



AC21 Newsletter

Contents:

AC21 International Forum Report	2
Report on the 10 th AC21 Steering Committee (STC) Meeting / 5 th AC21 General Assembly (GA)	5
APAIE Report, 2012	7
NAFSA Report, 2012	8
AC21 Special Project Fund, 2012	9
AC21 Member Introductions	9
Tongji University	
North Carolina State University	
From the General Secretariat	12
Upcoming AC21 Activities and Events	13
AC21 General Secretariat Activities	13
AC21 Members	14

International Knowledge Coalitions Required for Human Development

H. Russel Botman

Rector and Vice-Chancellor of Stellenbosch University, and a Vice-President of the Association of African Universities



Africa has been developing steadily since the turn of the millennium, but the next big challenge for the continent – and other developing regions worldwide – is to translate economic growth into broad-based human development. Universities have a vital contribution to make, in line with what Castells calls their “engine of development” role. They produce and impart knowledge for the public good – through research aimed at finding solutions to pressing needs, and by delivering graduates able to lead the kind of innovation that countries require in order to participate in the global knowledge economy.

This will be unpacked in detail in 2014 when the International Forum of the Academic Consortium for the 21st Century (AC21) comes to Africa for the first time. The meeting will be hosted by Stellenbosch University (SU) from March 16–20, and the theme will be “Science for Society: Higher Education as builder of hope”. It will be preceded by a meeting of the Stellenbosch International Academic Network (SIAN), from March 11–15, 2014.

SU follows a science-for-society approach under its HOPE Project – a reflection on Freire’s notion of a “pedagogy of hope”. The core functions of the University – learning and teaching, and research, as well as community interaction – have been aligned with themes derived from the UN Millennium Development Goals.

In furtherance of their developmental role, high-

er education institutions should aim to gain the support of universities in other developing and developed regions around the globe. The impact of bilateral and multilateral collaboration can be increased by moving beyond a narrow conception of institutional advancement, embracing instead the much broader idea of international knowledge coalitions for human development.

Africa’s higher education situation presents a number of unique challenges. Since 1987, the continent has lost 11% of its share in world science, with sub-Saharan Africa’s share decreasing by 31%. The continent’s research output now amounts to just 0.7% of the global total.

Part of the problem is the limited contact that African scientists have with one another. Perhaps as a consequence of colonisation, higher education institutions have maintained contact with their former colonial powers, but have been slow to build ties with neighbouring institutions.

Addressing this problem requires innovative approaches to collaboration within and with Africa. The traditional mode of north-south collaboration needs to be expanded to south-south and south-south-north collaboration. Numerous examples of institutional and national strategies for increasing African collaboration exist. A more recent phenomenon has been multiple-partner networks, often organised around a jointly administered educational programme, and involving joint research on relevant themes. AC21’s 7th International Forum will provide an ideal opportunity for universities to re-evaluate their internationalisation strategies to ensure they include an explicit focus on developing sustainable and long-term knowledge coalitions.

AC21 International Forum Report

Kent Anderson
Pro-Vice Chancellor (International)
The University of Adelaide



The University of Adelaide, in South Australia, hosted the 6th AC21 International Forum on 12–14 June 2012.

The Forum attracted 130 delegates from 15 of the AC21 member universities: senior executives, academic staff and administrators. The theme was Maximising the Benefits of Internationalisation. Keynote speeches were given by Australia’s Minister of Tertiary Education, Senator Chris Evans; Director-General of China’s Ministry of Education, Madame Zhang Xiuqin; former Director General of DAAD, Dr Christian Bode; international rankings expert Prof Simon Marginson; and former Australian Minister for Defence and Chancellor of University of Adelaide, Robert Hill. Their presentations can be downloaded on the Forum website. (<http://www.adelaide.edu.au/ac21conference/post-conference/presentations/>)

The conference proved a great success, with a consistently high standard of thought-provoking keynote speeches, several panels, a range of presentations, and a number of proposals for collaboration among AC21 members. Plenary panels covered collaboration with China, and the future of university rankings. As this is the 10th anniversary year

for AC21, there was also a plenary session reviewing AC21’s past and looking at its future role and activities. The 20 parallel sessions had individual and group presentations covered four sub-themes: global research priorities/capacity building; industry partnerships; intercultural competence; encouraging student mobility. A new element for the conference was a President’s Club special session, for the most senior person attending from each member institution.

