



SAIAE News Bulletin

South African Institute of Agricultural Engineers

June 2008



EDITOR'S NOTE

Daniel Ciolkosz reminds us that our engineering education starts only when we have graduated and that continuous learning has always been a part of the engineering profession as the field of engineering is continually expanding and changing. Read about the formal requirement from ECSA to prove that you have been developing our professional standing.

Under 'Report on Council Activities' Prof Smithers explains the student support portfolio. The vision for student support by SAIAE is presented in a table format and other ongoing SAIAE support for students are also mentioned.

Read about FASTTRACK, a spatial sugercane transport infrastructure-planning model. Alasdair Harris and Louis Lagrange explain that at an estimated 25% transport cost consequently constitutes the second largest expense for a sugar cane producer with the greatest cost attributed to farm staff.

The Legend Golf and Safari Resort is situated in the scenic Waterberg mountains in the Limpopo Province. FP tells us about this intriguing project.

In UKZN Snippets, Prof Jeff Smithers says that in February 2008, a total of 24 new first year Agricultural Engineering students registered at UKZN. He also explains more about the research and the staffing.

CPD News show that it is not so difficult to comply with the Continuing Professional Development and explains the renewal of registration.

The SAIAE-KZN branch is a rather active branch and read about their activities according to their meetings.

The Multi-day CPD Event 2008 will be held during September 2008. Read more about the main theme and the activities organised for this forthcoming event.

See the most interesting extracts from the speech by Prof. Jeff Smithers at Professor Schulzes' retirement function. Read about the doings and activities of this remarkable man.

Last but not the least is news from CIGR.

Enjoy!

Editor : DvdM

COUNCIL NEWS

**Daniel Ciolkosz
Outgoing CPD Portfolio Chair
SAIAE**

Continuing Professional Development at SAIAE

Many university engineering students have the idea that, when they complete their degree and leave the university, their training will be complete. Perhaps you felt that would be the case when you graduated. However, I am sure you have come to realise that our engineering education had only begun at that point. While this may be a daunting thought for students, it is actually one of the joys of being an engineer. The field of engineering is continually expanding and changing, and there are always exciting new things to learn.

Continuous learning has always been a part of the engineering profession, as we all have a responsibility to remain current within our field. However, there is now a formal requirement (from ECSA) to prove that you have been developing our professional standing – otherwise, your professional registration will not be renewed. This requirement is referred to as the "Continuing Professional Development", or CPD requirement, and can take many forms, including symposia, workshops, research presentations, and even self study.

Because of our commitment to CPD and helping our members with these new requirements from ECSA, the SAILI/SAIAE has been quite active to ensure that you are well equipped in terms of professional training, and are in a good position to satisfy these new requirements from ECSA. Briefly, the efforts that we have undertaken are as follows:

1. Provision of Critical Information:

I'm sure you have read the recent articles in the institute newsletter that describe the process that you must follow to obtain credit for all CPD activities. These articles are also available on the institute website, for those of you who have mislaid your copy of the newsletter. Other valuable information, including announcements of upcoming events, is sent to you regularly by email and in the newsletter.

2. Accreditation of Events:

The institute's council reviews and approved CPD events for accreditation are worthy engineering CPD events. If you are presenting or attending an educational event that you would like to have accredited for CPD, be sure to send in an application (available from the institute website or from the council secretary). However, PLEASE send your application well in advance of the event, because it takes some time to review an application.

3. Sponsorship of Events:

In addition to reviewing events held by others, the institute regularly organises CPD events on various topics of interest to agricultural engineers. In the last two years, we have organised workshops and symposia on a variety of topics such as Irrigation, Bio-Fuels, Water Management, Mechanisation Optimisation, Radio Frequency Identification, and Food Processing. Is there a topic you are especially keen to have presented? Let us know! Are you interested in presenting a topic at a SAILI event? We'd be happy to hear from you!

This year, the KZN Branch of the institute will be hosting a multi-day CPD event with exciting sessions on a variety of important topics (see the relevant article in this newsletter). If you can, be sure to sign up, as this will be an excellent opportunity to improve your skills and renew your friendships with engineers from throughout South Africa.

Coordination of the CPD programme has recently been handed over to Mr. Kevin Hundley of Ninham Shand Consulting. Questions regarding CPD events and accreditation can be sent to Kevin, as I am sure he will be happy to assist you.

Report on Council Activities

Student Support Portfolio

Professor JC Smithers

In June 2005 the Council of the SAIAE adopted the vision contained in Table 1 for Student Support by the SAIAE.

