

#### WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION

## **HOT NEWS**

Issue 08, 2014



### WASWAC HOT NEWS No. 8, August, 2014

#### **Contents**

WASWAC News	International Youth Forum of Soil and Water	Conservation
	(IYFSWC)	1
	The Second Issue ISWCR of 2014	2-3
Meetings		6-10
Jobs		11-13
News and Report	IWSMWRHP was held successfully	4-5
	Top 5 need-to-knows about Conservation Agriculture	17-19
Book Introductions		14-16
Advertisements		13,16,19
WASWAC Application Form		

Cover photo: Returning slope farmlands to forest and grassland, Gansu Province, China. (Photo by Mr. Pan Zheng)

Editors: Ms. Mao Juan, Contributors include Dr. Samran sombatpanit, Dr Amir Kassam, and Dr. Du Pengfei.



IRTCES Building
(Where the Secretariat of WASWAC is)

The Secretariat of WASWAC

No. 20 Chegongzhuang Road West, Beijing 100048, P. R. China

Tel: +86-10-68786579

Fax: +86-10-68411174

Email: waswac@foxmail.com waswac@163.com

For ISWCR paper submission: <a href="mailto:iswcr@foxmail.com">iswcr@foxmail.com</a>

WASWAC Website: www.waswac.org



#### **International Youth Forum of Soil and Water Conservation (IYFSWC)**



You are invited to the International Youth Forum on Soil and Water Conservation (IYFSWC). The conference will bring researchers, practitioners and policy makers a world-wide platform to share their researches and discuss the creative solutions related to soil and water conservation. IYFSWC is focusing to see the "old" soil and water conservation problems in the vision of the youth.

#### For more information please visit:

#### http://iyfswc.nit.edu.cn/

#### Topics (include but not limit to)

- · Soil Erosion Processes and Modeling
- · Global Climate Change & Soil Conservation Practices
- · Land Degradation and Food Security
- · Watershed Management
- · Sustainable Development for Soil and Water
- Soil and Water Conservation during Construction
- · New Technologies and Methods for Monitoring and Assessment Soil Erosion
- · Youth Engagement and the Education of Soil & Water Conservation

#### Contact Information

Ms. Zhang, Haina Ms. Wang, Yue Tel: +86-791-88179373, +86-791-88126011

The World Association of Soil and Water Conservation (WASWAC) will present WASWAC Outstanding Youth Paper Awardat the conference.

Ten outstanding papers by authors under the age of 40 will be selected from the submitted conference papers. The primary author of each paper will be awarded 1,000 USD (about 6300 RMB).

The awarded paper will be published in WASWAC official journal - International Soil and Water Conservation Research, which is a peer-reviewed, quarterly published Eglish journal.

Sep.1, 2014 Call for Abstracts Nov. 30, 2014 Abstract Due

Please submit your abstract to

May 31, 2015 Full paper Due



### The Second Issue ISWCR of 2014

# INTERNATIONAL SOIL AND WATER CONSERVATION RESEARCH

(国际水土保持研究) Vol. 2, No. 2, June 2014



- INTERNATIONAL RESEARCH AND TRAINING CENTER ON EROSION AND SEDIMENTATION (Secretariat of World Association of Soil and Water Conservation)
- CHINA WATER & POWER PRESS











The second issue of ISWCR in 2014 has been released in late July. This issue included eight papers from 24 authors. It was uploaded to the official website of our association. Anyone wants to know more please feel free to download using the username and password provided in the fifth issue of this year at the URL: <a href="http://www.waswac.org/report.asp">http://www.waswac.org/report.asp</a>

Like many new journals, manuscripts shortage is still there. We cordially invited any fresh achievements related soil and water conservation from all researchers involved in this field. Please submit your manuscripts to our journal through <a href="mailto:iswcr@foxmail.com">iswcr@foxmail.com</a>. We will try to provide first class speed and quality both in review and publishing.

