the risk that the University will encounter difficulty in raising funds to meet commitments. Liquidity risk may result from an inability to sell a financial asset quickly or at close to its fair value. Prudent liquidity risk management implies maintaining sufficient cash and ensuring the availability of funding through an adequate amount of committed facilities. The management of the University manages this risk by keeping a substantial portion of its financial assets in liquid form.

**20. Subsequent events**

On the basis of events subsequent to the balance sheet date, potential liabilities amounting to approximately \$10 million exist.



**UTT Graduate Ms. Patrice Olivier and her supervisor Ms. Zarrina Hosein.**

**Patrice Olivier:** Graduated in 2008, M.Sc. – ILEM

**Employer:** Fine Choice Meats Ltd

“Miss Patrice Olivier has been the Production Manager of Fine Choice Meats Ltd since September 2008. It is not often that one finds a young graduate with the right combination of attitude and aptitude, yet, this is exactly what Patrice has shown. Although her background was not specific to the poultry industry, Patrice has proven that she is capable of quickly learning and has adapted her knowledge and training, attained from the M.Sc. in Industrial Innovation, Entrepreneurship and Management (ILEM) at UTT, to the benefit of our company.

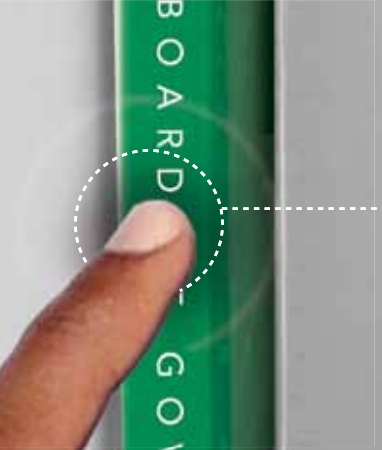
She has thus far proven herself to be a hard-working self-starter who invariably

understands, from the onset, exactly what a project is all about and how to get it done quickly and effectively. Specifically, we would like to compliment Patrice on the improvements she has made in the process flows in the production plant which have impacted positively on our production and delivery times.

We at Fine Choice Meats Ltd. are delighted to have Patrice; a self-confident, driven and conscientious individual, as a part of our team and it is our hope that UTT can continue to mould the future workforce with the successful attributes that Patrice has displayed.”

**Supervisor:** Ms. Zarrina Hosein,  
CEO  
Fine Choice Meats Ltd

REPORT OF THE BOARD  
GOVERNORS



Legal Status

The Board of Governors

Sub-Committees of the Board  
for the Financial Year 2007

Material Interests

Service Contracts

Board Tenders Committee

**Standing from left:** Mr. Ian Welch, Mr. Frank Look Kin, Dr. René Monteil, Mr. Errol Pilgrim, Mr. Scott Hilton-Clarke, Mr. Lincoln Warner, Dr. Dyer Narinesingh, Mr. Ravindra Nath Maharaj.

**Seated from left:** Ms. Joan John, Dr. Helmer Hilwig, Mr. Kenneth Gordon, Kenneth S. Julien, T.C. (Professor Emeritus) (Chairman), Ms. Margaret Richardson, and Professor Andrew Ramroop







Professor George Maxwell Richards, President of The Republic of Trinidad and Tobago, congratulates Mr. Frank Look Lin – Recipient of the Chaconia Medal Gold (2008) and Member of UTT Board – for his contribution to National Energy Development.

The Board of Governors is pleased to submit its Report for the year ended 2007 September 30:

	\$(000)	\$(000)
Excess of Income over Expenditure for the year after accounting for:		19,071
Directors' Fees and Expenses	330	
Depreciation	26,391	
Capital Grants released to Income	(26,182)	

### Legal Status

Pursuant to a decision of Cabinet in 2004 August, UTT was incorporated as a private non-profit company under the Companies Act, Chapter 81:01 on 2004 September 14. It was felt that incorporation as a non-profit company would allow the institution to be more responsive to the changing requirements of a new University.

As a non-profit company, UTT has no share capital. However, its By-Laws provide for four classes of Members (the equivalent of shareholders) of the University as follows:

- i. The Founder Member being the Corporation Sole on behalf of the Government (GORTT);
- ii. The First Members being the persons first named in the Articles of Incorporation;
- iii. Benefactor Members being persons (corporations and individuals) who make a financial contribution to the University

- based on a pre-determined level prescribed by the Board of Governors; and
- iv. Honorary Members being corporations and individuals who are invited by the Governors in recognition of their work for the University.

The Members of the University for the year ended 2007 September 30 were the Founder Member (the Corporation Sole) and First Members Kenneth Julien, T.C. (Professor Emeritus), Mr. Robert Riley and Mr. Ian Welch.

### Board of Governors

The members of the Board of Governors of UTT (also called Directors) for the year ended 2007 September 30 were as follows:

- Kenneth Julien, T.C. (Professor Emeritus) – Chairman
- Mr. Robert Riley
- Mr. Ian Welch
- Mr. Scott Hilton-Clarke
- Mr. Frank Look Kin
- Dr. René Monteil
- Professor Dyer Narinesingh
- Mr. Ravindra Nath Maharaj
- Mr. Errol Pilgrim
- Mr. Lincoln Warner
- Ms. Allyson Ramkerrysingh (member until 2007 March 29)
- Ms. Gisele Marfleet (member until 2007 March 29)
- Mr. Gervase Warner (member until 2007 July 31)

### Sub-Committees of the Board for the Financial Year 2007

The Board of Governors at its inaugural meeting held on 2005 March 11 approved the establishment of the following Sub-Committees:

1. Executive
2. Finance and Budget
3. Planning and Development
4. Human Resource and Appointments
5. Audit

### A) The Executive Committee

The membership of the Executive Committee effective 2005 April 29 was as follows:

- Kenneth Julien, T.C. (Professor Emeritus)
- Dr. René Monteil
- Professor Dyer Narinesingh
- Mr. Ravindra Nath Maharaj
- Mr. Robert Riley
- Mr. Ian Welch
- Mr. Gervase Warner (member until 2007 July 31)

### B) The Board Tenders Committee

At the meeting of the Executive Committee held on 2005 July 21, it was decided that the Executive Committee would act as the Tenders Committee for UTT pending approval of UTT's Procurement Policies and Procedures by the Board.

UTT's Manual of Procurement Policies and Procedures was approved by the Board on 2005 December 12 and revised on 2006 July 10.

### C) The Audit Sub-Committee

The membership of the Audit Sub-Committee for the year ended 2007 September 30 was as follows:

- Mr. Frank Look Kin – Chairman
- Mr. Errol Pilgrim

### D) The Finance and Budget Sub-Committee

The membership of the Finance and Budget Sub-Committee for the year ended 2007 September 30 was as follows:

- Mr. Gervase Warner – Chairman (member until 2007 July 31)
- Mr. Errol Pilgrim
- Mr. Frank Look Kin
- Dr. René Monteil
- Ms. Allyson Ramkerrysingh (member until 2007 March 29)
- Ms. Feona Lue Ping Wa – Financial Controller
- Professor K.D. Srivastava – then Provost & Senior Vice President
- Mr. Dave Bhajan – VP Capital Projects & Institutional Planning

### E) The Planning and Development Sub-Committee

The membership of the Planning and Development Sub-Committee for the year ended 2007 September 30 was as follows:

- Kenneth Julien, T.C. (Professor Emeritus) – Chairman
- Dr. René Monteil
- Mr. Scott Hilton-Clarke
- Mr. Ravindra Nath Maharaj
- Mr. Lincoln Warner
- Ms. Gisele Marfleet  
(member until 2007 March 29)
- Professor K.D. Srivastava – then Provost & Senior Vice President  
(member until 2007 June 30)
- Dr. Peter Smith – then Associate Provost, Research & Development
- Mr. Dave Bhajan – VP Capital Projects & Institutional Planning
- Ms. Jennifer Sampson – Senior Advisor, Office of the President
- Professor David McGaw – Provost  
(member w.e.f. 2007 August 15)

### F) The Human Resource and Appointments Sub-Committee

The membership of the Human Resource and Appointment Sub-Committee for the year ended 2007 September 30 was as follows:

- Mr. Scott Hilton-Clarke – Chairman
- Dr. René Monteil
- Mr. Ravindra Nath Maharaj
- Professor Dyer Narinesingh
- Ms. Allyson Ramkerrysingh  
(member until 2007 March 29)
- Ms. Gisele Marfleet  
(member until 2007 March 29)
- Professor K.D. Srivastava  
(member until 2007 June 30)
- Mr. Oliver Flax – then VP Human Resources and Administration
- Professor David McGaw – Provost  
(member w.e.f. 2007 August 27)

#### Material Interests

At no time during or at the end of the financial year did any Director or Officer have any material interests in any contract or arrangement in relation to the business of the University.

Clause 10(10) of the University's By-Laws requires a Director or Officer to disclose to the Board and the Members any material contract entered into with the University.

#### Service Contracts

Other than that entered into with the President of the University with effect from June 2005, there were no service contracts between the University and any of its Directors for the year ended 2007 September 30.

The service of the Executive Director was donated by BG Trinidad and Tobago for the period under review.

#### Board Tenders Committee

At a meeting of the Board of Governors held on 2008 August 29, the Board resolved that the membership of the Board Tenders Committee be revised as follows:

- Kenneth Julien, T.C. (Professor Emeritus) – Chairman
- Dr. René Monteil
- Mr. Scott Hilton-Clarke
- Mr. Lincoln Warner
- Professor Dyer Narinesingh
- Mr. Frank Look Kin

#### ***Appointment of new Chairmen of Audit, and Finance and Budget Sub-Committees***

Following the resignation of Mr. Gervase Warner from the Board of Governors, the Board ratified the appointment of Mr. Frank Look Kin as pro tem Chairman of the Finance and Budget Sub-Committee and Mr. Errol Pilgrim as pro tem Chairman of the Audit Sub-Committee (both with effect from 2007 September).

### **Changes in the Membership of the Board of Governors**

Pursuant to its Articles of Incorporation, there shall be a minimum of eight and a maximum of 15 Directors/Governors on the Board of UTT.

Although the first members of the Board of Governors were appointed by the Government, in 2007 the re-election of Directors/Governors was carried out in accordance with UTT's approved By-Laws (which provide that the Government, through the Corporation Sole –being the Minister of Finance or his proxy – has the power to exclusively appoint one-third of the maximum number of Directors, while the First Members, being the only other Members, have the power to appoint the remaining Directors).

Ms. Gisele Marfleet and Ms. Allyson Ramkerrysingh did not seek re-appointment as Directors/Governors of the Board at the Annual Meeting of Members held on 2007 March 29 and they both ceased being members of the Board of Governors with effect from this date.

#### *Period 2007 March 29 to 2009 March 28*

At the Annual Meeting of Members held on 2007 March 29 the following 10 persons were re-appointed as Directors of the Board for a period of two years from the date of that meeting (for the period up to 2009 March 28):

- Mr. Robert Riley
- Mr. Ian Welch
- Dr. René Monteil
- Mr. Frank Look Kin
- Professor Dyer Narinesingh
- Mr. Scott Hilton-Clarke
- Mr. Ravindra Nath Maharaj
- Mr. Errol Pilgrim
- Mr. Lincoln Warner
- Mr. Gervase Warner

Mr. Gervase Warner tendered his resignation as a Director/Governor with effect from 2007 July 31.

#### *Period from 2009 March 29*

By written resolution signed by the Corporation Sole on behalf of the Government pursuant to By-Law 14(18), the following persons were appointed/re-appointed as Directors/Governors of the Board (the Government's appointees) with effect from 2009 March 29:

- Kenneth Julien, T.C. (Professor Emeritus) – re-appointed for the period 2007 August 23 to 2010 August 22.
- Mr. Kenneth Gordon, CMG – appointed for the period 2009 March 29 to 2011 March 28.
- Professor Andrew Madan Ramroop, OBE, CMG for the period 2009 March 29 to 2011 March 28.
- Dr. Helmer Hilwig for the period 2009 March 29 to 2011 March 28.
- Ms. Margaret Richardson for the period 2009 March 29 to 2011 March 28.