Table 1 Vision of student support by SAIAE

- 1. Importance of support for students**
 - (a) Students afford SAIAE opportunities for growth in the future
- 2. Professional home for students**
 - (a) SAIAE gives students a professional identity with which they can identify
 - (b) SAIAE can enhance the vision students have of Agricultural Engineering
 - (c) SAIAE affords the students an opportunity to mix with engineers and other professionals
 - (d) Need to translate student members to full members
- 3. SAIAE needs to be an example and lead by**
 - (a) Being a vibrant, dynamic, relevant, active and growing institute
 - (b) Promoting at all levels the skills of Agricultural Engineers
 - (c) Being an institute which you want to be a member
 - (d) Providing opportunity for networking with colleagues
 - (e) Facilitating continuing professional development
- 4. Encourage student attendance at SAIAE Branch Meetings**
 - (a) Ensuring branch meetings have interesting, challenging and relevant topics with good speakers and are well scheduled to suit student commitments
 - (b) Subsidise student attendance at meeting
 - (c) Subsidise student travel cost to attend meetings
- 5. Student involvement in SAIAE branch committees**
 - (a) Encourage student participation in branch committees by
 - (i) Time served on committee counts towards BScEng vacation work requirement
 - (ii) Providing opportunities for development
 - (iii) Investigate student SAIAE branch meetings
- 6. Student bursaries**
 - (a) SAIAE should promote, secure and administer bursaries from industry for Agricultural Engineering students
 - (b) SAIAE should consider utilising own funds for financial assistance to students
- 7. Vacation work**
 - (a) SAIAE can assist with the facilitation of vacation work opportunities for students
- 8. Employment**
 - (a) SAIAE should market the profession and thereby create opportunities for Ag Engineers
 - (b) SAIAE should create and maintain a network of employment opportunities
- 9. Professional Registration**
 - (a) SAIAE should facilitate and ensure that adequate mentors for candidate engineers are available

As a consequence of the adoption of the above mission, the council ring fenced R 200 000.00 in 2006 for loans to students studying Agricultural Engineering. The loans are renewable on annual application, are interest free for the period of study, and may be renewed annually on application, dependent on funds available. A market related interest rate is charged on loans once a student graduates and the loan must be paid back in 1.5 times the period of time the student held the loan(s). Loans are awarded on merit and financial needs criteria and students who are awarded loans are expected to contribute to the SAIAE by serving in branch activities in their professional life. To date 3 annual loans have been made to students.

Other ongoing SAIAE support for students include the following:

- ☞ financial assistance for students to attend branch meetings,
- ☞ facilitation of vacation work training for Agricultural Engineering students by the collation and distribution of student CVs to employers seeking to employ students during their vacation,
- ☞ co-hosting the annual KZN branch meeting where awards are made for best final year design projects, and

FASTTRACK - A SPATIAL SUGARCANE TRANSPORT INFRASTRUCTURE-PLANNING MODEL

Alasdair Harris & Louis Lagrange (UKZN)

In the South African sugarcane supply chain, machinery costs (including transport) represent between 30 % and 40 % of growers' total production costs. While transport costs are estimated as being 11 % of total production costs, reality portrays that it is much higher at approximately 25 %, as it incorporates elements of costs from other categories (e.g. machinery maintenance, fuel and lubricants, licensing and insurance, sundries, contractors and farm staff). Figure 1 shows the breakdown of sugarcane production costs of a typical South African sugarcane enterprise (Meyer, 2006). At an estimated 25 %, transport cost consequently constitutes the second largest expense for a sugar cane producer with the greatest cost attributed to farm staff.

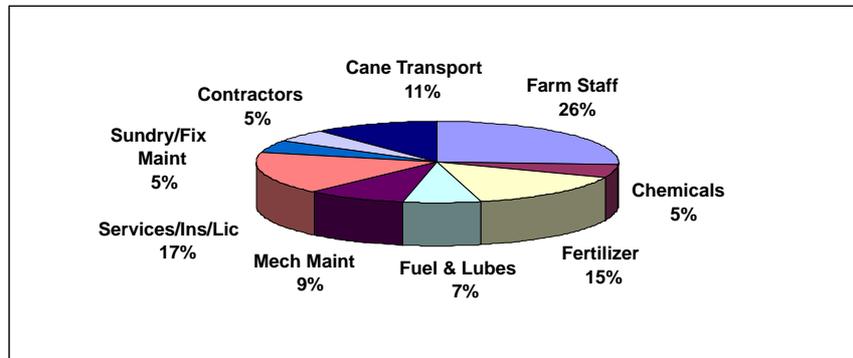


Figure 1: Typical transport costs in the Sugar Industry (Meyer, 2006)

The Department of Transport is sponsoring a Masters degree student in Agricultural Engineering to research the feasibility of alternative (and private) routes and alternative systems (like land trains). As part of this research a model, named FastTrack, was developed to investigate infrastructure planning opportunities in this industry. FastTrack integrates vehicle performance and spatial information to derive optimal pathways for high bulk agricultural transportation in terms of efficiency as well as economics. The model mathematically incorporates the following:

- ? road construction and maintenance costs,
- ? topographical terrain,
- ? land-use,

- ? vehicle performance specifications, and
- ? annual sugarcane volumes

to determine the most cost effective route from the farm (production region) to the mill. The model was created in ArcGIS 9.2 and seamlessly considers all the available layers of information simultaneously.