Following is the content of this issue:



# INTERNATIONAL SOIL AND WATER CONSERVATION RESEARCH

Volume 2 Number 2 June 2014

Linking landforms and land use to land degradation in the Middle River Njoro Watershed  Zackary G. Mainuri and James O. Owino
Long-term hydrological impacts of land use/land cover change from 1984 to 2010 in the Little River Watershed, Tennessee  Chunhao Zhu and Yingkui Li  11
Hydrogeological hazards and weather events: Triggering and evolution of shallow landslides  Salvatore Monteleone and Maria Sabatino
Experiment of "no-tillage" farming system on the volcanic soils of tropical islands of Micronesia  Mohammad H. Golabi, S. A. El-Swaify, and Clancy Iyekar30
Salinity status of the 2011 Tohoku-oki tsunami affected agricultural lands in northeast Japan  Kingshuk Roy, Katsuhiro Sasada, and Eiichi Kohno  40
Investigation of time dependent development of soil structure and formation of macropore networks as affected by various precrop species  Sebastian K. Pagenkemper, Daniel Uteau Puschmann, Stephan Peth, and Rainer Horn51
Using meshes to change the characteristics of simulated rainfall produced by spray nozzles Sílvia C. P. Carvalho, João L. M. P. de Lima, and M. Isabel P. de Lima67
Irrigation capability evaluation of Illushi floodplain, Edo State, Nigeria  A. S. Umweni and A. O. Ogunkunle
Cover photo: Terraced fields in Ming'ao, Yongjia County, Zhejiang Province, China
Map publishing license No.: GS(2013)2863





#### **IWSMWRHP** was held successfully

International Workshop on Sediment Management in Water Resources and Hydropower Projects (IWSMWRHP) was held in Beijing during August 18 – 20, 2014. This workshop was supported by ASTAE of World Bank (WB). Participants include 42 specialists in sediments research from 13 countries such as Afghanistan, India, Nepal, Pakistan, Thailand, Vietnam, Indonesia, People's Republic of Bangladesh, Kingdom of Bhutan, Kingdom of Cambodia, Lao People's Democratic Republic, Republic of the Union of Myanmar and the Democratic Socialist Republic of Sri Lanka. This workshop was organized jointly by WB and International Research Training Center on Erosion and Sedimentation (IRTCES).



Prof. Ning Duihu, the deputy director of IRTCES, as one of the representative of sponsors, gave a welcome speech. He made a brief introduction on IRTCES consist of its conferences, secretariats, prizes, communications and researches, etc.





Mr. Pravin Karki and Dr. George Annandale, as the expert of WB and the representative of lectures, introduced the purpose of this workshop and expressed their wishes in improving participants' knowledge through this training respectively.





On August 20, all participants visited Daxing experimental base of China Institute of Water Resources and Hydropower Research (IWHR) and talked over with staff working there.









#### International Congress on the occasion of

#### the International Year of Soils 2015



#### Location:

Christian Albrechts University zu Kiel - Audimax

#### Date:

September 23-26, 2015

#### **KEY DATES Deadline:**

Abstract submission 1st March 2015

Early Bird Registration 31st March 2015

Notification of abstract acceptance 31st March 2015

Online Registration open 1st February 2015

#### **Topics:**

- Soil structure and pore rigidity effects as prerequisites for quantification of physicochemical processes
- Effects of limited pore rigidity and soil resilience on hydraulic, mechanical, thermal, and diffusion properties
- Modelling approaches to quantify limited soil rigidity in structured soils at various scales
- Innovative approaches to predict climate change induced affected sinks and sources of e.g. atmospheric C, nutrient, water and its consequences to their accessibility and availability.

Details at: <a href="http://www.soils.uni-kiel.de/de/sustain-2015">http://www.soils.uni-kiel.de/de/sustain-2015</a>



### **ISMOM 2015**

### Importance of soil interfaces for sustainable development

Joined meeting:

**IUSS (commission 2.5), AQSSS and CSSS** 

DATE: Sunday July 5 through Thursday July 10

LOCATION: McGill University, Montréal, Qc, Canada







July 12-16, 2015 | Volcani Center, Israel

#### **Topics:**

- ♦ Soil and crop proximal sensors
- ♦ Remote sensing applications in precision agriculture
- Spatial variability and mapping
- ♦ Variable-rate application equipment
- ♦ GNSS, guidance systems and machinery
- ♦ Robotics and new technologies including MEMS and micromechanics
- ♦ Management, modelling and decision support systems
- ♦ Precision crop protection
- Advances in precision fruiticulture/ viticulture/ citriculture/ oliviculture and horticulture in general
- ♦ Advances in precision irrigation
- ♦ Experimental designs and data analyses
- ♦ Economics and sustainability of precision agriculture
- ♦ Emerging issues in precision agriculture (energy, life cycle analysis, carbon footprint, etc.)
- ♦ Practical adoption of precision agriculture
- ♦ Education and training in precision agriculture