By written resolution signed by the First Members of the University (Professor Julien and Mr. Welch), the following persons were re-appointed as Directors/Governors for the period 2009 March 29 to 2011 March 10:

- Dr. René Monteil
- Mr. Frank Look Kin
- Professor Dyer Narinesingh
- Mr. Scott Hilton-Clarke
- Mr. Ravindra Nath Maharaj
- Mr. Errol Pilgrim
- Mr. Lincoln Warner
- Mr. Welch (for the period 2009 March 29 to 2010 August 10).

By written resolution signed by the First Members of the University, Ms. Joan John was appointed as a member of the Board of Governors with effect from 2009 September 7 for a period of two years.

Mr. Robert Riley by letter dated 2008 December 29 informed the University that he was not able to accept any offer of re-appointment as a Director/Governor of the Board beyond 2009 March 29 and is no longer a member of the Board.

Mr. Robert Riley also resigned as a Member of the University with effect from 2009 March 29.

## 10.0 REPORT OF THE BOARD OF GOVERNORS

### **Current Membership of the Board of Governors**

The current composition of the Board of Governors as at 2009 September 15 is as follows:

- Kenneth Julien, T.C. (Professor Emeritus) – Chairman
- Professor Andrew Madan Ramroop
- Professor Dyer Narinesingh
- Mr. Errol Pilgrim
- Mr. Frank Look Kin
- Dr. Helmer Hilwig
- Mr. Ian Welch
- Ms. Joan John
- Mr. Kenneth Gordon
- Mr. Lincoln Warner
- Ms. Margaret Richardson
- Mr. Ravindra Nath Maharaj
- Dr. René Monteil
- Mr. Scott Hilton-Clarke

### **Revised Membership of Board Sub-Committees**

On 2009 June 22 the membership of all Board Sub-Committees was revised as follows:

#### **A) The Executive Committee**

- Kenneth Julien, T.C. (Professor Emeritus) – Chairman
- Professor Dyer Narinesingh
- Mr. Frank Look Kin
- Mr. Kenneth Gordon
- Dr. René Monteil
- Mr. Scott Hilton-Clarke

#### **B) The Board Tenders Committee**

##### **Members:**

- Mr. Frank Look Kin (Chairman)
- Dr. René Monteil
- Professor Dyer Narinesingh
- Mr. Scott Hilton-Clarke
- Mr. Kenneth Gordon

##### **Members Ex-Officio:**

- Provost – Professor David McGaw
- Vice President Finance and Procurement – Mr. Lennard Prescod
- Vice President Capital Projects and Institutional Planning – Mr. Dave Bhajan
- Corporate Secretary – Ms. Debbie Sirjusingh
- Committee Secretary: Mr. Dayle Connelly – Manager, Legal

#### **C) The Audit Sub-Committee**

##### **Members:**

- Mr. Errol Pilgrim (Chairman)
- Mr. Frank Look Kin
- Ms. Margaret Richardson

##### **Members Ex-Officio:**

- Provost – Professor David McGaw
- Senior Vice President Student Affairs and Human Services – Mr. Oliver Flax
- Vice President Finance and Procurement – Mr. Lennard Prescod
- Financial Controller – Ms. Feona Lue Ping Wa
- Manager, Internal Audit – Ms. Florence Bhagwandass
- Corporate Secretary – Ms. Debbie Sirjusingh

#### **D) The Finance and Budget Sub-Committee**

- Mr. Kenneth Gordon – Chairman
- Mr. Frank Look Kin
- Dr. René Monteil
- Mr. Errol Pilgrim

##### **Members Ex-Officio:**

- Provost – Professor David McGaw
- Senior Vice President Student Affairs and Human Services – Mr. Oliver Flax
- Vice President Finance and Procurement – Mr. Lennard Prescod
- Vice President Capital Projects and Institutional Planning – Mr. Dave Bhajan
- Financial Controller – Ms. Feona Lue Ping Wa
- Senior Advisor, Office of the President – Mr. Ramnarine Ramnasibsingh
- Corporate Secretary – Ms. Debbie Sirjusingh

#### **E) The Planning and Development Sub-Committee**

##### **Members:**

- Kenneth Julien (Professor Emeritus) – (Chairman)
- Dr. René Monteil
- Mr. Scott Hilton-Clarke
- Mr. Ravindra Nath Maharaj
- Mr. Lincoln Warner
- Mr. Kenneth Gordon
- Dr. Helmer Hilwig

#### **Members Ex-Officio:**

- Provost – Professor David McGaw
- Vice Provost Research and Postgraduate Studies – Professor Adel Sharaf
- Vice President Capital Projects and Institutional Planning – Mr. Dave Bhajan
- Vice President, Campus Planning and Architectural Design – Mr. Darren Brathwaite
- Vice President, Quality Assurance and Institutional Advancement – Dr. Ruby Alleyne
- Senior Advisor, Office of the President – Ms. Jennifer Sampson
- Senior Advisor, Office of the President – Mr. Ramnarine Ramnasibsingh
- Senior Manager, Planning and Development – Mr. Cedric Connor
- Corporate Secretary – Ms. Debbie Sirjusingh

#### **F) The Human Resource and Appointments Sub-Committee**

##### **Members:**

- Mr. Scott Hilton-Clarke (Chairman)
- Dr. René Monteil
- Ms. Margaret Richardson
- Mr. Lincoln Warner
- Dr. Helmer Hilwig
- Professor Andrew Ramroop

##### **Members Ex-Officio:**

- Provost – Professor David McGaw
- Senior Vice President Human Resources – Mr. Oliver Flax
- Vice President Finance and Procurement – Mr. Lennard Prescod
- Vice President, Quality Assurance and Institutional Advancement – Dr. Ruby Alleyne
- Corporate Secretary – Ms. Debbie Sirjusingh

#### **The Corporate Secretary**

The Corporate Secretary for the period up to 2007 May 15 was Mr Errol Ashby. He has been succeeded by Ms. Debbie Sirjusingh who was appointed as the new Corporate Secretary with effect from 2007 May 16. Mr Dayle Connelly, Manager Legal, was appointed by the Board of Governors as Assistant Corporate Secretary with effect from 2008 August 29.



*Ms. Debbie Sirjusingh  
Corporate Secretary*

#### **Re-Appointment of Auditors**

At a Special Meeting of the Members of the University held on 2006 December 18, on the recommendation of the Board of Governors, the Members resolved that the firm of Ernst & Young, Chartered Accountants be appointed as Auditors of the University until the close of the next Annual Meeting of the Members of the University at a remuneration to be fixed by the Board of Governors of the University.

Resolutions to re-appoint Ernst & Young as Auditors until the next succeeding Annual General Meeting of Members and to authorise the Board to determine their remuneration were proposed and accepted at the 2008 (3rd) Annual Meeting of Members of the University held on 2008 July 03.

The Board at its meeting held on 2008 August 29 agreed to the engagement of Ernst & Young, Chartered Accountants, to conduct the combined audits of the Accounts & Financial Statements of UTT for the years ended 2007 September 30 and 2008 September 30. The Auditors were informed of their engagement by letter dated 2008 September 26.

#### **Indemnities and Insurance**

The University maintains liability insurance for its Directors and Officers. With effect from 2009 January 13, new insurance arrangements for the provision of Directors and Officers' Liability Insurance were approved.

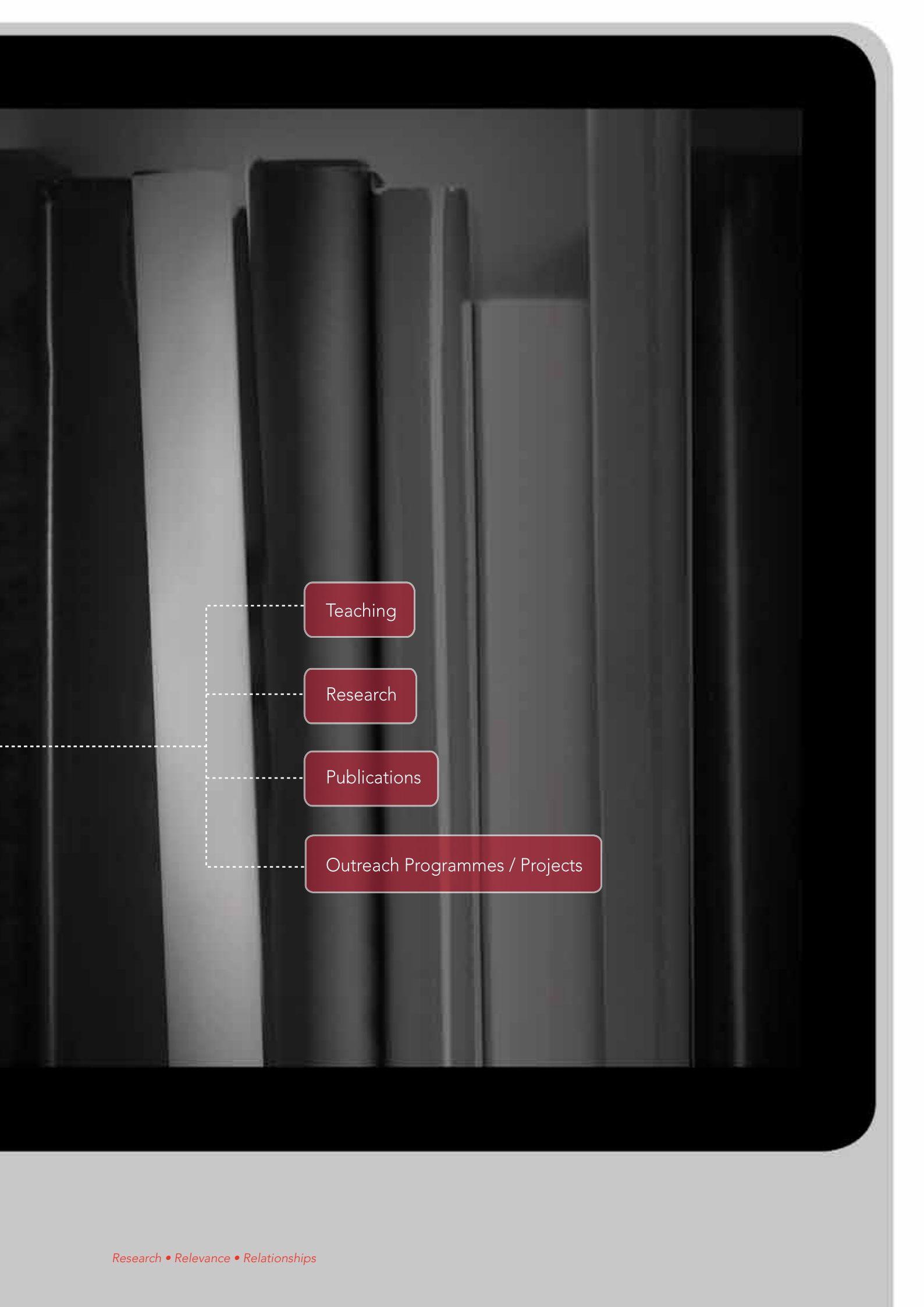
Cover is not provided in the event that a Director or Officer is proved to have acted fraudulently or dishonestly.



*Kenneth Julien, T.C. (Professor Emeritus)  
CHAIRMAN OF THE BOARD OF GOVERNORS  
2009 September 15*

INSTITUTE FOR CRIMINOLOGY





Teaching

Research

Publications

Outreach Programmes / Projects



**UTT Stakeholders' Consultation on Security & Public Safety Consultation in July 2009:** Seated at the head table (from left to right): Commodore Anthony Franklin, Director, Institute of Marine Affairs; Professor Adel Sharaf, Vice-Provost; Professor Ramesh Deosaran (Emeritus), Programme Professor; Professor Anthony Joseph, Professor in Practice; Mr. Clarence Rambharrat, Employers' Consultative Association and Mr. Omar Dubai, Deputy Chief Security Officer, National Maintenance Training and Security Company Ltd.