A small portion of the Noodsberg mill region in the KwaZulu-Natal midlands was selected as a case study area. A start point was identified as a natural flow point for all sugarcane harvested directly below this area, of which there is approximately 70 000 tons harvested annually. Currently this volume is transported along 9.3 km of national road from the start point to the sugar mill although the Euclidean distance is approximately 7 km.

Three vehicle types were assessed in the model with two common and currently utilised vehicles, the rigid tractor hilo (average payload: 14.3 tons) and interlink combinations (32 tons), being aligned on existing national roads. A penalty for driving on national roads was assumed for land trains (57 tons) as these are not currently permitted to operate on national roads in South Africa. As a result a new theoretical route with 34 % of its length consisting of existing farm roads was generated from the start point to the mill. An economic analysis was conducted on all three vehicle types, followed by a sensitivity analysis.

The economic analysis showed that under current conditions the new suggested private route generated by FastTrack for the use of land trains for the haulage the above mentioned volume of sugarcane, should recover the capital expenditure within five years. Interestingly, as the fuel price increased, the cost saving advantage of the land train system relative to the other two transport systems increased dramatically.

The FastTrack model could be utilised in any agricultural region to identify vehicle specific 'short cut' routes, offering a cost savings to farmers and hauliers alike.

LEGEND GOLF AND SAFARI RESORT DEVELOPMENT

FP Davel - Grandorff Africa Consulting

The Legend Golf and Safari Resort is a new development in the Waterberg mountains as part of the “Big Five” Entabeni Safari Conservancy, in the Limpopo province. The resort is a development of luxury housing combined with a signature golf course with an additional 19th hole and entertaining facilities.



Location of the project

The location of the Legend Golf and Safari development project is in the Limpopo province, 100km North from Naboomspruit/Modimolle and 50 km South West of Potgietersrust/Mokopane

Activities involved at the development project

The golf course is probably the biggest attraction to the development, with an additional 19th hole built against the Hanglip mountain. Together with the golf course is also the development of: 450 luxury villas, a hotel, restaurants, a golf academy, a clubhouse, conference facilities, a private airstrip, botanical gardens, a museum, a wellness centre and a sporting complex. Housing for the employees of the resort are to be built. Storage and cooling facilities, a maintenance yard, a fuel depot, a fire station and parking areas are to be built in support of the resort. Civil services need to be supplied to all the facilities and linked with roads. To finish everything off and to make it blend into its natural environment a lot of landscaping is needed.

Work of Agricultural engineers at the project

In this project of vast diversity and specialized areas, agricultural engineers are working together with professionals to share their expertise. The agricultural engineers are planning, designing and supervising the installation of the water supplies, storm water runoff management and the civil services.



Water supply deals with a wide range of aspects: raw water is supplied to the golf course, golf academy, the botanical gardens, the sporting complex and to irrigation systems at all the facilities. Purification works are needed to purify water for human consumption. Designing and building of water reservoirs, pump stations and water distribution networks are also undertaken. Potable water is supplied under gravity to all the units and facilities. Due to the development and construction that changes the surface area of the terrain storm water runoff management is being done for the area. Storm water are collected, contained and released in secure areas. Civil services includes the supply of water, electricity, telecoms and to collect the sewer from all the units and facilities. Sewer must be collected and treated and the effluent to be used as irrigation water.



Services being layed in front of a dam wall

Building styles

To keep the theme typical to Africa, the building style is based on rock structures typical to the Zimbabwe ruins. The ddi, Waterburg and Monopotapa) are specially designed to blend in with the surroundings and to keep the styles typical to Africa.



Thresholds and openings

For us as agricultural engineers it is exiting working surroundings showing the versatility of our knowledge and the fields that it can be applied to.



Zimbabwe Ruins

The Golf Course

The Legend golf course is very unique, because the course is a Signature Course individually designed in collaboration with 18 leading tour pros representing 16 countries across all five continents, appropriately starting and ending with the contributions of South Africans Trevor Immelman and Retief Goosen respectively.

Extreme 19th hole

The extreme 19 isth an extraordinary, hole played from a tee perched precariously atop the breathtaking Hanglip Mountain that dominates the resort. It requires an obligatory 90 second helicopter trip to lift you to a veritable crow's nest of a tee that offers as awesome view of the unspoiled Waterburg region. Adding to the surreal situation, the green far below you is in the shape of the continent of Africa, complete with a Madagascar-shaped mound rising from the protecting waste bunker. Unusually for a par 3, the putting surface is some 400 m out from the vertical base of the cliff. If you do the math, the straight line distance from tee to green works out at over 580 meters though. A hole-in-one on this hole will earn you US\$ 1 million.