#### **IMPORTANT DATES**

Abstract Submission Deadline: October 12, 2014

Online Registration Opens: End of October, 2014

Abstract Acceptance Notification and call for full Papers: November 14, 2014

Deadline for full Paper Submission: December 28, 2014

Decision to authors and requests for paper revision: February 27, 2015

Deadline for receiving revised papers: March 27, 2015

End of Early Bird Registration: May 4, 2015

Details at: <a href="http://www.ecpa2015.com/">http://www.ecpa2015.com/</a>



#### Themes:

Theme 1. Dealing with contamination of soil, groundwater and sediment

- 1a. Assessment and monitoring
- 1b. Risk assessment and management
- 1c. Remediation technologies and approaches
- 1d. Regional approaches for groundwater quality management

Theme 2. Soil, groundwater and sediment in the biobased, circular economy

Theme 3. Managing multiple functions of the subsurface

Theme 4. The role of the subsurface in climate change adaptation

#### Program:

Monday • 8 June	Tuesday • 9 June	Wednesday • 10 June	Thursday • 11 June	Friday • 12 June	
Pre-conference Courses	Registration	Registration	Registration	Registration	
	Opening	Parallel Sessions	Parallel Sessions	Parallel Sessions	
	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
	Parallel Sessions	Parallel Sessions	Parallel Sessions	Closing & Poster Awards	
	Lunch	Lunch	Lunch		
	Parallel Sessions	Parallel Sessions	Parallel Sessions	Parallel Scientific Field Trips	
	Coffee Break	Coffee Break	Coffee Break		
Velcome Reception & Registration	Parallel Sessions	Parallel Sessions	Parallel Sessions		

Deadline for Submission: 30 November 2014

Details at: <a href="http://www.aquaconsoil.org/themes--call.html">http://www.aquaconsoil.org/themes--call.html</a>







#### TUAT-MARCO Joint International Workshop on

### Rice Paddy Module Development in SWAT 2014

- Development of a tool for sustainable rice production in Asia and world -



Date: 18 - 21 November, 2014

Venue: Tokyo University of Agriculture and Technology (TUAT), Fuchu, Tokyo, Japan

#### Organized & Sponsored by:

Tokyo University of Agriculture and Technology (TUAT)

Leading Graduate School Program for Green and Clean Food Production, TUAT

National Institute for Agro-Environmental Sciences (NIAES)

Monsoon Asia Agro-Environmental Research Consortium (MARCO)

#### Supported by:

United States Department of Agriculture, Agricultural Research Service (USDA-ARS)

World Association of Soil and Water Conservation (WASWAC)

Registration Fee: Free for attending the Workshop

#### **Abstract Submission:**

Call for abstracts with 250 to 350 words in English for poster presentation. Field to watershed-scale monitoring & modeling studies of water and chemical dynamics are particularly welcome. For further information, please send E-mail to the contact address below.

Contact at: Hirozumi Watanabe, Tokyo University of Agriculture and Technology (TUAT)

E-mail: pochi@cc.tuat.ac.jp

Sadao Eguchi, National Institute for Agro-Environmental Sciences (NIAES)

E-mail: sadao@affrc.go.jp





# 1. Research Assistant or Research Associate in Land Surface Modelling and Soil Moisture Scaling



A postdoctoral position is available within the Department of Civil Engineering to evaluate the performance of the Joint UK Land Environment Simulator (JULES) in reproducing soil moisture dynamics and key land-atmosphere interactions in the UK at hyper-spatial resolution in combination with novel cosmic-ray soil moisture technology and remote sensing products. A PhD in meteorology/hydrology or related disciplines (e.g. environmental science) with an interest in land-atmosphere interactions, numerical modeling, remote sensing, and data assimilation is essential. This fixed term post is part of the NERC-funded project AMUSED (A MUlti-scale Soil moisture-Evapotranspiration Dynamics study) whose ultimate goal is to identify the spatiotemporal scale-dependency of key dominant processes that control changes in soil moisture and land-atmosphere interactions.

You will have experience using land surface models (e.g., JULES, CLM, Noah, VIC) to predict soil-vegetation-atmosphere interactions, some programming knowledge (e.g., Fortran or C) and experience with Linux operating system, demonstrated ability to publish peer-reviewed papers, effective written and oral communication skills, willingness to work in a team, in an academic research environment, and development collaborative links.

You will ideally have knowledge of hydrometeorology, land-atmosphere interactions, data assimilation and/or remote sensing, and some previous experience with fieldwork activities.