On the day after the Forum, there were meetings of the AC21 Steering Committee and General Assembly, discipline-led sessions, and a tour of the University’s Waite campus (the largest agricultural research facility in the southern hemisphere).

The conference helped to support collaboration between AC21 Consortium members as well as encourage further linkages. This was achieved not only through the conference sessions, but also through good attendance at social events including the Welcome Cocktail Reception and the Conference Dinner.

An emerging theme from the conference was leveraging the past 10 years of success into specific value-added Consortium activities going forward. Recognising that all partners will have different priorities, the use of sub-groupings of partners was

advanced as a practical way to take specific projects forward. For example, some of the projects suggested included:

- a. Research collaboration around Automotive Engineering;
- b. Research collaboration around Agriculture and Food Security;
- c. Benchmarking and professional staff exchange;
- d. A web of student mobility/exchange based on bilateral or sub-groupings;
- e. AC21 short-courses for graduate students in areas of collective strength.

The AC21 General Assembly endorsed a proposal from Nagoya University to hold an AC21 International Graduate Summer School in Bangkok 31 May to 4 June 2013. Tongji University gave a presentation about the AC21 Student World Forum which it will host in October 2013, with the theme “Sustainable Mobility and the City of the Future”. Stellenbosch University gave a presentation about the next AC21 International Forum, which it will host in March 2014. The University of Strasbourg will be hosting the 2015 Student World Forum. Several universities registered interest in hosting the 2016 International Forum and/or the 2017 Student World Forum; nominations will close at the end of this year.

AC21 International Forum Report

From “Just-in-Case Library” to “Just-in-Time Library”

Yoshiharu Matsuura
Professor
Graduate School of Law
Nagoya University

At the AC21 International Forum, held at the University of Adelaide, I gave a joint report with Mr Ray Choate, the University of Adelaide Librarian. We both held the view that university libraries must set out a new vision of the future within the flow of digitalization and internationalization, and, after consultation, decided to submit an idea that could become AC21 policy.

In our understanding, libraries up to now have rested on the concept of providing a wide range of essential materials for possible situations. According to Mr Choate there is much information that does not arrive in Australia, which is far from Europe, and trying to send away for materials when information does become necessary takes both time and money. Similarly, in Japan, in my area of expertise, which is Law, I compare the laws of multiple countries, so it was necessary to prepare extensive materials. Because of this, the library became a “Just-in-Case Library”, holding a wide range of general materials, rather than a specialist library.

Electronic journals have fundamentally changed this situation. It has already become unnecessary to place materials in the library, as all the information is held in the publisher’s database. For a large section of scientific information, the library is becoming a type of mediator.

If this is the case, libraries may come to be operated under the concept that necessary information should be offered to libraries and users at the time it becomes necessary. This is the “Just-in-Time” library. This is

similar to the concept that has completely altered the method of work in the automobile industry, and is growing in the area of libraries.

So, the point of our report was that the “Just-in-Time” library concept could generate new ideas regarding international links between libraries. “Provisionally”, the University of Adelaide will stop purchasing Japanese language materials entirely, and Nagoya University will stop purchasing English language materials related to Australia. Simultaneously, they will enter into a mutual agreement, becoming companion libraries that will reliably offer one another information. Thereupon, the University of Adelaide Library will be able to obtain and use Japanese language materials through Nagoya University Library, and vice versa.

Furthermore, foreign libraries are unable to do a thorough survey of another country’s information and materials. Through the companion libraries agreement, we can not only make use of information from the partner country, but will also be able to mutually obtain information that has been carefully classified and compiled.

It will be possible to use a limited budget to create libraries with particular characteris-



tics. If we can build a strong relationship of mutual trust between the companion libraries, it will be possible for libraries in various countries to share the information of many nations in multiple languages.

Of course, this type of international cooperation is not easily achieved. What will be the common language? How will the costs of information exchange be calculated? How can we develop specialist groups to prepare necessary information packages from an efficient survey of our own country’s information? There are many such issues.

However, Mr Choate and I were both in agreement on the importance of making a trial attempt. Between the University of Adelaide and Nagoya University it will be fine to make it a small-scale trial, so we have progressed to the stage of discussing the planning of a pilot project. A large-scale project between our libraries will not be possible quickly, but we believe making the inter-school level attempt will have value.