The Mission of the Institute for Criminology and Public Safety (ICPS) is:

*"To provide high quality professional programmes, academic and practical in content, relevant and policy-oriented, serving the demands of crime management, justice and public safety while earning a first-class reputation for teaching, research, policy development and public education."*

Given its mandate, the ICPS has been engaging in a number of activities including the:

- Development of teaching programmes in consultation with industry stakeholders;
- Conducting a number of research projects, for example, on youth violence, juvenile delinquency, gangs and crime statistics;
- Publication of its main journal – the only such journal in the Caribbean (Caribbean

Journal of Criminology and Public Safety [CJCPS] ), as well as, the preparation of two manuscripts – the 2009 volume of the CJCPS and a monograph on the crime prevention efforts of 10 civic organisations in Trinidad and Tobago; and

- Hosting of several outreach programmes and projects.

### Teaching

#### Training/Teaching Programmes

Three training/teaching programmes in criminology, security and public safety have been developed by the ICPS in consultation with major industry stakeholders. These are:

- Certificate in Security and Public Safety
- Diploma in Security and Public Safety

- Bachelor of Applied Science in Criminology and Public Safety (B.A.Sc.)

These programmes are expected to be implemented in 2010 and will have both applied as well as academic content. Training in cutting-edge and contemporary issues, methods and technology will be treated in these courses. Also, the programmes will be offered both full and part times.

#### **UTT-Private Sector Partnership: Certificate in Security and Public Safety**

On Saturday September 12, 2009, a stakeholders' consultation was held with owners/managers of the private security industry and senior officers of UTT at the Crowne Plaza Hotel, Port of Spain. UTT presented the Certificate in Security and Public Safety and discussions followed for the establishment of a UTT-PRIVATE SECTOR PARTNERSHIP for this programme. Arising from this stakeholders' consultation is a Committee to operationalise the Partnership that will work out the financial and logistical details.

#### **Short Professional Development Courses**

The ICPS will develop and offer a number of short professional development courses in 2010. These will be targeting the special needs of the private security industry, police and prison services and education system amongst others.

#### **Graduate Programmes**

In 2010, following the implementation of the three main teaching programmes outlined earlier, the ICPS will engage in the development of three graduate programmes in criminology and public safety. These are the:

- Master of Science in Criminology and Public Safety (M.Sc.)
- Master of Philosophy in Criminology and Public Safety (M.Phil.)
- Doctor of Philosophy in Criminology and Public Safety (Ph.D.)

#### **International Collaboration**

The ICPS is currently engaged in establishing strategic institutional linkages with key international universities and centres in the areas of security, criminology and public safety. These include, for example, the Institute of Criminology, Cambridge University, England; St. Petersburg College, Florida International University and the University of Miami, USA. Appropriate memoranda are now being finalised. These arrangements are being sought to bridge the gap between UTT's programmes and those of the international community.

#### **Research**

#### **Youth Violence and Delinquency: A Tracer Study**

The ICPS is currently engaged in the data analysis and report preparation on a Tracer Study which involved tracking the behavioural and attitudinal characteristics of secondary school students from Form One through to Form Five. More specifically, it examines not only students' involvement in violence and delinquency but also their social psychological dispositions such as civic attitudes, self-esteem, and relative deprivation. This longitudinal study is the first of its kind in the English-speaking Caribbean and has numerous implications for policy development. Findings and recommendations are being submitted to the Ministry of Education on an on-going basis. Appropriate publications will be made in 2010.

#### **Crime Statistics**

The ICPS continues to be engaged in the compilation and analysis of various relevant statistics and data. Appropriate reports and analyses are submitted to the relevant governmental ministries and agencies, as well as, where applicable, published as part of the ICPS's public education drive.

#### **Police and Penal Reform**

The ICPS continues to conduct research in the areas of police and penal reform in Trinidad and Tobago and the wider Caribbean. Policing

issues such as – community policing, police training and retraining, crime reduction, crime prevention and crime-solving, public confidence in the police, and police reform - form part of the research and public policy formulation agenda. With regard to penal reform, issues such as prisoner recidivism, rehabilitation, restorative justice, prison conditions, mediation and conflict resolution, and human resource training and retraining are researched.

### Other Research Areas

The ICPS continues to conduct research in a number of other areas, for example, the criminal justice system, gang behaviour and prevention, fear of crime, sentencing, domestic violence and child abuse, road safety, private security and public safety.

### Publications

#### Caribbean Journal of Criminology and Public Safety

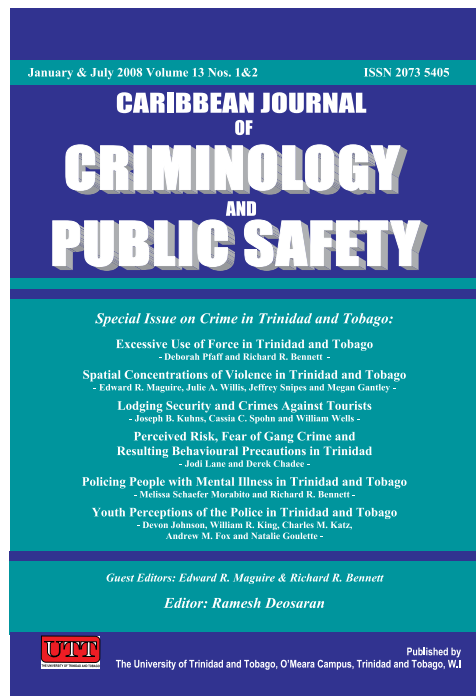
On May 2, 2009, the ICPS launched the 2008 Volume of the 13-year old journal, *Caribbean Journal of Criminology and Public Safety (CJCPS)* (ISSN 2073 5405), now published by UTT, at the John S. Donaldson campus. Editor is Professor Ramesh Deosaran (Emeritus).

The CJCPS is the only such journal in the English-speaking Caribbean devoted to criminology, criminal justice and public safety. It helps develop and promote research and policy relevant to criminology and public safety in the Caribbean.

This volume was a Special Issue devoted to "Crime in Trinidad and Tobago". Guest Editors were Professors Edward R. Maguire and Richard R. Bennett, American University, USA. This and previous issues of the journal can be accessed on [www.cjcsp.com](http://www.cjcsp.com).

Special presentations of the CJCPS were given to distinguished members of society. These included:

- Professor David McGaw, Provost, UTT
- Dr. Derek Chadee, Senior Lecturer, UWI & Contributor to this Volume



*Caribbean Journal of Criminology and Public Safety (Volume 13)*, launched at UTT's John S. Donaldson campus on May 2, 2009, was edited by Professor Ramesh Deosaran (Emeritus), Programme Professor at UTT. This Volume shines the spotlight on crime in Trinidad and Tobago.

- Mr. Andrew Johnson, Trinidad and Tobago Chamber of Industry and Commerce
- Mr. Michael Aboud, Chairman, Amalgamated Security Services Limited
- Mr. David Abdulah, Education and Research Officer, Oilfield Workers Trade Union (OWTU) & Head, Federation of Independent Trade Unions and Non-Governmental Organizations (FITUN)
- Mr. Marlon Hopkinson, President, Media Association of Trinidad and Tobago (MATT)

The 2009 volume of the CJCPS is in progress and is expected to be launched within the next three months.

#### Celebrating The Civic Spirit: A Crime Prevention Project

In October 2009, the ICPS launches its latest publication – *Celebrating the Civic Spirit: A*

*Crime Prevention Project* authored by Professor Ramesh Deosaran (Emeritus), Ian K. Ramdhanie and Vidya Lall (ISBN 978 976 8223 96 8).

This is a publication based on a joint research/policy project with the United Nations Office for Drug Control and Crime Prevention (UNODC) and 10 civic organisations in Trinidad and Tobago. These organisations are:

- Families In Action
- Family Court of Trinidad and Tobago
- New Life Ministries
- Peace Promotion Project, Ministry of Education
- Piparo Empowerment Centre
- Police Youth Club, Roxborough
- Rape Crisis Society
- SERVOL
- Transform Life Ministries
- Vision on Mission

### Outreach Programmes / Projects

#### Youth CareerTRACK Project

In March 20, 2009, the ICPS embarked on a special project entitled, YOUTH CareerTRACK. This project aims to develop actionable plans to stimulate and sustain interest and enthusiasm in youths from an early age (12 to 18 years) in careers in the various protective, defence and security services.

To date, the ICPS hosted three consultations with key stakeholders, for example, representatives from various government ministries and agencies, NGOs, schools, community groups, senior officers from the Trinidad and Tobago Police Service, Trinidad and Tobago Fire Service, Trinidad and Tobago Prison Service, Trinidad and Tobago Defence Force, Civilian Conversation Corps, MILAT, MYPART, YTEPP, scouts, girls' guides, students, PanTrinbago, NPTA, TUTTA, etc.

Arising from these discussions were 50 recommendations which are now being prioritized by UTT's Advisory Committee.

#### Pre-University Programme (PUP) – Career Fair 2009

The ICPS participated in a Career Fair for the Pre-University Programme (PUP) students for 2009. This was held on March 4, 2009 at the John S. Donaldson campus.

#### UTT Task Force to Review Programmes on Security and Defence

In January 2008, UTT's President established a UTT Task Force to Review Programmes on Security and Defence. Its membership includes:

- Professor Ramesh Deosaran (Emeritus), Programme Professor, ICPS, UTT (Chairman)
- Professor Anthony Joseph, Professor in Practice, Environmental and Safety Engineering, UTT
- Commodore Anthony Franklin, Director, Institute of Marine Affairs, UTT
- Ms. Debbie Sirjusingh, Corporate Secretary, UTT
- Samuel Jones Jr., Senior Manager, Security Services, UTT

The ICPS provides research and administrative support to this Task Force.

#### Faculty:

The current staff complement of the ICPS includes:

- Professor Ramesh Deosaran (Emeritus) – Programme Professor
- Ms. Vidya Lall, B.A. (Hons.), M. Phil., (Ph.D. candidate) – Senior Research Assistant
- Mr. Ian K. Ramdhanie, B.Sc. (Hons.), M. Sc., (Ph.D. candidate) – Senior Research Assistant
- Ms. Chantelle Cummings, B.Sc. (Hons.), M. Sc. – Programme Assistant
- Ms. Kervelle Durant, B.Sc. (Hons), (M. Sc. candidate) – Programme Assistant
- Mr. Kevin Soyer – Office Assistant

SCHOOL OF POSTGRADUATE STUDIES







**Professor Adel Sharaf**  
*Vice Provost, Postgraduate Studies,  
Research & Development and  
Programme Professor, Energy Systems*

In June 2008, The University of Trinidad and Tobago introduced the new position of Vice Provost, School of Post Graduate Studies, Research and Development. This is in keeping with the University's mission to be both future driven and sustainable, a University with a mission for scholarly teaching, enterprise and entrepreneurship.

The Office of the Vice Provost plays an important leadership and catalyst role in the achievement of excellence in Research and Graduate Studies. Through the Office of Research and Development, the Vice Provost is responsible for research facilitation and promotion, including maximizing research funding opportunities, the development and implementation of policies related to research, technology transfer and providing a full range of research services and support to UTT Researchers.

Through the School of Post Graduate Studies, students, faculty and administrators are guided through the academic and administrative components of The University of Trinidad and Tobago's Graduate programmes, while also offering assistance in matters pertaining to Graduate Studies.

The University is fully engaged in its Community by realising the three Pillars of Academic life, namely: Teaching, Research and Community Service. The need to address emerging world technological changes and their serious global impact on the international economy and tilting employment markets are paramount to ensuring the University's long term competitiveness and responsiveness.

The need for establishing International Research Linkages and Academic channels requires sustainable effective research excellence and competitive edge. UTT realises that Value Added Research is the engine of employment, prosperity and progress.

The pages following contain a selection of the Research Projects in which the University is currently engaged (Appendix a) and selected Papers published over the two years 2007/8 and 2008/9 (Appendix b).