From the tee of the Extreme 19th hole

UKZN Snippets

Professor Jeff Smithers

Head of School of Bioresources Engineering and Environmental Hydrology - University of KwaZulu-Natal (UKZN)

Students

In February 2008 a total of 24 new first year Agricultural Engineering students registered at UKZN. This brought the total number of registered undergraduate Agricultural Engineering students to 90, which is a record number for the period as shown in Figure 1. At the April 2008 graduation ceremony, three students (Darran Boote, Gcwalisile Dlamini and Trevor Baier) were awarded BScEng (Agric) degrees and two students (Brent Griffiths and Kevin Greaves) were awarded MScEng degrees. Congratulations to these students!

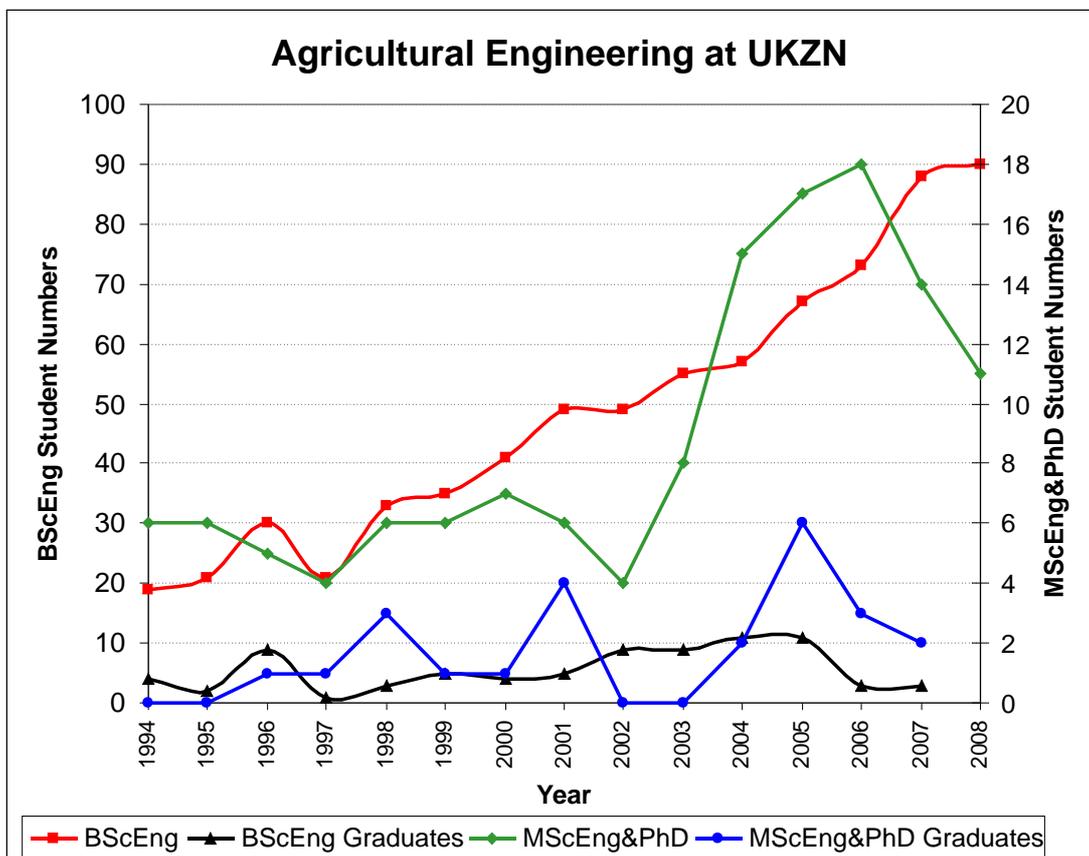


Figure 1 Undergraduate and postgraduate Agricultural Engineering student numbers at UKZN

Consideration of Figure 1 also shows a divergence between undergraduate BScEng students and BScEng graduates. In order to improve the throughput without lowering exit level standards, the Faculty of Engineering has recently established an Academic Support and Advancement Programme (ASAP) to support the teaching and learning process. The main objective of the ASAP is to address teaching and learning problems which are impacting negatively on student performance and faculty throughput rates. The programme is intended to assist students who have learning difficulties as well as addressing teaching problems in modules that have consistently poor performance. A slightly modified Agricultural Engineering programme was introduced in 2007. This enables students to do both their 3rd and 4th year of study on the Pietermaritzburg Campus, whereas previously only the 4th year of study was completed in Pietermaritzburg. Some of the advantages of the changes include increased contact time between students and staff from BEEH, some Agricultural Engineering content is incorporated into the 3rd year of study resulting in more focus on applications in Agricultural Engineering, the breadth of fields covered in the programme is broadened thus creating the potential for a degree of specialisation, and more time is available for synthesis, analysis, design and evaluation. The first students from the programme are scheduled to complete their degrees in 2009.

Research

The Institute for Research and Development (IRD) is a French research institute that deploys researchers throughout the world for medium-duration research projects, especially in the area

of rural development. The School is fortunate to be currently hosting a team of 3 permanent IRD researchers, who are contributing time, expertise, and equipment resources which benefit the School's research programme. The IRD researchers work mostly in the area of soils and water resources.