(original text: Japanese)

AC21 International Forum Report

“Global Human Resources Development” as a Shared Issue of Developed Countries

Akihiro Asakawa

Associate Professor

Graduate School of International Development, Nagoya University



While participating in the June 2012 AC21 Conference held in Adelaide, Australia, I found a great deal to consider regarding the future state of university internationalization. This year's conference theme was “Maximising the Benefits of Internationalisation”, and, assuming the internationalization of universities to be a matter of course, we bore in mind the fact that there are issues surrounding how to bring about this result.

At this conference I introduced the example of my affiliated school, the Graduate School of International Development. Half the students enrolled in this School are international students, and, on a national level as well as at Nagoya University, the progress of internationalization is considerable. As an International Student Advisor in the Graduate School of International Development, I come into contact with various international students on a daily basis, and it was with this experience and knowledge that I attended this year's conference.

The content of my report was that, at my Graduate School, which is comprised of a great number of international students, the Japanese students accounting for half the total number of students are able to make great progress in their foreign language skills (including English) and understanding of foreign cultures without having to study abroad, due to both their everyday and very close interaction with international students. In

fact, many Japanese students in the Graduate School of International Development have experience of travelling and studying abroad, and appear to be enjoying the global environment of the School.

In Japan, also, due to the recent acceleration in expansion of Japanese enterprises overseas, so-called “global human resources”, who can work abroad or do various types of work interacting with foreign people, are increasingly in demand. In such circumstances, the internationalization of Japanese students' education is becoming an important issue for Japanese universities too, and I believe the effective use of international students can play a part in the nurturing of “global human resources”.

Such internationalization is not only about “accepting a great many international students”; it is also important to locate it in its aspect of “internationalizing local students”. At this conference I discovered that in these two trends of internationalization is, in fact, deeply and widely shared in Australia as well.

On the morning of the first day, Chris Evans, Minister for Tertiary Education, Skills, Science and Research, gave an address emphasizing precisely this point. As part of the English-speaking world, Australia is one of the foremost countries when it comes to accepting international students. Conversely, however, because it is part of the English-speaking world, the second language learning rate of Australian students is low, and the rate of Australian students studying abroad is correspondingly low. Bearing this in mind, Australia's economy is currently favourable, as a result of the “resources boom” supported by

(mainly) China's demand for resources; however, this boom will not last forever, and, because of this, nurturing human resources who can play an active role internationally is an important issue for dealing with middle-term economic trends. This was summarized in the expression of “from one-way to two-way” internationalization. Opinions on the issue of the internationalization of such Australian students were expressed and exchanged during the conference, by the Australian participants as well. It was a fresh surprise to understand that nurturing of “global human resources” is a shared issue in the developed countries.

In Japan, the “internationalization of universities” is spoken of in such contexts as accepting more international students or establishing English courses; however, rather than such simple courses of action, it is surely a more comprehensive matter of how we can nurture human resources who meet the needs of the globalizing world economy. In Japan at present there is a strong demand from the private sector for the nurturing of “global human resources”, and, regarding this, I believe the utilization of international students as resources, as in the example of the Graduate School of International Development, will become more and more important from now on.

In these terms, I believe the importance of the AC21 Network, which is able to exchange mutual practice, expertise and experience in this way, is increasing. In cooperating with overseas universities, I think that even I can make a contribution to the development of “internationalization” and “globalization”, which the higher education sector is facing across the globe. (original text: Japanese)

Report on the 10th AC21 Steering Committee (STC) Meeting / 5th AC21 General Assembly (GA)

Ayako Ido
AC21 Project Coordinator
Nagoya University

On June 14 2012, the final day of the 6th AC21 International Forum, the 10th AC21 Steering Committee (STC) Meeting (annual) and the 5th AC21 General Assembly (GA) (biennial) were held at the University of Adelaide in Australia.