This post is offered on a full time fixed term contract for 30 months in the first instance.

Interviews are expected to take place in late October 2014.

For informal inquiries, please contact Dr Rafael Rosolem, Lecturer in Water and Environmental Engineering, <a href="mailto:rafael.rosolem@bristol.ac.uk">rafael.rosolem@bristol.ac.uk</a>



The successful applicant for this vacancy may be appointed either on a fixed term or a permanent contract depending on the extent of their previous relevant research experience, in line with the University's Fixed Term Contract Agreement. Further information can be found at <a href="https://www.bristol.ac.uk/hr/ftc">www.bristol.ac.uk/hr/ftc</a>

The University of Bristol is committed to equality and we value the diversity of our staff and students.

Closing date for applications 12 October 2014.

Details at: http://www.earthworks-jobs.com/geoscience/bristol14091.html

# 2. PhD Scholarship Opportunities in School of Earth, Atmosphere and Environment, Clayton Campus, Melbourne, Australia



PhD research scholarship opportunities exist in the School of Earth, Atmosphere and Environment, Monash University for, high-quality, dedicated, well-motivated and enthusiastic students. The School of Earth, Atmosphere and Environment is located at the Clayton Campus of Monash University in Melbourne and is renowned for its high standards in teaching and research. An extensive range of research facilities are available to postgraduate students in the school, including the Australian Synchrotron, the Monash Centre for Electron Microscopy (FEG-SEM, TEM), and laboratories for soil science, hydrology, palaeoecology, climatology, remote sensing and GIS, major and trace element analysis (LA-ICP-MS), X-ray diffraction (XRD), and high-performance computer modelling.

Projects are available in a wide range of fields, including: Land-surface processes and hydrology, Climatology and climate adaptation, Palaeoecology and Quaternary science, Oceanography, Remote sensing and GIS, Soil science

More specific information on the research interests of academic staff may be found at: http://monash.edu/science/about/schools/earth-atmosphere-environment/ourpeople/index.html

The University has a comprehensive support network for the diverse needs of international students. Graduates of Monash University have a reputation as independent learners, innovators and leaders, and so are widely sought after by international employers. Further details regarding Monash University may



be found at: www.monash.edu.au

A range of stipend and tuition-fee scholarships is available for Australian and International Students.

Details of the various scholarships may be found at:

http://mrgs.monash.edu.au/scholarships/index.html.

There is the potential for Scholarships to be taken up at any time during the year.

Applicants will typically hold an undergraduate degree based on at least 4 years of study, including a significant research project component, and have First Class Honours or MSc qualifications or their equivalent. Monash scholarships are highly competitive and successful applicants generally have relevant additional research experience and/or research publications in international journals. Applicants for whom English is not first language, or who have not undertaken their degree studies with English as the language of instruction, must attain a satisfactory English language test score (TOEFL or IELTS) before the allocation of scholarships in early December.

Please post your expression of interest by completing the required document located at <a href="http://monash.edu/science/about/schools/geosciences/prospective/eoiapplication.html">http://monash.edu/science/about/schools/geosciences/prospective/eoiapplication.html</a>

Please note expressions of interest without academic transcripts will not be considered.

Details at: http://www.earthworks-jobs.com/geoscience/monash14073.html







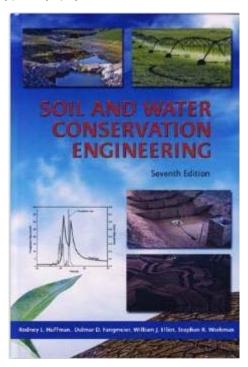
#### SOIL AND WATER CONSERVATION ENGINEERING

By Rodney L. Huffman, et al.

Publisher: American Society of Agricultural Engineers; Seventh edition (October 4, 2013)

Language: English

ISBN-10: 1892769867 ISBN-13: 978-1892769862



The updated seventh edition continues to emphasize engineering design of soil and water conservation practices and their impact on the environment, primarily air and water quality. As in previous editions, the purpose of this book is to provide a professional text for undergraduate and graduate agricultural and biological engineering students and for others interested in soil and water conservation in rural and urban areas. Subject matter includes all the engineering phases of soil and water conservation for a one- or two-semester course.