Staffing

Although some engineering disciplines at academic institutions in South Africa are currently struggling to recruit and retain academic staff, the School of Bioresources Engineering and Environmental Hydrology has been fully staffed with a relatively stable staff complement. Recent appointments, promotions and retirements summarised below.

Dr Aidan Sezanje, who is an irrigation specialist, was appointed as a Senior Lecturer in August 2007. Dr Carel Bezuidenhout, whose position is funded by the South African Sugarcane Research Institute (SASRI), was promoted to Associate Professor from January 2008. Professor Roland Schulze, after nearly 40 years of dedicated and excellent service to the University, retired from official employment by the University at the end of 2007, but continues to be as busy as ever! Professor Graham Jewitt was subsequently appointed as Professor of Hydrology to replace Professor Schulze and Mr Mark Horan has been appointed into a Hydrology lecturing post. Ms Sabine Ernst has recently been appointed into a position funded by the Leadership Equity and Advancement Programme (LEAP) at UKZN, and joins Ms Michele Warburton whose appointment is also funded by LEAP.

CPD news

IT IS EASY TO COMPLY WITH CONTINUING PROFESSIONAL DEVELOPMENT (CPD) AND RENEWAL OF REGISTRATION

It is fairly easy to comply with the requirements of the CPD system.

Category 1 – Due to the slow validation of formal developmental activities ECSA has awarded each person 1 CPD credit for 2006 and 1 CPD Credit for 2007. The compulsory five developmental activities (category 1 activities) can be obtained over the full five year CPD cycle.

Category 2 – Any registered person working in Engineering for more than 800 hours per year can claim 2 CPD credits (1 per 400hrs) 1 CPD credit can also be claimed for mentoring candidates towards registration (50 hrs)

Category 3 – Members of recognised Voluntary Associations can claim 1 CPD Credit. Additional CPD credits may be claimed for individual activities including self study at 1 CPD credit per 10hrs, up to a maximum of 3 CPD credits per annum. i.e. reading of technical journals etc.

ECSA's objective is to create a culture of CPD through which engineering practitioners can maintain their registerability in terms of the Engineering Profession Act, 2000 and international requirements.

WHY WAS IT NECESSARY TO INTRODUCE CPD?

To remain globally competitive and to maintain the high standard of engineering for which the South African engineering profession has become known in the past, it has become necessary for engineering practitioners in our country to maintain their engineering knowledge and skills, like their overseas counterparts, in a more formally structured way than before. In today's rapidly changing technological world it is no longer possible to rely on your basic engineering studies and a few years of practical training to provide

professional advice and services.

You need regularly to update your knowledge, and develop and refine your skills. This means undertaking on-going or continuing professional development (CPD).

In addition, Section 22 (1) of the Engineering Profession Act, 2000 (Act 46 of 2000) requires that a registered person has to renew his or her registration and has "to apply, in the prescribed manner, to the Council for the renewal of his or her registration".

CPD is also necessary for ECSA to maintain International Recognition

WHAT DOES CONTINUING PROFESSIONAL DEVELOPMENT MEAN ?

ECSA's definition of CPD is widely drawn and not prescriptive so as to remain flexible enough to be relevant to all members at all stages of their careers. CPD refers to activities which:

- ? have a clear set of objectives;
- ? have a formal, organized structure;
- ? require your active participation and – most importantly;
- ? extend your professional knowledge and skills.

To assist you, the following guidelines on the types of activities that constitute continuing professional development are hereby provided :

Category 1: Developmental activities

- ? attendance of structured educational/developmental meetings

such as:

- ? industry related conferences, congresses, seminars and workshops
- ? Lectures, refresher courses and colloquiums
- ? ECSA will arrange to have Overseas courses, conferences etc validated

At least five credits (50 hours) must be obtained within a five year cycle from category 1 and all activities have to be validated by the relevant Tertiary Institution or Voluntary Association.

Category 2: Work-based Activities

- ? technical work in a practitioner's field of specialization;
- ? work based activities including management; (two credits for 800 hours of work may be earned annually under this activity)
- ? mentoring young engineers in the work place and career guidance (one credit for 50 hours of mentoring annually may be earned under this activity) .

Category 3: Individual Activities

- ? membership of recognized engineering societies, (one credit annually not linked to hours);
- ? Part-time lecturing to undergraduate and postgraduate students;
- ? Supervision of students undertaking postgraduate studies;
- ? Oral examinations of final year and postgraduate students;
- ? Evaluation of M dissertations and PhD theses by external examiners;
- ? Publication of research in peer reviewed journals;
- ? Publication of technical articles;
- ? Papers presented at conferences;
- ? Participation in statutory, professional, institutional, technical or non-technical committees or task groups;
- ? Evaluation of educational qualifications for ECSA's Qualifications Examination Committee;

- ? Evaluation of competence and applications for ECSA's registration wing;
 - ? Evaluation of final year students by external examiners;
 - ? Relevant additional qualifications;
 - ? Self-study which includes, but is not restricted to studying of journals or electronic or computerized material.
- Three credits (30 hours) may be earned annually under this portion of this category.