Of the seven member universities of the STC, the following six participated in the STC Meeting: Chemnitz University of Technology, Germany (Katrin Schulz, Assistant to the Chancellor); Chulalongkorn University, Thailand (Kua Wongboonsin, Vice President); Nagoya University, Japan (Yoshihito Watanabe, Trustee & Vice President); North Carolina State University, USA (Bailian Li, Vice Provost for International Affairs); the University of Adelaide, Australia (Kent Anderson, Pro Vice-Chancellor); and the University of Sydney, Australia (Anton McLachlan, Director of International Development). In addition, the following four universities participated as observers: Huazhong University of Science and Technology, China (Luo Qingming, Vice President); Stellenbosch University, South Africa (Robert Kotzé, Senior Director, Postgraduate and International Office); Tongji University, China (Li Zhenyu, Director, International Exchange & Cooperation); and the University of Minnesota, USA (Molly Portz, Chief of Staff, Global Programs and Strategy Alliance).

The following five topics were raised at the STC Meeting: 1) the AC21 General Secretariat's report on the year's activities; 2) the STC membership rotation system; 3) the frequency of the GA; 4) the contents of the AC21 Position Paper; and 5) progress report and opinion exchange on the

new project "AC21 International Graduate Summer School".

1) In the report on the year's activities, a report was made first on the joint AC21 member session and introduction to AC21's activities that were carried out at international academic conferences such as APAIE (Asia-Pacific Association for International Education) and NAFSA: Association of International Educators. Next, reports were made on projects selected for financial support by the AC21 Special Project Fund to further collaborative research between multiple member universities; visits to member universities; publication of the AC21 Newsletter; the budget report for 2011; and financial planning for 2012.

2) Regarding the rotation system for STC membership, the conditions, process, and changes to the AC21 articles were discussed, and it was agreed that this content would be proposed at the GA held on the same day. The main content agreed upon was as follows: i) The STC members shall consist of seven universities. ii) Nagoya University shall be an STC member so long as the AC21 General Secretariat is established there. iii) The remaining six member universities shall rotate after a term of four years (renewal possible). iv) Elections shall be held at each biennial GA, where half the members shall be (re)elected or replaced so that not all members are rotating at one time.

3) Nagoya University proposed that the currently biennial GA be held annually. At the root of this proposal were the points that, if the GA is held biennially, agreement sought there takes two years, and that holding it annually would promote communication

between member universities. However, taking into account the burdens, etc. that would be placed on member universities by holding the GA annually, it was decided that it would remain at its current biennial frequency.

4) An opinion exchange was held regarding the AC21 Position Paper (2008–2012), which summarizes the results of AC21 activity to date as well as future issues. It was proposed that host universities for the International Forum and Student World Forum become hosts for STC Meetings, and that, with the aim of strengthening industry-academia cooperation, sub-groups be created between member universities with shared interests, to further collaborative research which will, at times, include commercial enterprises.

5) Finally, a progress report was given and an opinion exchange held on the "AC21 International Graduate Summer School" project, to be held at Chulalongkorn University and Kasetsart University in Bangkok between May 31 and June 4, 2013. This Summer School is to be co-hosted by both universities and Nagoya University; with the main theme of "Green Science and Technology for a Sustainable Future" and the sub-themes "Green Mobility and Energy" and "Agricultural Sciences and Food Production", this is a new AC21 project which invites keynote speakers and lecturers selected primarily from AC21 member universities. It is aimed at students, with a motivation for their postgraduate study, at Master's level and above, from AC21 member universities as well as non-member universities in the host country Thailand and its surrounding

countries. It offers a program focusing on cutting-edge research in fields related to the above themes, not only to develop human resources in the fields of science and technology but also with the aims of furthering the development of higher education as an international organization affiliated with United Nations Academic Impact (UNAI), and of contributing to the construction of a sustainable society. An opinion exchange was held on the project's sustainability and financial support.

At the GA held that afternoon, 12 of the 20 AC21 member universities participated. These were: Chemnitz University of Technology, Germany; Chulalongkorn University, Thailand; Gadjah Mada University, Indonesia; Kasetsart University, Thailand; Nagoya University, Japan; North Carolina State University, USA; Stellenbosch University, South Africa; Tongji University, China; the University of Adelaide, Australia; the University of Freiburg, Germany; the University of

Minnesota, USA; and the University of Strasbourg, France.