**UTT Graduate Mr. Sherwin Wallace and his supervisor Mrs. Betty Adams-Skeete.**

**Mr. Sherwin Wallace:** Graduated in 2008, M.Sc. – Information and Communications Technology

**Employer:** Ministry of Education; Belmont Secondary School

*“Mr. Sherwin Wallace is employed with the Ministry of Education and has been assigned to Belmont Secondary School as the Information Technology teacher since August 2004. Mr. Wallace has provided excellent technological support to all school personnel and, as the only IT teacher in the school, he enjoys a very demanding workload. Our students have benefited tremendously from his vast experience and knowledge which he willingly imparts at all times. Members of staff have relied on his gentle guidance, persuasion and assistance*

*to enable them to improve their computer literacy skills.*

*It has been a learning and very rewarding experience working with Mr. Wallace and I feel confident that the knowledge he acquired through attaining the M.Sc. in ICT at The University of Trinidad and Tobago (UTT) has made, and will continue to allow him to make, a positive contribution to Belmont Secondary School where he also serves as an integral member of the school’s ICT committee.”*

**Supervisor:** Mrs. Betty Adams-Skeete  
Principal (Secondary)  
Belmont Secondary School

Appendix a: SELECTED RESEARCH PROJECTS  
as at August 31 2009

PROGRAMME	RESEARCH TOPICS
Master of Philosophy	<ul style="list-style-type: none"> <li>• Biomediation of a fuel sample.</li> <li>• A research analysis of the oil and gas reserves of Trinidad and Tobago.</li> <li>• Developing a macroeconomic model of the Trinidad and Tobago economy to determine the contribution of the energy sector towards sustainable growth.</li> <li>• Development of an optimisation modelling approach for exploiting uncertainty and opportunities in the LNG supply chain.</li> <li>• A critical review of the development of policies and law in Trinidad and Tobago for the sustainable use and management of marine resources.</li> <li>• The environmental impact of housing developments and built-in infrastructure in Trinidad.</li> <li>• Conversion of carbon dioxide valuable products.</li> <li>• Hybrid fuel cell and wave energy utility scheme.</li> <li>• Land use development and impacts on the environment.</li> <li>• Water treatment and purification technology.</li> <li>• Concrete installation condition monitoring using electric signature monitoring technologies.</li> <li>• Optimisation of a reactor for biodiesel production for use in a diesel engine.</li> <li>• Design a pair of robotic arms capable of producing the range of strokes needed to play the tabla.</li> <li>• Evaluation of local forages on growth and reproductive performance in rabbits with an aim to develop forage-based feeding systems.</li> </ul>
Master of Philosophy in Education	<ul style="list-style-type: none"> <li>• A comparative investigation into two teaching approaches in the teaching of macroeconomics at UTT.</li> </ul>
Master of Philosophy in Environmental Science and Management	<ul style="list-style-type: none"> <li>• The impact of flooding on water quality.</li> </ul>
Master of Philosophy in Environmental Studies	<ul style="list-style-type: none"> <li>• Air Pollution and Health: The effect of motor vehicle emissions on respiratory health and assessment of the relationship between exposure to motor vehicle emissions and incidence of respiratory diseases.</li> </ul>
Master of Science in Process and Utilities Engineering	<ul style="list-style-type: none"> <li>• The optimisation of heat exchanger networks using pinch technology to improve energy efficiency in a process plant.</li> </ul>
Master of Philosophy/Doctor of Philosophy in Process and Utilities Engineering	<ul style="list-style-type: none"> <li>• Application of lignin fibres as a composite additive in concrete.</li> </ul>

PROGRAMME	RESEARCH TOPICS
<p>Doctor of Philosophy</p>	<ul style="list-style-type: none"> <li>• Evaluating storage and leakage scenarios for carbon dioxide sequestration in Trinidad and Tobago.</li> <li>• A strategy for CO<sub>2</sub> emissions mitigation in T&amp;T (CO<sub>2</sub> inventory and techno-economic comparisons of capture technologies).</li> <li>• Selection and screening of surfactants for enhanced recovery in gas condensate reservoirs.</li> <li>• Proposal for an advanced modelling approach for studying the behaviour of gas prices in regional markets.</li> <li>• Develop and explain a methodology for tracing the indentured East Indian ancestors of present day people of Trinidad and Tobago and its diaspora.</li> <li>• Optimisation of pectoral exercises using EMG.</li> <li>• Hydraulic-based wave force simulator.</li> <li>• An investigation of the recovery of oil from tar sand deposits in Trinidad and Tobago by <i>in situ</i> combustion.</li> <li>• Analysis of performance of different photovoltaic technology with time under field testing in Trinidad and Tobago.</li> <li>• An evaluation of different techniques for recovery of the heavy oil from the Parrlands E Formation and testing the best available technique.</li> <li>• Characterisation of the Nozzle U-Loop Fermenter for production of Single Cell Protein.</li> <li>• Characterisation of seawater desalination membranes under varying pressure and flow rates for application in a wave- powered desalination unit.</li> <li>• Feasibility study of methanol as a fuel for power generation in Caribbean markets.</li> <li>• Sustainable agricultural production.</li> <li>• Design and develop a sensor for trace metals or an organic substance in water or soil.</li> <li>• Environmental sustainability and waste management.</li> <li>• Germicidal control and disinfection technology.</li> <li>• Biodiesel production for island electricity generation from plants and algae.</li> <li>• Curriculum studies.</li> <li>• Emergency response planning and implementation for the Maracas St. Joseph Village Community.</li> <li>• Narratives of in-service teachers in Trinidad and Tobago: An analysis of their motives, expectations and experiences before formal teacher training. Implication for future policies and practices in teacher training institutions.</li> <li>• ESA – Electrical signal analysis and condition monitoring.</li> <li>• Investigation of oil content of indigenous algae for biodiesel production.</li> <li>• Development of methanol reformer for PEMFC against membrane crossover in DMFC.</li> <li>• Deveopment of a suitable cost effective method for on line detection, statistical assessment and mitigation of this country's power quality problem.</li> </ul>

Appendix a: SELECTED RESEARCH PROJECTS  
as at August 31 2009

PROGRAMME	RESEARCH TOPICS
Doctor of Philosophy	<ul style="list-style-type: none"> <li>• Educational leadership and non-performing primary schools in two educational districts in the Republic of Trinidad and Tobago.</li> <li>• The evaluation of the impact of fertiliser, herbicides and pesticides on the environment and its implications on cattle livestock production.</li> <li>• Energy from Waste: Generation of energy from unconventional sources study into production of biogas from eco-sanitation facilities.</li> <li>• How effective has been the teacher education policies in restructuring educational development and training in the Caribbean Community (CARICOM) and more specifically in Trinidad and Tobago to address the major social problems facing youth.</li> <li>• Examining the relationship between teacher professional development and student learning outcomes.</li> <li>• Mas and the Monarchy.</li> <li>• An investigation of the environmental impacts of mining operations on the terrestrial environment.</li> <li>• The development of an implementation model for wind farms and wind energy solutions in the Caribbean developing nations, for sustainable energy and economic independence.</li> </ul>
Doctor of Philosophy in Agriculture	<ul style="list-style-type: none"> <li>• Microbiology and agronomic investigations on indigenous soil microorganisms with biofertiliser potential for vegetable production in Trinidad and Tobago.</li> </ul>
Doctor of Philosophy in Biomedical Engineering	<ul style="list-style-type: none"> <li>• Synthesis of novel compounds for the purpose of diabetes therapy.</li> </ul>
Doctor of Philosophy in Carnival Studies	<ul style="list-style-type: none"> <li>• Origin and development of Dimanche Gras show.</li> </ul>
Doctor of Philosophy in Cultural Studies	<ul style="list-style-type: none"> <li>• The changing dynamics of some major festivals and rituals brought by East Indians to Trinidad and Tobago and their counterparts in India.</li> <li>• The Indian film industry in Trinidad and Tobago: The oral and musical tradition.</li> <li>• Culture and identity in Indo-Trinidadian music within a multiracial society.</li> </ul>

PROGRAMME	RESEARCH TOPICS
<p>Doctor of Philosophy in Education</p>	<ul style="list-style-type: none"> <li>• Teachers' Perceptions of teaching as a Profession in Trinidad and Tobago – An investigation into individual realities.</li> <li>• Exploring the use of self-assessment in improving problem-solving among pre-service teachers in an undergraduate mathematics course.</li> <li>• Teacher experiences in learning to integrate technology in instructional practice in Trinidad and Tobago.</li> <li>• A proposal to study the relationship between reform of the Ministry of Education (decentralisation ) and reforms in teacher education in Trinidad and Tobago.</li> <li>• Teacher professional identity.</li> <li>• Advantages and disadvantages of presentation/teaching of Literature novels (British, Australian and West Indian) in written vs film format.</li> <li>• The Haves and the Have-nots: Conjoining experience and academia in Early Childhood Care and Education.</li> <li>• Demotivation: a link to low achievement in adolescent males.</li> <li>• The dynamics of teacher empowerment and curriculum implementation.</li> <li>• Leading and managing school health practices: A pilot study of selected primary schools in the St. George East Education Division.</li> <li>• An investigation of teachers' beliefs and practices of classroom assessment in mathematics at the infant level.</li> <li>• The influence of teachers' technology training on the integration of technology into secondary schools in Trinidad and Tobago.</li> <li>• Technology in primary Spanish education.</li> </ul>
<p>Doctor of Philosophy in Environmental, Health and Safety</p>	<ul style="list-style-type: none"> <li>• Indoor Air Quality: Investigate indoor air quality of buildings in Trinidad suspected to cause discomfort or illness of the occupants.</li> <li>• OSH surveillance system: Development of an Occupational Safety and Health Surveillance System for Trinidad and Tobago.</li> </ul>
<p>Doctor of Philosophy in Environmental Science</p>	<ul style="list-style-type: none"> <li>• Air Pollution and Energy: Landfill emissions and the environment in Trinidad.</li> </ul>
<p>Doctor of Philosophy in Environmental Studies</p>	<ul style="list-style-type: none"> <li>• Water Management System and Pollution: The management of water production and pollution prevention systems in Trinidad and Tobago.</li> </ul>

Appendix a: SELECTED RESEARCH PROJECTS  
as at August 31 2009

PROGRAMME	RESEARCH TOPICS
Doctor of Philosophy in Health and Safety	<ul style="list-style-type: none"> <li>• Safety and Health Education: The contribution of health and safety education to the welfare of the craft person, in particular the jeweller.</li> </ul>
Doctor of Philosophy in Information and Communication Technology	<ul style="list-style-type: none"> <li>• Wireless Networking.</li> <li>• Data Security.</li> <li>• Methods for improving performance in wireless networks.</li> </ul>
Doctor of Philosophy in Literary and Cultural Studies	<ul style="list-style-type: none"> <li>• Novels of Lawrence Scott.</li> </ul>
Doctor of Philosophy in Manufacturing Engineering	<ul style="list-style-type: none"> <li>• Economic and social development impact of technology enterprises: A case of Trinidad and Tobago.</li> <li>• To develop a robotic device for applications in the manufacture of musical instruments in the idiophone class.</li> <li>• To develop a walking, biped, sporting robot.</li> </ul>
Doctor of Philosophy in Mechatronics	<ul style="list-style-type: none"> <li>• To design, fabricate and test a bowling arm.</li> <li>• Fuzzy logic-based operator decision support system.</li> <li>• Robot capable of playing tenor pan.</li> </ul>
Doctor of Philosophy in Petroleum Engineering	<ul style="list-style-type: none"> <li>• An Investigation of the Reserves and the Recovery of the Residual Oil in the Guapo Field.</li> <li>• Exploration of some Instability and Incompatibility Characteristics of the Heavy Oils of Trinidad and Tobago.</li> </ul>
Doctor of Philosophy in Process and Utilities Engineering	<ul style="list-style-type: none"> <li>• Determination of the active Components of the Pitch Lake Bitumen and the Formulation of Asphalt Products.</li> <li>• Techno-economic evaluation of Trinidad's tar sand deposits.</li> </ul>