WHAT ECSA REQUIRES FROM YOU

ECSA recognizes that, as a professional, you must decide on the type of professional development activities you undertake. However, ECSA also needs to ensure that its obligations to the public are met by setting minimum requirements for regular CPD.

All members of ECSA should claim their CPD credits either manually on Form ECPD 1, or electronically on ECSA's website, and should also submit the Renewal of Registration application form (Form R1.1 and R1.2), after ECSA has informed them of their renewal of registration date (which will be done five months prior to each individual's renewal date).

These regulations ensure that registered professionals are complying with their professional obligations, and provide each with an opportunity to renew their commitment to personal and professional development.

Retired persons have a reduced CPD requirement as stipulated in the CPD Policy Document.

ECSA's objective is to create a culture of CPD through which engineering practitioners can maintain their registerability in terms of the Engineering Profession Act, 2000 and international requirements. ECSA wishes to thank all those registered persons who have submitted their returns and applied for renewal of Registration

2/4/08

News from the branches

SAIAE-KZN Branch Meetings



Alec Rennie (MBB) and David Clark

1st Meeting

The KwaZulu-Natal branch of the South African Institute of Agricultural Engineers held their first branch meeting for 2008 on Thursday 28 February 2008. This was a non-technical meeting and was held at Pietermaritzburg Bowling Club where members and their wives and children (47 in total) met for a delicious meal of roast lamb followed by dessert. We were fortunate to secure Mr Tim Biggs as a speaker and he presented a motivational talk based on his experiences while kayaking down the Amazon River.

2nd Meeting

The second branch meeting for the year was held on Wednesday 21 May 2008. Mr Alick Rennie gave a presentation on the recently completed Muda Dam in Mozambique where he was part of the design team. Mr Rennie of MBB Consulting Engineers in Pietermaritzburg is recognized as one of the top earth dam engineers in the country and has over 20 years experience in this field. In his presentation Mr Rennie explained how the dam site was selected and the challenges in finding a suitable site. The presentation highlighted some of the important aspects in the design and construction of an earth dam. Mr Rennie gave some examples of practical problems encountered during construction and the role of the professional engineer in finding safe and cost effective solutions to these problems. The Muda Dam was built to supply water for the irrigation of sugarcane. Mr Rennie presented some slides on the design and construction of the irrigation system, also designed by MBB Consulting Engineers in Pietermaritzburg. The presentation was attended by 28 members and 30 students and was followed by drinks and snacks.

Multi-Day CPD Event 2008

The KwaZulu-Natal branch of the South African Institute of Agricultural Engineers will be organising a multi-day CPD event to be held on 22 and 23 September 2008.

The main theme for the CPD event will be *Energy, Water and Agriculture* and there will be 4 focus areas:

- 1) *Energy and Agriculture;*
- 2) *Water and Agriculture;*
- 3) *Small Scale Agriculture;*
- 4) *Bulk Transport Optimisation.*

Energy is a hot topic at present in South Africa, but also globally, and we have arranged for several speakers on this topic to bring us up-to-date on energy issues related to Agriculture.

The Bulk Transport Optimization focus area will consist on a full day symposium including vehicle design optimisation, infrastructure planning optimisation and fleet systems and management optimisation.

Please make a note of this CPD event in your diary on 22 and 23 September 2008 as it is a good opportunity to continue your professional development and to earn some CPD points.

If you are interested in giving a presentation, running a course or providing sponsorship at this CPD event then please contact David Clark at 033 2605485 or clarkd@ukzn.ac.za.

Retirement of Professor Roland Schulze

From UKZN

School of Bioresources Engineering and Environmental Hydrology

December 2007



Extracts from speech by Professor Jeff Smithers at Professor Schulze's retirement function

“Good evening Ladies and Gentleman and particularly to our guests of Honour this evening Professor Roland Schulze, Walli and family:

Roland, it is indeed a privilege to be able to say a few words this evening on the occasion of your retirement party. I am not sure that you really understand the meaning of the word “retirement”, but I will say more about that later.

I have known Professor Schulze in various forms ranging from an undergraduate student, to my boss, colleague, supervisor of my PhD thesis and senior member of staff in our school. So I think I am well qualified to make a few comments on Roland and his remarkable career.

I first met Professor Schulze in 1982 when I was a final year student in his undergraduate hydrology lectures. I don't recall too much about the lectures, but the one thing we students did remember were the pretty young girls that the Agricultural Catchments Research Unit employed! At that

stage I thought that this was Prof Schulze's way of spicing up hydrology! Little did I know at the time that the acronyms A,C,R & U were going to play a very large part in my life.