Continuing from the AC21 General Secretariat's activity report, the STC membership rotation system was proposed and approved, and the seven universities to be STC members during the next term (Chemnitz University of Technology, Chulalongkorn University, Nagoya University, and North Carolina State University, Shanghai Jiao Tong University, Stellenbosch University, and the University of Adelaide) were decided upon. In addition, reports were given by host universities on the preparation status of the 2013 Student World Forum, to be held at Tongji University, China, and the 2014 International Forum, to be held at Stellenbosch University, South Africa. It has been decided that the 2015 Student World Forum will be held at the University of Strasbourg, France, but there are several universities wishing to host the 2016 International Forum and the 2017 Student World Forum; the eagerness

of member universities regarding AC21 activities was strongly felt. In addition, the project proposal for the "AC21 International Graduate Summer School" and, in principle, the hosting of the STC Meeting by the host universities of the International Forum and Student World Forum were approved by the GA attendees.

This year marks the 10th anniversary of the establishment of AC21, a landmark stage. At the STC Meeting and GA, there was, of course, discussion on the future direction of AC21; great enthusiasm was shown towards aiming for information exchange and networking between member universities in order to realize the specific proposed activities, strengthening partnerships, and making use of the international academic network offered by AC21 to the maximum; these meetings made us feel that we have taken a new step forward.

(original text: Japanese)



APAIE Report, 2012

APAIE 2012 Conference and Exhibition 4–6 April, 2012, Bangkok, Thailand

The AC21 General Secretariat exhibited a joint Nagoya University / AC21 booth at APAIE 2012, held on April 4–6 in Bangkok. This marked the fifth occasion for the AC21 General Secretariat to have a booth at APAIE. Many APAIE participants visited the booth, where we were able to advertise future AC21 events and carry out extensive AC21 publicity.

At the APAIE venue we had the opportunity to discuss future AC21 activities and

development with AC21 member universities Chemnitz University of Technology, University of Freiburg, The University of Adelaide, University of Strasbourg, Chulalongkorn University and Kasetsart University. In addition, with Nagoya University moderating we had a joint presentation from Chemnitz University of Technology, The University of Adelaide and Chulalongkorn University, with the theme “Academic Consortium 21 (AC21) Academia-Industry Ties: Examples from

Three Global Leaders”. This was the first joint presentation of AC21 members at APAIE, but we expect to actively increase such opportunities from now on.

The AC21 General Secretariat will continue to exhibit a booth at APAIE in the future, and expects to actively exchange information with other universities as well as member universities, and to continue activities with the aim of developing AC21 even further.



NAFSA Report, 2012

4th AC21 Working Breakfast at NAFSA 2012 in Houston

– Linking science to business –
Katrin Schulz
Assistant to the Chancellor
Chemnitz University of Technology

The AC21 Working Breakfasts at the annual NAFSA conferences have already become a fine tradition. This year was the 4th time that network members participating at the NAFSA conference and exhibition came together to discuss fundamental issues and the further development of AC21.

The recent AC21 Working Breakfast, which took place on May 30, 2012 in Houston, was dedicated to the enhancement of the cross-linking between science and business, which is one of the basic principles of the network. The 4th AC21 Working Breakfast was opened by Dr. Eberhard Alles, member of the AC21 Steering Committee and Chancellor of Chemnitz University of Technology, who gave a presentation on “Academia Industry Ties - Examples from University Leader”. In his talk, Dr. Alles emphasized the necessity of maintaining close and intensive networks with excellent partners from all over the world, of identifying one’s own strengths and industrial needs, of gaining economic leaders for effective publicity events, of establishing cooperation on a “win-win-basis”, integrating not only partners from the academic and the industrial sector but also extramural research institutions, and – last but not least – of

world-wide networks like AC21.

The above-mentioned principles and strategies for the successful establishment of Academia Industry Ties were illustrated in the following presentation: Prof. Dr. Lothar Kroll, professor for lightweight structures and polymer technology at Chemnitz University of Technology, gave us an insight into the ways in which his institute manages to continuously foster and enlarge its connections to industry and extramural research institutions. As one example of “best practice”, he mentioned the “Lightweight Construction Alliance”, which incorporates more than 400 scientists from Chemnitz University of Technology as well as affiliated research institutes and 350 SMEs from the Chemnitz region. By initiating, coordinating, processing and implementing over 350 joint R&D projects in the areas of textile technology as well as lightweight structure and system construction, this alliance has already created and safeguarded more than



600 jobs in the high-technology sector.