Appendix b: SELECTED PUBLISHED PAPERS  
2007/8 and 2008/9

NAME	JOURNAL PUBLICATIONS
Dr. Mansour H. Assaf	<ul style="list-style-type: none"> <li>• Das, S.R.; Hossain, A.; Biswas, S.; Petriu, E.M.; Assaf, M.H.; Jone, W.B.; Sahinoglu, M.; "On a New Graph Theory Approach to Designing Zero-Aliasing Space Compressors for Built-In Self-Testing," <i>IEEE Transactions on Instrumentation and Measurement</i>, Vol. 57, Issue 10, October 2008, Page(s): 2146 – 2168.</li> <li>• Groza, V.; Abielmona, R.; Assaf, M.H.; Elbadri, M.; El-Kadri, M.; Khalaf, A., "A Self-Reconfigurable Platform for Built-In Self-Test Applications," <i>IEEE Transactions on Instrumentation and Measurement</i>, Vol. 56, Issue 4, August 2007, Page(s):1307 - 1315.</li> <li>• Das, S.R.; Zakizadeh, J.; Biswas, S.; Assaf, M.H.; Nayak, A.R.; Petriu, E.M.; Jone, W.B.; Sahinoglu, M., "Testing Analog and Mixed-Signal Circuits With Built-In Hardware – A New Approach," <i>IEEE Transactions on Instrumentation and Measurement</i>, Vol. 56, Issue 3, June 2007, Page(s):840 – 855.</li> </ul>
Dr. Krishna Athre	<ul style="list-style-type: none"> <li>• Rao, T.V.V.L.N. and Athre, K., "Active Control on the Stability of Flexible Rotor Supported on Journal Bearings," <i>Advances in Vibration Engineering</i>, 7(3) 2008.</li> <li>• Mishra, P.C., Pandey, R.K. and Athre, K., "Temperature Profile of an Elliptic Bore Journal Bearing," <i>Tribology International</i>, Vol. 40, 2007, pp.453-458.</li> </ul>
Dr. Denver F. Cheddie	<ul style="list-style-type: none"> <li>• D. Cheddie, N. Munroe, "Semi-analytical PEM fuel cell modelling," <i>J. Power Sources</i> 183 (2008) 164-173</li> <li>• D. Cheddie, N. Munroe, "A two-phase model of an intermediate temperature PEM fuel cell," <i>Int. J. Hydrogen Energy</i>, 32 (2007) 832-841.</li> <li>• D. Cheddie, N. Munroe, "A dynamic 1D model of a SOFC for real-time simulation," <i>J. Power Sources</i>, 171 (2007) 634-643.</li> <li>• S. Ibrir, D. Cheddie, "Model-Based Observation of PEM Fuel Cell Systems," <i>IEEE Systems Controls</i> 2009.</li> </ul>
Dr. Adel A.A. Elgammal	<ul style="list-style-type: none"> <li>• Adel M. Sharaf, Adel A.A. Elgammal "Novel Particle Swarm Optimisation PSO Self-Regulating Control Schemes for Dynamic Error Driven PMDC Motor Drives," <i>International Journal of Power and Energy Conversion</i>, Inderscience Enterprises Ltd, 2009.</li> </ul>

Appendix b: SELECTED PUBLISHED PAPERS  
2007/8 and 2008/9

NAME	JOURNAL PUBLICATIONS
Dr. Adel A.A. Elgammal	<ul style="list-style-type: none"> <li>• Adel M. Sharaf, Adel A.A. Elgammal "A Dynamic MOPSO Self-Regulating Modulated Power Filter Compensator Scheme for Electric Distribution Networks," <i>The Journal of the Association of Professional Engineers of Trinidad and Tobago</i>, ISSN 1000 7924, 2009.</li> <li>• Adel M. Sharaf, Adel A.A. Elgammal "A Novel Discrete Multi-Objective Particle Swarm Optimisation (MOPSO) Technique for Optimal Hybrid Power Filter Compensator Schemes," <i>International Journal of Power and Energy Conversion</i>, Vol. 1, Nos. 2/3, 2009, page 157-177, Inderscience Enterprises Ltd, 2009.</li> <li>• Adel M. Sharaf, Adel A.A. Elgammal "A Multi Objective Multi-Stage Particle Swarm Optimisation MOPSO Search Scheme for Power Quality and Loss Reduction on Radial Distribution System," <i>RE&amp;PQJ-7, Renewable Energy and Power Quality Journal</i>, No.7, April 2009.</li> <li>• Adel M. Sharaf, Adel A.A. Elgammal "Optimal Design of Hybrid Power Filter Compensator Using Multi-Objective Particle Swarm Optimisation (MOPSO)," <i>Al-Azhar University Engineering International Scientific Journal (JAUES)</i>, (ISSN 1110-6409).</li> <li>• Adel A.A. Elgammal, Adel A. El-Samahy, "Optimal Tuning of PID Controller on a DC Motor Drives Using Particle Swarm Optimisation PSO," <i>Al-Azhar University Engineering International Scientific Journal (JAUES)</i>, (ISSN 1110-6409).</li> </ul>
Professor Mohammed El-Sayed	<ul style="list-style-type: none"> <li>• "Neural network controller for a geothermal space heating," <i>OJEEE, Online Journal on Electronic and Electrical Engineering</i>, No. W09-0002, pp 4-8, 2009.</li> <li>• "Artificial Intelligence Technique for Controlling PV-Wind Powered Rural Zone in Egypt", <i>RE&amp;PQJ, Renewable Energy and Power Quality Journal</i>, No. 7, Ref. 257, April 2009.</li> <li>• "Dynamic Control of Fuel Cell Powered Water Pumping Station", <i>RE&amp;PQJ, Renewable Energy and Power Quality Journal</i>, No.7, Ref. 257, April 2009.</li> <li>• "Control and Optimal Sizing of PV-Wind Powered Rural Zone in Egypt", <i>JAUES, Al-Azhar University Engineering Journal</i>, Vol. 3, No. 12, pp. 146-157, Dec. 2008.</li> <li>• "Simulation Model for Predicting the Performance of PV/ Wind-Powered Geothermal Space Heating System in Egypt," <i>JAUES, Al-Azhar University Engineering Journal</i>, Vol. 3, No. 12, pp. 482-494, Dec. 2008.</li> </ul>

NAME	JOURNAL PUBLICATIONS
Professor Mohammed El-Sayed	<ul style="list-style-type: none"> <li>• "Geothermal hot water and space heating system in Egypt," <i>ASJEE, Ain Shams Journal of Electrical Engineering</i>, Vol. 2, pp 211-221, Dec. 2008.</li> </ul>
Mr. Colin Gopaul	<ul style="list-style-type: none"> <li>• C. Gopaul and R. Andrews, "The effect of atmospheric turbulence on entangled orbital angular momentum states," <i>New Journal of Physics</i>, Volume 9, 94 (2007), doi: 10.1088/1367-2630/9/4/094.</li> </ul>
Dr. Salim Ibrir	<ul style="list-style-type: none"> <li>• S. Ibrir, "Adaptive observers for time-delay nonlinear systems in triangular form," <i>Automatica</i>, Vol. 45, no. 10, pp. 2392-2399, October 2009.</li> <li>• S. Ibrir and S. Diop, "Robust state reconstruction of linear neutral-type delay systems with application to lossless transmission lines: A convex optimisation approach," <i>IMA Journal of Mathematical Control and Information</i>, Vol. 26, no. 3, pp. 281-298, doi:10.1093/imamci/dnp008, 2009.</li> <li>• S. Ibrir, "Stability and robust stabilisation of discrete-time switched systems with time-delays: LMI approach," <i>Applied Mathematics and Computation</i>, online published, doi:10.1016/j.amc.2005.05.149, published by Elsevier Inc., July 2008.</li> <li>• S. Ibrir and S. Diop, "Novel LMI conditions for observer-based stabilisation of Lipschitzian nonlinear systems and uncertain linear systems in discrete-time," <i>Applied Mathematics and Computation</i>, online published, doi:10.1016/j.amc.2008.05.150, published by Elsevier Inc. July, 2008.</li> <li>• S. Ibrir, "Static output feedback and guaranteed cost control of discrete-time nonlinear systems with partial state measurements," <i>Nonlinear Analysis: Theory, Methods and Applications</i>, Vol.68, no.7, pp.1784-1792, April 2008.</li> <li>• S. Ibrir, "Circle-criterion approach to discrete-time nonlinear observer design," <i>Automatica</i>, Vol. 43, no.8, pp. 1432-1441, August 2007.</li> <li>• S. Ibrir, W.F. Xie, and C.-Y. Su, "Adaptive tracking of nonlinear systems with non-symmetric dead-zone input," <i>Automatica</i>, Vol. 43, no. 3, pp. 522-530, March 2007.</li> <li>• S. Ibrir, "Design of static and dynamic output feedback controllers through Euler approximate models: Uncertain systems with norm-bounded uncertainties," <i>IMA Journal of Mathematical Control and Information</i>, May 2007</li> </ul>

Appendix b: SELECTED PUBLISHED PAPERS  
2007/8 and 2008/9

NAME	JOURNAL PUBLICATIONS
Dr. Salim Ibrir	<ul style="list-style-type: none"> <li>• S. Ibrir, "Regularisation and robust control of uncertain singular discrete-time linear systems," <i>IMA Journal of Mathematical Control and Information</i>, Vol. 24, pp. 71-80, 2007.</li> </ul>
Dr. Ejae John	<ul style="list-style-type: none"> <li>• Vittoria Blasucci, Cerag Dilek, Hillary Huttenhower, Ejae John, Veronica Llopis-Mestre, Pamela Pollet, Charles A. Eckert, Charles L. Liotta. "One-component, switchable ionic liquids derived from siloxylated amines." <i>Chemical Communications</i> (2009), Vol. 1, pp. 116-118</li> </ul>
Dr. Anthony Joseph	<ul style="list-style-type: none"> <li>• Joseph, A. J. (2008). "Moving Forward, Safety and Health in T&amp;T." <i>HSE Quarterly</i>, Trinidad.</li> </ul>
Dr. Solange Kelly	<ul style="list-style-type: none"> <li>• Kelly, S., G. Tsatsaronis and T. Morosuk. "Advanced Exergetic Analysis: Approaches for Splitting the Exergy Destruction into Endogenous and Exogenous Parts <i>Energy</i>," Volume 34, Issue 3, 2009, Pages 384-391.</li> <li>• Kelly, S. "Energy Systems Improvement Based on Endogenous and Exogenous Exergy Destruction." VDI Verlag GmbH, Dusseldorf 2008, ISBN 978-3-18-357206-9 <a href="http://opus.kobv.de/tuberlin/volltexte/2008/1831/pdf/kelly_solange.pdf">opus.kobv.de/tuberlin/volltexte/2008/1831/pdf/kelly_solange.pdf</a>.</li> <li>• Kamel Singh, Solange O. Kelly and Musti K.S. Sastry (2009). "Municipal Solid Waste to Energy: An Economic and Environmental Assessment for Application in Trinidad and Tobago." <i>The Journal of the Association of Professional Engineers of Trinidad and Tobago</i>. Vol. 38, No. 1, October 2009.</li> </ul>
Ms. Vidya Lall	<ul style="list-style-type: none"> <li>• Lall, V. (2007). "Bullying, Victimization and Delinquency in Primary Schools in Trinidad and Tobago: Some Preliminary Results." In <i>Caribbean Journal of Criminology and Social Psychology</i>, 12(1&amp;2), pp. 161-183.</li> </ul>
Dr. Kumar Mahabir	<ul style="list-style-type: none"> <li>• "A Hindu/Indian Male Anthropologist Works Among Multi-Ethnic Caribbean Women." <i>International Journal for Women's Studies</i>. 1(1): 12-18. March 2008. Women's Studies Centre: Rani Durgavati University, Jabakpur (M.P.), India.</li> </ul>