Soil Conservation Service Curve Number (SCS-CN) Methodology (Water **Science and Technology Library)** 

By S.K. Mishra and Vijay Singh

Paperback: 344 pages

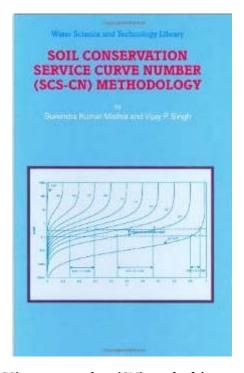


Series: Water Science and Technology Library (Book 42)

Publisher: Springer; 2003 edition (February 28, 2003)

Language: English

ISBN-10: 1402011326 ISBN-13: 978-1402011320



The Soil Conservation Service (SCS) curve number (CN) method is one of the most popular methods for computing the runoff volume from a rainstorm. It is popular because it is simple, easy to understand and apply, and stable, and accounts for most of the runoff producing watershed characteristics, such as soil type, land use, hydrologic condition, and antecedent moisture condition. The SCS-CN method was originally developed for its use on small agricultural watersheds and has since been extended and applied to rural, forest and urban watersheds. Since the inception of the method, it has been applied to a wide range of environments. In recent years, the method has received much attention in the hydrologic literature. The SCS-CN method was first published in 1956 in Section-4 of the National Engineering Handbook of Soil Conservation Service (now called the Natural Resources Conservation Service), U. S. Department of Agriculture. The publication has since been revised several times. However, the contents of the methodology have been nonetheless more or less the same. Being an agency methodology, the method has not passed through the process of a peer review and is, in general, accepted in the form it exists. Despite several limitations of the method and even questionable credibility at times, it has been in continuous use for the simple reason that it works fairly well at the field level.



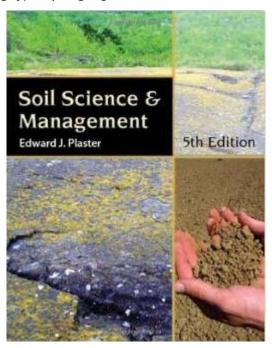
#### **Soil Science and Management**

by Edward Plaster

Publisher: Cengage Learning; 5 edition (May 22, 2008)

Language: English

ISBN-10: 1418038652 ISBN-13: 978-1418038656



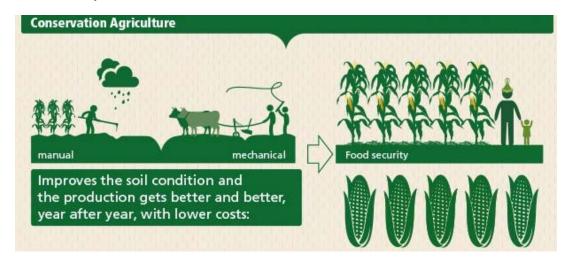
Soil Science and Management, fifth edition, emphasizes the human interaction with and effect on soils, rather than treating the soil as an independent element. Non-technical and easy-to-understand, Soil Science and Management, fifth edition teaches the essentials of soils from the perspective of farmers, horticulturalists, environmentalists and other who are concerned about how soils work and how they are used more effectively. An emphasis on management and the sustainable use of soil and water resources makes it especially relevant to these audiences. The inclusion of nutrient management, best practices and relevant legal issues and government programs make this text a practical application for students. The images have been updated and are now in full color, reinforcing the content contained in the text.





#### Top 5 need-to-knows about Conservation Agriculture

Facing climate change and nine billion mouths to feed by 2050, Conservation Agriculture is key to the future of food security.



30 Jul 2014 - In the face of changing weather driven by climate change and the increasing demand for food, Conservation Agriculture (CA) aims to achieve sustainable and profitable agriculture and improve farmers' livelihoods. Here are five things you need to know.

#### 1. CA observes three main principles that you should remember

Direct seeding involves growing crops without mechanical seedbed preparation and with minimal soil disturbance since the harvest of the previous crop.

A permanent soil cover is important to: protect the soil against the deleterious effects of exposure to rain and sun; provide the micro and macro organisms in the soil with a constant supply of "food"; and alter the microclimate in the soil for optimal growth and development of soil organisms, including plant roots.

The rotation of crops is not only necessary to offer a diverse "diet" to the soil micro organisms, but as they root at different soil depths, they are capable of exploring different soil layers for nutrients.





#### 2. CA helps fight climate change

Only because the effects of climate change are being felt more and more, it does not mean we should give up on efforts to reduce greenhouse gas emissions (GHG). With the increasing soil organic matter, the soils under Conservation Agriculture can retain carbon from carbon dioxide and store it safely for long periods of time.