Another project in this field led by Prof. Kroll that will boost networking between Chemnitz University of Technology and industrial partners is the Cluster of Excellence “Merge Technologies for Multifunctional Lightweight Structures” (MERGE), which won the recent German Federal Excellence Initiative and which will be funded with nearly 40 million euro until 2017. The objective of this unique excellence cluster, which includes university institutes as well as affiliated and Fraunhofer research institutes, will be the cost- and resource-effective series production of intelligent multi-component devices by merging the production processes of different materi-



als which are currently separated.

Following these presentations, the attending representatives of AC21 member institutes discussed the possibilities and ways of further enhancing the cooperation within the network. As one of the concrete outcomes

of this discussion, Chemnitz University of Technology and the University of Adelaide will intensify the exchange of students by offering attractive opportunities for studies and internships to students of the partner university.

Once more, this AC21 Working Breakfast was a success, developing new ideas and concepts for the network and generally strengthening the links between the AC21 members. So this fine tradition shall be continued!

AC21 Special Project Fund, 2012

Selection Results for the 2012 AC21 Special Project Fund

The deadline for the fourth AC21 Special Project Fund was January 31 of this year; review by the AC21 Steering Committee resulted in the selection of two projects.

The selected projects are Kasetsart University, Tongji University and Shanghai Jiao Tong University's "Planning for Sustainable Development in Thailand"; and Huazhong University of Science and

Technology, Nagoya University, Peking University, Nanjing University, Shanghai Jiao Tong University and Tongji University's "The 1st "Green Miracle" Youth Leadership Forum". A report on these projects is due to be published in the next AC21 correspondence.

Applications for the AC21 Special Project Fund will be taken every year. Projects eli-

gible to apply are those with the potential to develop into continuing AC21 projects, or shared projects which contribute to development, related to research and education or international exchange, the implementation of which will involve the participation of at least two countries and three universities. Through this Project Fund, interaction between AC21 members is expected to develop more and more.

AC21 Member Introductions

The 5th AC 21 Student World Forum Welcome Message

Zhenyu Li
Professor, Director, International Exchange and Cooperation Office
Tongji University



Dear AC21
Colleagues and
Students,

Greetings from
Tongji University,
Shanghai, China.

It is our honor to
host the 5th AC21 Student World Forum. I
would like to take this opportunity to give a

brief introduction to this university, which
you will visit next year.

Tongji University, formerly Tongji German
Medical School, was established in 1907.
The school was expanded to include engi-
neering in its programs and named Tongji
Medical and Engineering School in 1912. It
became a national university under its pres-
ent name in 1927, and is one of the seven

oldest and most prestigious institutions of
higher education in China.





Now, as a comprehensive university with 9 disciplines and 29 departments, it offers diverse courses in its 82 Bachelor Degrees, 218 Master Graduate Programs, 94 PHD Programs and 16 post-doctorate mobile stations; it has 22 state key laboratories and engineering research centers, attracting a large number of students from all over China and the world every year, particularly those who are aiming for an outstanding career in engineering. One of the university's characteristics is its close relationship with industry, providing its students with opportunities for obtaining first-hand information through interaction with society, while being a supporter of social development and economic growth. This explains why graduates from Tongji University are much sought-after by employers throughout the country. Many of them have become the backbone of China's

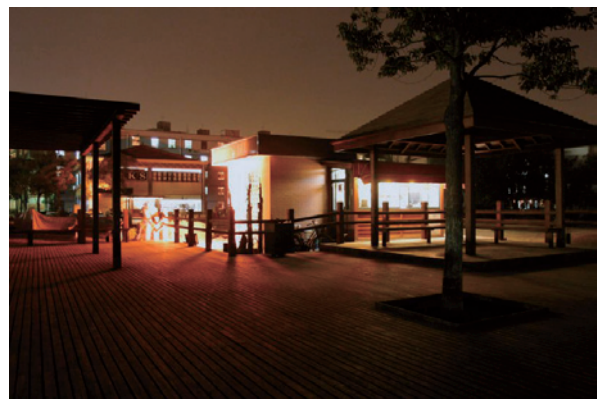
modernization drive and made a great contribution to this cause. Looking towards the future, practices of discipline synergy and activities in international exchange and cooperation are our constant endeavors for achieving a more comprehensive education objective, described as having *engineering background, the spirit of science, humanities-cultivated feeling and international vision*.