NAME	JOURNAL PUBLICATIONS
Dr. Kumar Mahabir	<ul style="list-style-type: none"> <li>• "V.S. Naipaul: Childhood and Memory." <i>Journal of Caribbean Literatures</i>. 5(2): 70-84. Fall 2007. La Trobe University: Bundoora, AU.</li> <li>• "The struggle against overweight and obesity: Is behavioural change an effective way to lose weight?" <i>Caribbean Medical Journal</i>. 68(2): 17-26. 2007.</li> </ul>
Mr. Rean Maharaj	<ul style="list-style-type: none"> <li>• "The screening of mushrooms found in Trinidad to determine the presence of Psilocin and Psilocybin." R. Maharaj, L. Garraway. <i>Living World Journal</i> 2007</li> <li>• Rean Maharaj, Gizelle Singh, Clive Thomas and Deborah John: "Physical and Chemical Characteristics of Cannabis Found in Trinidad and Tobago," <i>The Internet Journal of Forensic Science</i>. 2007; Volume 2, Number 2.</li> <li>• Rean Maharaj, Gizelle Singh, Clive Thomas and Deborah John: "Quantitative Analysis of Cocaine-Using Fourier Transform Infra Red Spectroscopy-Attenuated Total Reflectance: A Preliminary Investigation," <i>The Int. Journal of Third World Medicine</i>. 2009; Volume 7, Number 2.</li> <li>• Rean Maharaj: "A Comparison of the Composition and Rheology of Trinidad Lake Asphalt and Trinidad Petroleum Bitumen," <i>The International Journal of Applied Chemistry</i>. 2009; In Press.</li> </ul>
Dr. Betty McDonald	<ul style="list-style-type: none"> <li>• McDonald, B. (2009). "Exploring Academic Achievement in Males Trained in Self-Assessment Skills." <i>Education</i> 3-13, 37, 2,145.</li> <li>• McDonald, B. (2009). "Reshaping Educational Assessment: Challenges for the 21st Century." <i>Educational Research and Experiment</i>, Central China University Press.</li> <li>• McDonald, B. (2008). "Interrelationships from Scores on Self-Assessment Variables." <i>Journal of International Association for Educational Assessment (IAEA)</i>, University of Cambridge, UK.</li> <li>• McDonald, B. (2008). "Profiling Career Choice: The Case of Business Management Technicians from State-run Technical Institutes in the Republic of Trinidad and Tobago, West Indies." <i>The Canadian Journal of Career Development</i>, 7, 2 on-line 14 p. &lt;<a href="http://voc.ed.psu.edu/projects/publications/books/Fall2003/McDonald.pdf">http://voc.ed.psu.edu/projects/publications/books/Fall2003/McDonald.pdf</a>&gt;.</li> <li>• McDonald, B. (2008). "Self-Assessment in Action Book," Common Ground Publishers: Australia Record Id: 000042364462, ISBN: 9781863356145 (pdf), Dewey Classification Number: 371.144, National Library of Australia. National Library of Australia (ANL) 4241892.</li> </ul>

Appendix b: SELECTED PUBLISHED PAPERS  
2007/8 and 2008/9

NAME	JOURNAL PUBLICATIONS
Dr. Betty McDonald	<ul style="list-style-type: none"> <li>• McDonald, B. (2008). "Enhancing Learning Through Self-Assessment." <i>Thinking Classroom/ Peremena</i>, 9, 3, University Victoria, Canada. &lt;<a href="http://ct-net.net/tc_ann_9 - 3_Mcd">http://ct-net.net/tc_ann_9 - 3_Mcd</a>&gt;.</li> <li>• McDonald, B. (2007). "Self-Assessment for Understanding." <i>Journal of Education</i>, Boston University School of Education, USA, 188, 1, 25 - 44.</li> <li>• McDonald, B. (2007). "Assessment for Learning in Project-Based Learning." <i>The International Journal of Learning</i>, 2007, 14, 1 - 11. &lt;<a href="http://www.learning-journal.com">http://www.learning-journal.com</a>&gt;.</li> <li>• McDonald, B. (2007). "Predicting Mathematical Aptitude for Higher Education." <i>International Journal of Mathematical Education in Science and Technology</i>, Taylor and Francis Production, UK: TMES 268680 (production tracking number), November 02, 2007. DOI: 10.1080/00207390701688141. 293 - 299. &lt;<a href="http://cats.tfinforma.com/PTS/in">http://cats.tfinforma.com/PTS/in</a>&gt;. Published iFirst site &lt;<a href="http://www.informaworld.com/ijmest">www.informaworld.com/ijmest</a>&gt;. Access to iOpenAccess.</li> <li>• McDonald, B. (2007). "Career Aspirations and Academic Achievement." Education Resources Information Centre (ERIC); bibliographic database of over 1.1 million citations on Education topics ED494586, February, 2007. &lt;<a href="http://www.eric.ed.gov">http://www.eric.ed.gov</a>&gt;, online 21 pgs.</li> <li>• McDonald, B. (2009). "Inclusion through Service Learning." Enabling Education Network (EENET), University of Manchester, UK, &lt;<a href="http://www.eenet.org">http://www.eenet.org</a>&gt;.</li> </ul>
Dr. Adel Ben Mnaouer	<ul style="list-style-type: none"> <li>• Adel Ben Mnaouer, Lei Chen, Chuan Heng Foh, Juki Wirawan Tantra: "An Optimised Polymorphic Hybrid Multicast Routing (OPHMR) Protocol for MANET," <i>IEEE Transactions on Mobile Computing</i>, Vol. 5, No. 6, May 2007.</li> </ul>
Dr. Reza Mohammed	<ul style="list-style-type: none"> <li>• Sprenger S., Eger C., Kinloch A., Taylor A., Mohammed R., "Rubber-toughened CFRCs for high performance applications optimised by nanoparticles – Part III," <i>JEC Composites Magazine</i>, 30, 54 (2007).</li> <li>• Sprenger S., Kinloch A., Taylor A., Mohammed R., "Rubber-toughened FRCs optimised by nanoparticles – Part IV," <i>JEC Composites Magazine</i>, 38, 34, (2008).</li> <li>• Johnsen, B.B., Kinloch A.J., Mohammed R.D., Taylor A.C., Sprenger S., "Toughening mechanisms of nanoparticle-modified epoxy," <i>Polymer</i>, 48, 530, (2007).</li> </ul>

NAME	JOURNAL PUBLICATIONS
Dr. Reza Mohammed	<ul style="list-style-type: none"> <li>• Kinloch A.J., Mohammed R.D., Taylor A.C., Eger C., Sprenger S., Egan D., "The Bulk and Interlaminar Composite Toughness of 'Hybrid-Toughened' Temperature-Resistant Epoxy Polymers," <i>Journal of Materials Science</i>, In-Press, (2008).</li> </ul>
Professor Prakash Persad	<ul style="list-style-type: none"> <li>• P. Persad, J. Bisnath and N. Ramkissoon, "Developing a Tabla Playing Robot," <i>Journal of ITC</i>, Sangeet Research Academy, Vol. 22 pp 13 – 22, December 2008.</li> </ul>
Dr. Ulrich Rauch	<ul style="list-style-type: none"> <li>• Ulrich Rauch, Marvin Chodas and Tim Wang, "The Arts 3D VLE Metaverse as a Network of Imagination." <i>Innovate Journal of Online Education</i>, Volume 5, Issue 6, August/September 2009, <a href="http://innovateonline.info/index.php?view=article&amp;id=580">http://innovateonline.info/index.php?view=article&amp;id=580</a></li> </ul>
Dr. Suzana Russell	<ul style="list-style-type: none"> <li>• Allwood, J.M., Laursen, S.E., Russell, S.N., de Rodríguez, C.M. and Bocken, N.M.P (2008). "An approach to scenario analysis of the sustainability of an industrial sector applied to clothing and textiles in the UK," <i>Journal of Cleaner Production</i>, 16: 1234-1246</li> <li>• Russell, S.N. and Allwood, J.M., (2008). "Environmental evaluation of localising production as a strategy for sustainable development: a case study of two consumer goods in Jamaica," <i>Journal of Cleaner Production</i>, 16: 1327-1338.</li> </ul>
Dr. Ziad Sakr	<ul style="list-style-type: none"> <li>• Z. Sakr and N.D. Georganas, "Robust Content-Based MPEG-4 XMT Scene Structure Authentication and Multimedia Content Location," <i>ACM Transactions on Multimedia Computing, Communications, and Applications</i>, August 2007.</li> </ul>
Dr. Kalim Shah	<ul style="list-style-type: none"> <li>• Dulal, H., Shah, K., Ahmad, N. (2009) "Social Equity Considerations in the Implementation of Caribbean Climate Change Adaptation Policies." <i>Sustainability</i> 2009, 1(3), 363-383.</li> <li>• Shah, Kalim and Rivera, J. (Oct. 2007) "Export Processing Zones and Corporate Environmental Performance – The case of the oil, gas and chemical sector of Trinidad and Tobago." <i>Policy Sciences</i> 40:265-285</li> </ul>

Appendix b: SELECTED PUBLISHED PAPERS  
2007/8 and 2008/9

NAME	JOURNAL PUBLICATIONS
Professor Adel Sharaf	<ul style="list-style-type: none"> <li>• I.H. Altas and A.M. Sharaf, "Novel Maximum Power Fuzzy Logic Controller for Photovoltaic Solar Energy Systems," <i>Renewable Energy</i> (2007), doi 101016/j.renene 2007 03 02.</li> <li>• I.H. Altas and A.M. Sharaf, "A Generalised Direct Approach for Designing Fuzzy Logic Controllers in Matlab/Simulink GUI Environment," <i>International Journal of Information Technology and Intelligent Computing</i>, No. 4, Vol. 1, 2007.</li> <li>• M.S. El-Moursi, A.M. Sharaf, Khalil El-Arroundi, "Optimal Control Schemes for SSSC for Dynamic Series Compensation," <i>Electric Power System Research</i>, 2007.</li> <li>• Syed Muhammad, Atif Saleem and Adel M. Sharaf, "A Novel Wavelet Transform-Based Fault Detection Scheme for Series Compensated Transmission Lines," <i>Int'l Journal of Power and Energy</i>, UK, June 2008.</li> <li>• Amir H. Norouzi and A.M. Sharaf, "Two Control Schemes to Enhance the Dynamic Performance of the STATCOM and SSSC," <i>IEEE Transactions on Power Delivery</i>, Volume 20, Number 1, ISSN 0885-8977, pp. 435-442.</li> </ul>
Professor Michael Smith	<ul style="list-style-type: none"> <li>• Li, W., Jun, W., and Smith, M., "Performance and Capacity Analysis of UWB Networks over 60GHz WPAN Channel," <i>Journal of Communications</i>, Vol. 3, No. 1, January 2008.</li> </ul>
Dr. Prahalad Sooknanan	<ul style="list-style-type: none"> <li>• Sooknanan, P., Logan, P. (2008), "The Portrayal of Women in Advertising: The Cross-Cultural Influence of Idealised Images in the Print Media of African-Trinidadian Women."</li> <li>• Sooknanan, P., Smith, W. (2007), "Cross-Cultural Adaptation of Botswana Students as an Indicator of Academic Success in Dental School." <i>Intercultural Communication Studies</i>, 16(2), 114-125.</li> </ul>
Dr. James Speight	<ul style="list-style-type: none"> <li>• Mazen M. Abu Khader and James G. Speight, "Influence of High Asphaltene Feedstocks on Processing", <i>Rev. de l'Institut Français du Pétrole</i>, 2007, 62, 715.</li> </ul>



*His Excellency Professor George Maxwell Richards, President of the Republic of Trinidad and Tobago, pins the Hummingbird Medal (Gold) – Culture on Mr. Len "Boogsie" Sharpe, in recognition of his loyal and devoted service to Trinidad and Tobago.*

## 13.0 ADVISORY COUNCILS As at September 30 2009

The Terms of Reference of the Advisory Councils are as follows:

- i) To advise UTT on aspects related to the development of its various programme offerings;
- ii) To formulate and submit proposals/ recommendations for the enhancement and/or revision of its programme offerings;
- iii) To assist UTT in enhancing its links with Industry, the Community and the Private Sector;
- iv) To identify areas and topics for research and development; and
- v) To provide advice on such other matters referred to the Council by the President or the Board of Governors of UTT.