The consumption of fossil fuel for agricultural production is also significantly reduced under CA and burning of crop residues is completely eliminated, which also contributes to a reduction of GHG release.

#### 3. CA provides small-scale farmers with diversification opportunities

CA has direct impacts which have the potential to turn around the daily and seasonal calendar and in the long term change the rhythm of farmers' family because of the reduced labour requirements for tillage, land preparation and weeding. More time availability offers real opportunities for diversification options such as for example poultry farming or on-farm sales of produce, or other off-farm small enterprise developments.

FAO argues that support should be given to smallholders to scale-up production. This support should include legal land tenure, global policies for a level playing field, access to capital and markets, structured training, and investment in technology and infrastructure.

#### 4. CA helps lower farm power and reduces labour

One of the most noticeable changes for the farmer is the reduced requirement for farm power and labour. CA helps lower the overall requirement for farm power and energy for field production by up to 60 % compared to conventional farming.

This is due to the fact that the most power intensive operations, such as tillage, are eliminated. Additionally equipment investment, particularly the number and size of tractors, is significantly reduced. This effect applies equally to small-scale farmers using only hand labour or animal traction.

#### 5. Everyone has a role to play

Maintaining the momentum of growth in agricultural productivity will remain crucial in the coming decades as production of basic staple foods needs to increase by 60 percent if it is to meet expected demand growth.

Food is one of our most basic needs, so be it reducing food loss and waste, eating lower-impact diets or investing in sustainable agriculture—such as conservation agriculture—countries, companies, and



consumers can make a difference.

Copy from FAO Website at: <a href="http://www.fao.org/zhc/detail-events/en/c/238478/">http://www.fao.org/zhc/detail-events/en/c/238478/</a>





#### WASWAC MEMBERSHIP APPLICATION/RENEWAL FORM (Issued 120501)

(For applicants from all countries)

Name: (Ms./Mrs./Mr./Prof./Dr.)			Gender: $\Box F \Box M$		
Institution:					
Postal address:					
State/Province:					
Phone:	Fax:				
Emails (Please give at least 2 addresses to en	nsure uninterrupted contact): (1)				
(2)	(3)				
My specialized field(s):					
Please sign me up for the WASWAC me	embership in category*: □1(I	M)□2(LN	M)□3(OM)□4(SM&GM)		
Membership for the year(s)	@US\$	=	US\$		
Donation for developing country	membership, etc.		US\$		
Donation to the Moldenhauer Fu	nd		US\$		
		Total	US\$		

- \*Membership categories & rates from July 18, 2005, amended March 3, 2007 and March 4, 2010.
- **1.** IM (Individual membership): US\$20 for 5 years for developing countries (In China, members pay 130 yuan RMB); US\$40 for 5 years for developed countries and persons working in international organizations worldwide.
- **2.** LM (Life membership): US\$80 for developing countries (In China, members pay 520 yuan RMB); US\$160 for developed countries and persons working in international organizations worldwide. Persons who have passed their 60<sup>th</sup> birthday pay only half of these LM rates.
- **3.** OM (Organization membership): For universities, research and implemental institutions, government agencies, NGOs, societies, associations and international organizations, etc. Persons belonging to an Organization member will receive the same online products and services as the other two above categories: \$100/year for an organization with up to 150 persons; \$150/year for an organization with up to 300 persons: \$200/year for an organization with up to 500 persons; and \$10/year for an additional 100 persons or part thereof.
- **4.** SM&GM (Student membership): US\$5/year worldwide, to be purchased to give to colleagues, friends, students, etc.

▲ How and where to submit this form and the money: You may send this form by e-mail (preferred), fax or post – and membership due – to:

For sending money by foreign wires through a bank, please give the following information to your bank:

Name of Receiver (A/C Holder's Name): Liu Xiaoying

**Bank Name and Address:** Bank of China Beijing Branch, No. 2 Chao Yang Men Nei Da Jie, Dongcheng District, Beijing, 100010, P R China

A/C NO.: 3467 5879 1740; Swift code: BKCH CN BJ 110

Message to write on the Bank Sheet: WASWAC Membership due for Ms./Mrs./Mr./Prof./Dr. ......, Country ........

**NOTE: 1.** Do not deduct the bank fee from the amount of money to send. **2.** For sending money by wire/bank transfer or check please add US\$7 per transaction to compensate for the charge at the receiving bank in Beijing. This additional charge does not apply for **WESTERN UNION** or any payment of US\$50 or more.