As a sustainability-oriented university, Tongji University is always aiming for sustainable development in education, scientific research, social service and a smart campus. After discussion with AC21 members, the theme for the 5th SWF is set to be *Sustainable Mobility and the City of the Future*, with 6 sub-themes (*New Concept Automobile, Green Energy Mobility, Green*

Life Style & Mobility, Public Transport, Bicycle, Policy & Others). Of course, the imaginative input of young people from all over the world is highly anticipated!

The opening ceremony of the Student World Forum will be held at the Sino-Finnish Centre. As well as experts' technical reports and workshops, the students will have a technology visit and sightseeing at Shanghai Urban Planning Exhibition Center, Shanghai Tunnel Science and Technology Museum, Tian Zi Fang, Tongji Jiading Campus, Shanghai Museum, and a tour of Huangpu River. For more information, please visit the website at <http://auto.tongji.edu.cn/>. We are looking forward to having all AC21 members join in these important events in 2013! It will be a memorable experience!

It is also our pleasure to host the Steering Committee meeting at the same time. Sometimes, after a busy and routine day, we ask ourselves what the university spirit and university philosophy actually is. I believe AC21 will be a good platform for the process of seeking an answer to this, as well as for achieving an agreement on norms, principles, values, and rules, as Prof. John Taplin mentioned before. It must be for a similar reason that the Olympic Games have an enduring appeal across the world.



AC21 Member Introductions

North Carolina State University – Where Discovery Begins

North Carolina State University

Since the day of its creation – March 7, 1887 – NC State has been moving forward. A clear mission propelled the land-grant college: to open the doors of higher education to all of North Carolina, and to transform the state by developing and dispersing an understanding of agricultural and mechanical sciences.

And NC State still moves forward today. With more than 34,000 students and nearly 8,000 faculty and staff, North Carolina State University is a comprehensive university known for its leadership in education and research, and globally recognized for its science, technology, engineering and mathematics leadership. As one of the leading land-grant institutions in the nation, NC State is committed to playing an active and vital role in improving the quality of life for the citizens of North Carolina, the nation and the world.

How? Researchers across the university and Centennial Campus are deeply engaged in making new, application-driven discoveries. As a major research university, NC State has the people – from undergraduate and graduate students to faculty – and the responsibility to advance knowledge, transfer technology, and discover and develop innovations that solve some of the world's



University Communications at NC State

most pressing problems.

NC State's research expenditures are approaching more than \$325 million annually, with almost 70 percent of faculty engaged in sponsored research and 2,500 graduate students supported by research grants. NC State is ranked third among all public universities (without medical schools) in industry-sponsored research expenditures.

North Carolina Cooperative Extension, a joint effort with NC A&T State University, puts knowledge to work, providing unbiased, research-based information to more than 2.2 million citizens throughout the state each year. And when the Industrial Extension Service knocks on the door of a business, they are warmly greeted. Over the past five years, the group has returned nearly \$540 million in direct annual gain to the state by helping businesses increase efficiency, productivity and quality through the use of the latest technologies and best practices in engineering and business management.

NC State's Centennial Campus is a unique community of collaboration. Industry and government partners work alongside faculty, staff, post-docs and students conducting cutting-edge research in state-of-the-art facilities. Home to more than 130 corporate and government research partners, as well as incubator companies, and NC State University research units, Centennial Campus is the premier university research campus in the country.

Consistently ranked among the nation's top 50 public universities and ranked by Princeton Review



as a best value for students, NC State is a place where students can fit in – and dig in. Beginning their freshmen year, NC State students start work on their major right away – whether it's conducting research alongside faculty or starting a challenging co-op or internship. While the student population is large, you won't get lost in the crowd. Faculty and staff are accessible, friendly and helpful; large classes are always paired with smaller discussion sections or labs.

Many students and faculty from around the globe call Raleigh home. And it's no wonder why. Raleigh, the state's capital city, has recently been ranked the best city to live in the United States. The Research Triangle region surrounds the NC State campus where many of the country's leading, Fortune 500 technology, research and pharmaceutical companies are located.