The Membership of the Council is comprised of Industry and practising professionals and non-UTT academics. Each Council is expected to focus on a specific field of study at UTT. The ongoing and proposed areas of study are as follows:

- Energy, Process and Utilities Engineering
- Arts, Letters, Culture and Public Affairs
- Manufacturing (with a focus on Innovation and Entrepreneurship)
- Maritime
- The Performing Arts
- Fashion and Design
- Information and Communications Technology (ICT)
- Education
- Construction
- Sports and Leisure
- Biosciences, Agriculture and Food Technologies

All proposals/recommendations of the Councils are referred to the Board of Governors for consideration. Each Advisory Council is chaired by a Member of the Board of Governors, thus providing direct access to the Board.

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Mr. Oxley Paul  
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Dr. Trevor Townsend  
Mr. Kelvin Mahabir  
Mr. Greig Laughlin  
Mr. Robert Tang Yuk  
*Programme Professor:*  
*Professor Denise Thompson*

\*note Chairperson TBD

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Mr. Christian Holder  
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Mr. Wendell Manwarren  
Ms. Simone Phillips  
Mr. Dave Williams  
Mr. Christopher Laird  
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Mr. Ralph Maraj  
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*Professor Emeka Nwabueze*

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*Dr. Colin Stevenson*

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Ms. Heather Jones  
Ms. Coline Mills  
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Mr. Vincent Pereira  
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Dr. Kermitt Walrond  
Dr. Mukul Sharma  
Mr. Frank Look Kin  
Mr. Derek Hudson  
Mr. Anthony Greene  
Mr. Rampersad Motilal  
Mr. Errol Grimes  
Mr. Garth Cahtoor  
Dr. Chandrabhan Sharma  
Mr. Prem Nandlal  
Mr. Indarjit Singh  
Mr. Todd Peterson  
*Programme Professor:*  
*Professor David McGaw*

## 14.0 PROFILES OF SENIOR ACADEMIC AND MANAGEMENT STAFF As At September 2009

### Academic Staff – Professors

**David McGaw (Provost)**

Ph.D. Chemical Engineering;  
M.Sc. Chemical Engineering;  
B.Sc. Chemical Engineering

**Adel Sharaf (Vice Provost)**

Ph.D. Electrical Engineering;  
M.Sc. Electrical Engineering;  
B.Sc. Electrical Engineering

**Prakash Persad (Associate Provost)**

Ph.D. Mechanical Engineering;  
B.Sc. Electrical Engineering

**Krishna Athre**

Ph.D. Lubrication & Bearing Dynamics;  
M.Sc. Mechanical Engineering;  
B.E. Mechanical Engineering

**Reza Azarmsa**

Ed.D. Curriculum &  
Instruction/Instructional Technology;  
M.Sc. Health Education;  
B.Sc. Social Sciences

**Patricia Bishop, T.C.**

Ph.D. (honoris causa);  
M.A. History/Social Sciences

**Ramesh Deosaran**

Ph.D. Applied Social Psychology & Sociology;  
M.A. Applied Social Psychology & Politics;  
B.Sc. Social Psychology/ Sociology

**Mohamed El-Sayed**

Ph.D. Electrical Engineering;  
M.Sc. Electrical Engineering

**Michael Gray**

Ph.D. Education;  
M.Sc. Education; B.Sc. Education

**Anthony Joseph**

Ph.D. Civil Engineering;  
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M.Sc. Environmental Pollution Control;  
B.Sc. Mathematics & Physics

**Jamal Khan**

Ph.D. Plant Pathology;  
M.Sc. Botany/Plant Pathology;  
B.Sc. (Hons.) Botany with Plant Pathology

**Theodore Lewis**

Ph.D. Education;  
M.Sc. Industrial Education;  
B.Sc. Industrial Education

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Ph.D. History & Ethnomusicology;  
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M.A. History;  
B.A. History/Sociology

**Zena Moore**

Ph.D. Foreign Language Education;  
B.A. General Studies

**Jeanette Morris**

Ph.D. Education;  
M.A. Education;  
M.Sc. Linguistics;  
M.A. Spanish & French

**Emeka Nwabueze**

Ph.D. Theatre Studies

**Paschal Osuji**

Ph.D. Animal Nutrition;  
M.Sc. Animal Nutrition;  
B.Sc. Animal Science

**Chadee Persad**

Ph.D. Materials Science and Engineering;  
M.Sc. Mechanical Engineering;  
B.Sc. Mechanical Engineering

**Ulrich Rauch**

Ph.D. Sociology;  
M.A. Literature, Sociology and Philosophy

**Compton Seaforth**

Ph.D. Organic Chemistry;  
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**Peter Seivewright**

M.A. Music

**Michael Smith**

Ph.D. Electrical & Computer Engineering;  
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B.Sc. Electrical Engineering

**Colin Stevenson**

Ph.D. Maritime Studies;  
B.Sc. Maritime Business & Maritime Law

**Valerie Stoute**

Ph.D. Physical/Organic Chemistry;  
M.S. Statistics and Operations Research;  
B.Sc. Chemistry and Mathematics

**Manindra Thakur**

Ph.D. Metallurgical Engineering;  
M.Sc. Metallurgical Engineering;  
B.Sc. Metallurgical Engineering

**Denise Thompson**

Ph.D. Industrial and Management  
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M.Sc. Industrial Engineering;  
B.Sc. Industrial Engineering

**Ergun Yurdadon**

Ph.D. Kinesiology;  
M.Sc. Sport Management

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Ph.D. Information Technology & Engineering;  
M.Sc. Electrical Engineering;  
B.Sc. Telecommunications Engineering

**Andre Cooper**

Ph.D. Linguistics; M.Phil. Linguistics;  
B.A. German & Linguistics

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Ph.D. Sociology;  
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B.Sc. Sociology

**Anthony Gomes**

M.A. Theatre Arts;  
B.F.A. Production Management

**John Griffin**

Ph.D. Petroleum Engineering;  
B.Sc. Geology

**Salim Ibrir**

Ph.D. Electrical Engineering;  
M.Sc. Electrical Engineering;  
B.Sc. Avionics

**Rodney Jagai**

M.Sc. Petroleum Engineering Technology;  
B.Sc. Chemical Engineering

**Tennyson Jagai**

Ph.D. Petroleum Engineering  
M.Phil. Petroleum Engineering;  
B.Sc. Mathematics & Physics

**Jerome Joseph**

Ph.D. Biochemistry;  
M.Sc. Biology;  
B.Sc. Biology

**Marlon Knights**

Ph.D. Physiology;  
M.Sc. Tropical Animal Science & Production

**Rohanie Maharaj**

Ph.D. Food Science / Postharvest Physiology;  
M.Phil. Food Technology;  
B.Sc. General Studies

**Betty McDonald**

Ph.D. Psychometrics & Statistics; M.Phil.  
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Pg.Dip. Education;  
B.Sc. Mathematics/Physics

**Vertrelle Mickens**

Ph.D. Music;  
M.M.; B.M.

**Adel Ben Mnaouer**

Ph.D. Computer Engineering;  
M.Eng. Electrical Engineering;  
B.Sc. Informatics & Computer Science

**Mysore Padmini**

Ph.D. Computer Science;  
M.Sc. Computer Science;  
M.Sc. Physics, Chemistry & Mathematics

**Rodney Rambally**

Ph.D. Mathematics & Computer Science;  
M.Sc. Mathematics;  
B.Sc. Mathematics

## 14.0 PROFILES OF SENIOR ACADEMIC AND MANAGEMENT STAFF As At September 2009

### Academic Staff – Associate Professors

**Judy Rocke**

Ph.D. Geography;  
M.Sc. Geography;  
B.Sc. Geography & Geology

**Ziad Sakr**

Ph.D. Electrical Engineering;  
M.Sc. Electrical Engineering;  
B.Sc. Computer Engineering Technology

**Emmanuel Senah**

Ph.D. History;  
M.A. Philosophy of Education;  
B.A. Philosophy/Arts

**Prahalad Sooknanan**

Ph.D. Communication Studies;  
M.A. Mass Communications;  
Pg.Dip. Education Technology

**Nicole Wesley**

M.A. Dance & Related Arts;  
B.A. Dance

### Academic Staff – Assistant Professors

**Bibi Ali**

Ph.D. Plant Science;  
M.Sc. Crop Protection;  
B.Sc. Agronomy

**Carol Andrews-Redhead**

Ph.D. English;  
M.A. English;  
B.A. Literatures in English

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Ph.D. Chemical Engineering;  
M.Sc. Chemical Engineering;  
B.Sc. Chemical Engineering

**Derrick Balladin**

Ph.D. Chemistry;  
B.Sc. General Science

**Belinda Barnes-Durity**

M.A. Dramatic Arts;  
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**Puran Bridgemohan**

Ph.D. Crop Science;  
MBA Business Administration;  
B.Sc. Agriculture

**Laurette Bristol**

Ph.D. Pedagogy;  
M.Ed. Educational Studies

**Elna Carrington-Blaides**

Ph.D. Special Education;  
M.Ed. Special Education;  
B.Sc. Social Sciences

**Denver Cheddie**

Ph.D. Mechanical Engineering;  
B.Sc. Mechanical Engineering

**Amarnath Chinchamee**

B.Sc. Surveying & Land Information

**Francis Davis**

Ph.D. Philosophy;  
B.Sc. Agricultural Science

**Lionel Douglas**

Ph.D. Instructional Technology;  
MBA Educational Technology

**Adel Elgammal**

Ph.D. Electrical Power & Machine Engineering;  
M.Sc. Electrical Power & Machine Engineering;  
B.Sc. Electrical Power & Machine Engineering

**Talia Esnard-Flavius**

Ph.D. Sociology; B.Sc. Sociology

**George Gowrie**

Ph.D. Educational Administration;  
M.A. Educational Leadership;  
B.A. Social Sciences

**Reia Guppy**

Ph.D. Biology & Psychology;  
B.Sc. Marine Biology

**Nishawn Hanif**

Ph.D. Chemical Engineering;  
B.Sc. Chemical Engineering

**Shaheeda Hosein**

Ph.D. History;  
B.A. History & English Literature

**Sharaaz Hosein**

Ph.D. Applied Energy;  
M.Sc. Energy Conservation & the Environment;  
B.Sc. Industrial Engineering

**Marc Jackman**

Ph. D. Psychological Studies in Education,  
M.A. Educational & Developmental Psychology

**Jelliffe Jackson**

Ph.D. Mechanical & Aerospace Engineering;  
M.Sc. Aerospace Engineering;  
B.Sc. Mechanical Engineering

**Yvonne John**

Ph.D. Education; M.Sc. Special Education;  
B.Sc. Computer Science & Economics

**Lydia Jones**

Ed.D. Organisational Leadership;  
M.Sc. Varying Exceptionalities of Learning  
& Behaviour and Education Leadership;  
B.Sc. Elementary Education

**Barbara Joseph**

Ph.D. Languages;  
M.A. Literatures in English;  
B.A. Literatures in English

**Rowena Kalloo**

M.Ed Teacher Education;  
B.Sc. Biochemistry & Zoology

**Solange Kelly**

Ph.D. Energy Engineering;  
M.Phil. Mechanical Engineering;  
B.Sc. Mechanical Engineering

**Kumar Mahabir**

Ph.D. Anthropology;  
M.Phil. English;  
B.A. English

**Ruby Mallik**

Ph.D. Music;  
M.Phil. Music - Hindustani Classical;  
B.A. English Literature

**Hayward Mickens**

M.M.; B.M.