I returned in 1989 to the former University of Natal to work on research contracts under the leadership of Roland. At that stage I planned a short stay in the university environment to gain experience from the leading hydrologist in South Africa, not realising that his influence would result in me still being in the academic environment and still working mainly in the water field.

Professor Schulze has had a long and illustrious academic career at the former University of Natal and which has continued at the University of KwaZulu-Natal (UKZN). He joined the Geography Department at the University of Natal as a Lecturer in 1969 , and was later appointed as

a Senior Research Fellow in the Department of Agricultural Engineering in 1975 and, after a number of personal promotions, was promoted to the rank of Full Professor in 1987 and to Senior Professor in 1993. He has served as Head of BEEH and on various school and faculty committees and boards over his career at the University. He initiated the degree programme in Hydrology at the University in 1981, has lectured to all graduates from the Hydrology programme, and has either supervised or been involved in the research projects of nearly all the postgraduates from Hydrology.

The student output from Roland's teaching career are extremely impressive:

- ☞ Approximately 300 students have graduated with a BSc co-majoring in Hydrology since 1982.
- ☞ Of these, approximately 115 graduated with Honours degrees in Hydrology since 1983.
- ☞ 57 MSc and 15 PhD students have graduated under Roland's supervision.

His excellence and dedication to teaching has resulted in him receiving a number of teaching awards over his career. He also established a strong, internationally recognized and largely externally funded research group in Hydrology within the School of BEEH.

Roland saw the need for daily agrohydrological modeling more than 20 years ago and has steadily been building this modeling capability in South Africa through both his and the efforts of postgraduate students. Roland you can be extremely proud to be the “father” of the ACRU model. Not only has the modeling capability been built, but he has also focused on providing data to run the ACRU model at a national scale and this has resulted in the publication of the Agrohydrological Atlas for South Africa in 1997 and an updated and revised electronic edition will be released shortly.

Roland can be proud of the daily modeling legacy he has developed for South Africa, and the foresight he had to start something more than 20 years ago and which is increasingly being

recognized by the Department of Water Affairs and Forestry and others as essential for the management of water resources in South Africa. Through his research to solve real world problems many students have received excellent training in the hydrological field.

Again with foresight, Roland has in more recent years focused on the use of the ACRU model and associated information systems to investigate the potential impacts of climate change on water resources and agriculture in South Africa.

Some publication statistics from his career include:

☞ Journal papers (refereed)	-	111
☞ Books/monographs (refereed)	-	18
☞ Chapters in books (refereed)	-	26
☞ Published conference proceedings-		120
and a large number of more popular type of publications		
☞ Other refereed publications	-	48
☞ Other publications	-	16
☞ Research reports	-	36
☞ Consulting reports	-	87
☞ Articles for informed laypersons-		29
☞ Media presentations - radio	-	23
☞ Media presentations - TV	-	12

Roland is currently rated as a scientist in the B+ category by National Research Foundation. He was awarded a Gold Medal by the South African Institute of Agricultural Engineers in 1990 for outstanding contribution to Hydrology in South Africa.

He is currently on the Editorial Board of at least 4 prestigious international journals and is a member of numerous national and international committees, editorial/review boards, writing teams and advisory boards / panels.

Roland was awarded a Fellowship of the University of Natal in 1991 and in 1993 was made a Fellow of the Royal Society of South Africa, in recognition of distinguished contributions in the furtherance of science. In 2003 he was awarded Life Membership of the

International Water Academy, in Norway.

Some of the characteristics that I have admired in Roland are the following:

His focus, dedication, commitment and hard work, with many late nights and early mornings resulting in deadlines being met and the delivery of many products over his career.

His impartiality and to let the best available science guide decisions. We are surrounded by the forestry and sugar industries, which has led to heated debate over many issues, including the efficiency of water use by trees and sugarcane. I have witnessed on a number of occasions Roland cutting through hidden agenda's and waffle to clearly identify the real issues and then convincing the antagonistic parties to utilise the best available science to decide on a pragmatic course of action.

Roland's pragmatic and scientifically based approach to solutions for real world problems, and the incremental building to a long term vision, has facilitated him reaching extraordinary heights in his career. Despite these heights he has remained a humble and family orientated man.

Roland has always reminded me and other colleagues that you can do anything in life, but not to get confused about two things: One of these is religion and the other is women. According to the Schulze doctrine, getting confused about either your faith or woman leads to a complicated and messy life! I believe that this doctrine is reflected in the way he has conducted his life.

Walli, despite my best efforts I am afraid that I have not managed to teach or help Roland to say NO more often! He is still constantly on the move and involved in too many activities. He goes into his official retirement still leading 5 research projects, with probably 6 new projects starting in 2008, and he is currently supervising 8 MSc and 7 PhD students!