From the General Secretariat

Tomoki Kawahira
Associate Professor
Graduate School of Mathematics
Nagoya University

It is often said that there are no national borders in scholarship. As a mathematics specialist, I am involved in several projects with overseas researchers, but, given the nature of this field, what we call projects are extremely small scale. In most cases, we just discuss a specific problem one-on-one with a specific person. This basically means we spend hours and hours standing or sitting around the blackboard, continuing our calculations and demonstrations by trial and error. However, opportunities for taking this kind of time are very limited. Within Japan, I am able to meet collaborating researchers more frequently, but in terms of meeting overseas researchers, particularly in Western nations, this is not the case: at most, it is around 2 or 3 times a year. In the spare moments between lectures and other work, regardless of extra classes or the hardships of jet lag, I somehow manage to meet with my overseas collaborators. Occasionally I make use of communication methods like email, chat, and Skype to have discussions; completing one collaborative paper usually takes as long as 3 or 4 years.

Incidentally, my impression is that email, chat and other such methods of communication are not particularly useful for doing anything other than writing or proofreading papers. These tools excel at conveying “words”, but they do not appear to be suited to conveying extremely abstract mathematical concepts and the significance of complex

numerical formulae. (It may be simply that our efforts to put these into words are insufficient, but...) Therefore, researchers like ourselves place great importance on the process of actually meeting at some place and having discussions there, because we have the continual awareness of these limitations: that some things cannot be conveyed with “words” alone, or that “diagrams” alone can be too ambiguous. There are many senses and intuitive feelings that we humans cannot put into “words”, and these are sadly lost in the process of transforming our thoughts into written compositions. However, when we meet people and listen to them face to face, something that cannot be put into “words” is communicated bit by bit. There are also times when we can hear a simple allegory, of the kind that cannot be put into a written paper, and immediately grasp its essence. In addition, when place and time continue to be shared, we become able to approximate one another’s thought patterns.

Such situations are not limited to mathematics; it is much the same for any collaboration in theoretical research involving a small number of people. Research funds are mostly laid out in travel and personnel expenses, in sending the necessary people to the necessary places; also in opening a workshop, gathering people together, and offering a place where information can be exchanged. There are no national borders in scholarship. Therefore, if there is a neces-

sity for research, we will go beyond national boundaries (in a political sense), even if the cost is high.

Until this point my discussion has been at the level of individual researchers; let us now widen this point of view. As a thought experiment, I will try to apply the above discussion to AC21 and other international cooperation projects between universities.

AC21 is an organization of cooperation between universities that have adopted shared ideals and goals. For me, the first thing that comes to mind is an airline alliance; but in AC21, in place of strengthening cooperation on a practical level as seen in “code-share flights”, the base of activity is shared work on the level of information, such as ideas administered by the universities, recognition of current conditions, and awareness of issues. This looks as if these universities, huge organisms, are transmitting mutual “thought activities.” There, also, communication in the medium of “words” is carried out at the level of the people concerned, but is becoming lost in the process of transformation into written compositions, and intuitive information will surely also decrease. I believe that considering what exactly this is, what value it has, and how we can diminish the loss of this kind of information, is a good practice exercise.

(original text: Japanese)

Upcoming AC21 Activities and Events

2013	May–June	AC21 International Graduate Summer School
	October	Fifth Student World Forum, Tongji University Eleventh Steering Committee, Tongji University
	2014	March
2015	[TBA]	Sixth Student World Forum, The University of Strasbourg Thirteenth Steering Committee, [TBA]

AC21 General Secretariat Activities (2012.4 – 2012.9)

2012	April 3–6	APAIE Attendance
	April 20	105 th AC21 Office Meeting
	May 17	106 th AC21 Office Meeting
	May 28–31	NAFSA Attendance
	June 6	107 th AC21 Office Meeting
	June 12–14	Attend Sixth AC21 International Forum
	July 19–20	Visit Chulalongkorn and Kasetsart University
	July 27	108 th AC21 Office Meeting
	September 20	109 th AC21 Office Meeting



Academic Consortium 21

AC21 Members

Chemnitz University of Technology (Germany)
Chulalongkorn University (Thailand)
Gadjah Mada University (Indonesia)
Huazhong University of Science and Technology (China)
Jilin University (China)
Kasetsart University (Thailand)
Nagoya University (Japan)
Nanjing University (China)
National University of Laos (Laos)
North Carolina State University (U.S.A.)
Northeastern University (China)
Peking University (China)
Shanghai Jiao Tong University (China)
Stellenbosch University (Republic of South Africa)
The University of Adelaide (Australia)
The University of Freiburg (Germany)
The University of Minnesota (U.S.A.)
The University of Strasbourg (France)
The University of Sydney (Australia)
Tongji University (China)

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