**Musa Mohamed**

Ph.D. Biological Sciences;  
M.Sc. Biological Sciences;  
B.Sc. Agriculture

**Nazim Mohamed**

Ph.D. Bioorganic Chemistry;  
B.Sc. Applied Chemistry

**Aphzal Mohammed**

Ph.D. Livestock Science;  
M.Ed. Curriculum Development;  
B.Sc. Agriculture

**Vishnarayan Mooleedhar**

Ph.D. Plant Sciences; M.Phil Crop Science;  
B.Sc. (Hons.) Agriculture

**Paul Nash**

B.Sc. Mechanical & Marine Engineering

**Umesh Persad**

Ph.D. Engineering Design;  
B.Sc. Mechanical Engineering

**Patrice Piggot**

Ph.D. Chemistry;  
B.Sc. Chemistry

**Varma Rambaran**

Ph.D. Chemistry;  
B.Sc. Chemistry

**Rohit Ramgoolam**

Ph.D. Physics;  
B.Sc. Physics & Analytical Chemistry

**Natasha Ramroop Singh**

B.Sc. Chemistry & Biochemistry

**Pallant Ramsundar**

M.Sc. Production Engineering & Management

## 14.0 PROFILES OF SENIOR ACADEMIC AND MANAGEMENT STAFF As At September 2009

### **Myrna Ransome**

Ph.D. Educational Research & Evaluation;  
M.Ed. Special & Inclusive Education

### **Martin Rhodes**

B.Sc. Maritime Studies

### **Suzana Russell**

Ph.D. Manufacturing & Management;  
M.Sc. Management Information Systems;  
B.Sc. Industrial Engineering

### **Nadine Sangster**

Ph.D. Mechanical Engineering;  
B.Sc. Mechanical Engineering

### **Kalim Shah**

Ph.D. Public Policy and Environmental Science;  
M.Sc. Environmental and Natural Resources  
Management;  
B.Sc. Natural Sciences

### **Lynette Simmons**

Ph.D. Education; M.Ed Education;  
B.A. General Studies

### **Arvind Singh**

B.Sc. Electrical & Computer Engineering

### **Vashti Singh**

Ph.D. Sociology of Education;  
M.A. Sociology of Education;  
B.A. English Literature

### **Norris Sookoo**

Ph.D. Mathematics;  
B.Sc. Mathematics

### **Balmattee Sukha**

B.Sc. Industrial Management

### **Clint Sutherland**

Ph.D. Civil Engineering;  
B.Sc. Civil Engineering

### **Marian Watson**

Ph.D. Chemical Engineering;  
B.Sc. Chemical & Process Engineering

### **Daniel White**

Ph.D. Physics; B.Sc. Physics

### **Rachael Williams**

Ph.D. Environmental Engineering & Science;  
M.A. Statistics; M.Sc. Biometrics;  
B.Sc. Natural Sciences

### **Reinford Williamson**

Ph.D. Biomedical / Chemical Engineering;  
M.Phil. Engineering & Applied Science;  
M.Eng. Chemical Engineering;  
B.A. Chemical Engineering

### **Hugh Wilson**

M.Ed. Education; M.Sc. Agriculture;  
B.Sc. Agriculture

### **Shellyanne Wilson**

Ph.D. Manufacturing Strategy

### **Yufei Wu**

Ph.D. Computer Engineering Technology;  
MBA Information Systems;  
M.Sc. Geo Computing

#### Academic Staff – Senior Research Associates

### **Arthur Potts**

Ph.D. Fisheries & Allied Aquaculture;  
M.Sc. Fisheries & Allied Aquaculture;  
B.Sc. Marine Sciences & Biology

#### Academic Staff – Research Associates

### **Paulette Alfred**

B.A. Visual Arts

### **Azeena Ali**

B.Sc. Analytical Chemistry

### **Catherine Ali**

M.Ed. Education

### **Neal Alleyne**

MBA Business Management;  
B.Sc. Petroleum Engineering Technology

**Edwin Vicente Bolastig**  
Doctor of Medicine;  
M.Sc. Health Policy, Planning and Financing

**Wayne Butcher**  
M.Sc. Computing Science;  
B.Sc. Electrical Engineering

**Sharri Byron**  
M.Sc. Economics;  
B.Sc. Mathematics & Economics

**Patrice Cox-Neaves**  
B.A. Musical Arts

Martin Jones  
B.A. English & History

**Saeed Mohamed**  
B.Sc. Civil Engineering;  
M.Sc. Construction Engineering  
& Management

**Judith Morraine-Webb**  
M.Ed. Education;  
MBA Business Administration;  
B.Sc. Management Studies

**Jennifer Paul**  
Ph.D. Chemistry;  
B.Sc. General Studies

**Bernard Pierre**  
M.Sc. Civil Engineering;  
MBA Management/Operations Management;  
B.Sc. Chemistry

**Doodnath Ramsundar**  
M.Sc. Petroleum Engineering;  
B.Sc. Petroleum Engineering

**Pearl Rivers**  
Ph.D. Teacher Education;  
M.A. Management Studies;  
Pg.Dip. Technology Education

**Carlton Sambury**  
M.Sc. Forestry;  
B.Sc. Forestry

**Steve Seetahal**  
M.A. Energy & Mineral Resources;  
B.Sc. Mathematics  
B.A. Economics

#### Academic Staff – Senior Academic Support

**Stephen Sheppard**  
(Assistant Vice President, Student Affairs)  
M.Sc. Customer Service Management  
EMBA

**Kenneth Butcher**  
(Senior Manager, Academy of  
Sports & Leisure Studies)  
B.Sc. Behavioural Sciences

**Commodore Anthony Franklin**  
(Administrator Marine & Maritime Programmes)  
M.A. Marine Affairs Management;  
B.Sc. Maritime Geography

**Dr. Samuel Howard**  
(Senior Manager, Administration)  
Ph.D. Biology & Reproductive Physiology;  
M.Sc. Genetics & Reproductive Physiology;  
B.Sc. Animal Science/Animal Production

**Karen Pierre**  
(Programme Manager)  
M.Sc. Health Service Management;  
MBA;  
Pg.Dip. Health Education;  
B.Sc. Nutrition & Dietetics

**Martha Preddie**  
(Chief University Librarian)  
M.Sc. Library Science;  
MBA;  
B.A. Sociology and Management

**Anselm Walters**  
(Senior Manager, Food Processing Technology)  
M.Sc. Food Technology;  
B.Sc. Agricultural Science

## 14.0 PROFILES OF SENIOR ACADEMIC AND MANAGEMENT STAFF As At September 2009

### Corporate Staff – Executive Management

**Kenneth S. Julien T.C., CMT**  
(Chairman and President)  
Ph.D. Electrical Energy Systems;  
B.Sc. (Hons.) Electrical Engineering  
FIEEE (USA); FIEE (UK); C.Eng. (UK); APETT

**René Monteil**  
(Executive Director)  
Ph.D. Chemistry;  
M.A. Law

**Oliver Flax**  
(Senior Vice President – Student Affairs & Human Services)  
Pg.Dip. HR Management;  
EMBA

**Ruby S. Alleyne**  
(Vice President – Quality Assurance & Institutional Advancement)  
Ph.D. Education

**Dave Bhajan**  
(Vice President – Capital Projects & Institutional Planning)  
M.Sc. Production Engineering and Management

**Darren Brathwaite**  
(Vice President – Architectural Planning & Design)  
SMArchS Architecture & Urban Design

**Judy Lake**  
(Vice President – Information Technology Services)  
B.Sc. Information and Communication Technologies Corporate

**Lennard Prescod**  
(Vice President – Finance & Procurement)  
M.Sc. Accounting & Finance;  
MBA Financial Services  
FCCA, FCIB, FCMI

### Corporate Staff – Core University

**Mungal Patasar**  
(Senior Advisor)  
Ph.D. (honoris causa)  
M.A. Sitar Music;  
B.A. Sitar Music

**Ramnarine Ramnasibsingh**  
(Senior Advisor)  
Pg.Dip. Management Studies;  
B.Sc. Social Sciences

**Jennifer Sampson**  
(Senior Advisor)  
M.A. Sociology;  
B.A. (Hons.) English & Sociology

**Zameer Mohammed**  
(Assistant Vice President, Professional Education)  
M.Ed. Educational Measurement;  
MBA Industrial Policy & Corporate Strategy;  
B.Sc. Geology/Chemistry

**Nigel Campbell**  
(Senior Manager, Project Finance Services)  
B.Sc. Industrial Management;  
FCCA; CPA; CAPM

**Vishnu Chackan**  
(Senior Manager, Facilities Maintenance)  
B.Sc. Applied Mechanical Engineering

**Cedric Connor**  
(Senior Manager, Planning & Development)  
M.Sc. Development & Project Planning;  
B.Sc. Management Studies

**David DeSouza**  
(Senior Manager, Information Technology Services)  
B.Sc. Accounting  
M.Sc. Systems Analysis and Design

**Sandra Ganness**  
(Senior Manager, Corporate Communications)  
MBA Information Technology;  
B.Sc. (Hons.) Statistics & Zoology

**Samuel Jones Jr.**  
(Senior Manager, Security Services)  
B.Sc. Criminology

**Glen Lezama**  
(Senior Manager, Systems & Processes)  
Pg.Dip. Management

**Feona Lue Ping Wa**  
(Financial Controller)  
FCCA

**Brent Lyons**  
(Senior Manager, Human Resources & Administration)  
B.A. Business Administration

**Asha Ramkeesoon**  
(Senior Manager, Procurement Services)  
M.Sc. Food Technology;  
MBA Negotiation & Change Management;  
B.Sc. Physics & Analytical Chemistry

**Debbie Sirjusingh**  
(Senior Manager, Corporate Services & Corporate Secretary)  
LLB, LEC

**Dr. Alison Williams**  
(Senior Engineer)  
Ph.D. Transportation;  
M.Sc. Civil Engineering; B.Sc. Civil Engineering

**Dayle Connelly**  
(Manager, Legal & Assistant Corporate Secretary)  
LLM, LLB, LEC

### Corporate Staff – Subsidiaries

**Neil Chapman**  
(General Manager, URECO)  
M.A. Business Administration;  
B.Eng. Manufacturing Engineering & Management

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**Point Lisas Campus**  
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Couva, Trinidad  
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Fax: (868) 636-3339

**Pasea Office**  
Cor. Pasea Main Rd & Churchill Roosevelt Hwy  
Tunapuna, Trinidad  
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663-9562, Fax: (868) 663-0152

**Valsayn Campus**  
Old Southern Main Rd, Graver Rd  
Valsayn, Trinidad  
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**John S. Donaldson Campus**  
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**San Fernando Campus**  
Tarouba Link Rd West, Tarouba, Trinidad  
Tel: (868) 653-4451, Fax: (868) 657-0069

**Corinth Campus**  
Corinth Rd, Via San Fernando, Trinidad  
Telefax: (868) 652-4445

**Chaguaramas Campus**  
2nd Avenue North, Western Main Rd  
Chaguaramas, Trinidad  
Tel: (868) 634-8888, Fax: (868) 634-3003

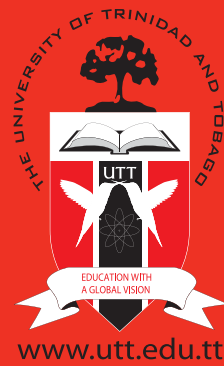
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**CLOCKWISE FROM TOP:** A Royal Meeting – Reigning Calypso Monarch 2009 and recipient of the Prince Claus Award\* in 2007, UTT's Professor Hollis "Chalkdust" Liverpool, chats with Queen Beatrix, Her Majesty Queen of the Netherlands, Princess of Orange-Nassau; 2007 Valedictorian Ms. Rosalie Patricia Edwards (M.Sc. Petroleum Technology) delivers her speech at the Ceremony for the Presentation of Graduates; Sitar virtuoso and Distinguished Master Artist in Residence at UTT, Mungal Patasar; and Professor Prakash Persad (Associate Provost, Undergraduate Studies and Programme Professor Design and Manufacturing) displays his award for the Robotic Tabla Player, at the Prime Minister's Awards for Innovation and Invention Prizegiving Ceremony 2008.

\* The Prince Claus Fund for Culture and Development works jointly with individuals and organisations primarily based in Africa, Asia, Latin America and the Caribbean on the realisation of activities and publications contributing to a positive interaction between culture and development.



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