Roland, the Oxford dictionary defines retirement as "to give up your regular work because you are getting old"! Looking at your recent diary over the past month I am not sure that this is happening;

If I can summarise the last few weeks, which are fairly typical:

- ☞ Roland attended a week long international conference on Hydrology, Environment, Life and Policy (HELP) in Johannesburg, which he helped organize and he also presented a workshop on Climate Change at the conference.
- ☞ After the conference, he spent the weekend taking delegates around the Thukela Catchment.
- ☞ After the weekend, he was in the office on Monday, flew to Switzerland on Tuesday, arrived back in Pietermaritzburg on Friday.
- ☞ The following week was spent organising and presenting at an Advanced International Training Programme and Regional Seminar on "Climate Change – Mitigation & Adaptation", but he also managed to slip off to Pretoria on Monday to meet with DWAF.

Roland, just looking at your diary makes most of us normal people exhausted! For the record, Roland has been on 127 overseas trips over his career, 10 of these in this year. You can see why Roland is often asked if his dog barks at him as a stranger when he arrives home late at night after one of his frequent local or international trips.

A career such as Roland has achieved does not happen without strong support systems. I believe that these support systems have been the Three Women in his life; Walli, Cynthia and, until recently, Manju. I told you the Professor surrounded himself with women!

Manju has until recently always been there to code and re-code in Fortran the Professors ideas and to patiently work through and check both data and results. Richard, I hope you know what you have let yourself in for!

I think that Cynthia has tried to retire twice, but still continues to churn out documents and presentations for Roland as required! Roland, I am not sure how you would cope if Cynthia actually retired and gave up her regular work. On the other hand I am not sure how Cynthia would

cope if Roland actually gave up his regular work.

What does one say about Walli? She has been a dedicated and patient life long partner who has kept the home fires burning and has given Roland the space to achieve. I am convinced that without this support Roland would not have achieved as he has.

Despite his hectic schedule, Roland has remained a dedicated family man and has been known to boast that he never missed an important school sports fixture where Mark or Claudia were involved.

Roland, I have really appreciated your wise council, support and encouragement, particularly over the past 5 years in my current position. I am sure that you will enjoy your “retirement”, be freer to pursue your research interests and to spend more time on your international collaboration and contacts. Remember that you don't have to rush back to Pietermaritzburg after conferences and that you can now really afford to spend time doing more sight seeing on your international travels. So please remember to add on the days to your travel schedule and remember that you can now officially say NO to requests if you want to!

Roland, words cannot describe your contribution over more than 30 years to both the former Department of Agricultural Engineering and also to the School of BEEH. Please accept our deepest appreciation and I trust that you will fill your retirement doing whatever pleases you and Walli most.”



The 17th CIGR World Congress 2010 Québec, Canada, 13 – 17 June 2010

<http://www.bioeng.co/Events/CIGR/index.htm>

The international Commission of Agricultural Engineering (<http://www.ucd.ie/cigr/>) will hold its 17th World Congress in **Québec City, Canada, from 13-17 June 2010**. The Canadian Society for Bioengineering, *la Société canadienne de génie agroalimentaire et de bionigènerie* (CSBE/SCGAB), will be the host Society (<http://www.bioeng.co/>). The theme of the Congress is “Sustainable Biosystems through Engineering”. The local organising committee is planning several exciting events that will make your stay in Québec City a truly memorable one. Québec is one of the oldest cities in North America, celebrating its 400th anniversary in 2008. Eastern Canada offers excellent opportunities for technical, historical and natural science exploration.

Plan to share your most recent discoveries in the areas of agricultural, food and biosystems engineering with colleagues from around the world. Mark the dates (13-17 June 2010), so you can participate in the progress and development of the trends in your field.

More detailed information about the 17th CIGR World Congress 2010 will appear on the CIGR website in the near future. You may also contact the following persons:

Chair of the local organizing committee

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18th CIGR World Congress 2014 September 2014, Beijing, China

Sponsors

The sponsors of the CIGR World Congress 2014 will include many international and national organizations engaged in agricultural engineering. The proposed sponsors are as follows:

- International Commission of Agricultural Engineering (CIGR)
- Chinese Society of Agricultural Machinery (CSAM)
- Chinese Society of Agricultural Engineering (CSAE)

Co-sponsors

- China Association of Agricultural Machinery Manufactures
- China Food and Packaging Machinery Industry Association
- Local government offices and local, regional and international associations, societies and institutes engaged in agricultural engineering, which will be included later.

Organisers

- Chinese Academy of Agricultural Mechanization Sciences (CAAMS)
- Chinese Academy of Agricultural Engineering (CAAE)
- China Agricultural University

Topics

- Land and Water engineering
- Farm buildings, equipment, structures and environment
- Equipment engineering for plant production
- Rural electricity and other energy resources
- Management, ergonomics and systems engineering
- Post-harvest technology and processing engineering
- Information systems

The detail programme will be finalised later by the respective CIGR sections.

Time and venue

September 2014, Beijing

Since the 2008 Olympics will be held in Beijing, more convention centres and hotels with excellent facilities for holding large-scale meetings will be made available. Many more options will become available according to the scale and activities of the Congress.