



# Bangladesh Academy of Sciences NEWSLETTER

Vol. 8 No. 2, May- August 2019

## NATIONAL EVENT

### I. Prof. Dr. M Shamsher Ali, Council Member of the TWAS-CASAREP

Prof. Dr. M Shamsher Ali, Past President, BAS and Fellow, BAS and TWAS, has been elected the member of TWAS-Central and South Asia Regional Partner (CASAREP) for the period 2019-2020 at its meeting held on 29 November 2018 at Trieste, Italy.



### II. Academy Lecture on "Graph Algorithms in Engineering, Biology and Social Sciences" by Professor Dr. Md. Saidur Rahman, Fellow, BAS, 04 May 2019

Bangladesh Academy of Sciences (BAS) organized an Academy Lecturer on Graph Algorithms in Engineering, Biology and Social Sciences presented by Dr. Md. Saidur Rahman, Fellow, BAS and Professor of the Dept. of Computer Science and Engineering (BUET) at the Graduate Seminar Room of the department on 04 May 2019 at 3:00 pm.

Prof. Rahman in his talk highlighted some of his interesting research works on graph algorithms. At the very outset he showed pictures of computer networks, printed circuit boards, VLSI chips, some civil engineering and architectural structures, protein-protein interaction

networks, RNA secondary structures, social networks and relief works of an NGO. He mentioned that each of those examples is a graph or an application of a graph. Then he formally defined a graph with the help of a diagram of a computer network and highlighted the usefulness of graph algorithms and graph drawing algorithms.



*Presentation by Prof. Dr. Md. Saidur Rahman*



*Participating Scientists at the Academy Lecture*

Prof. Rahman illustrated the applications of graph drawing algorithms in several VLSI floor planning and architectural floor planning with beautifully animated figures and

explained the outline of those algorithms in a easy-to-understand way to the audience from diverse disciplines. Prof. Rahman showed an application of graph drawing in finding a good transportation route which is useful in megacity planning or robot movement planning in an environment with obstacles.

He showed how graph algorithms are used to solve individual haplotyping problem in DNA recognition. He also introduced a simple concept called “pairwise compatibility graphs” which has practical applications in phylogenetic tree construction. Prof. Rahman discussed the rigidity theory with its applications in civil engineering construction as well as protein structure analysis.

Social networks have become very popular now-a-days. Prof. Rahman illustrated some techniques to analyze social networks for finding communities, influential persons, critical persons etc. using graph algorithms. Showing a relief distribution activity, he explained how humanitarian aid networks can be constructed using graph algorithms for efficient and timely distribution of relief goods after a disaster. He also showed some applications of graphs in solving problems in business area.

Finally he mentioned the contribution of Bangladesh Academy of Sciences in algorithmic research by discussing the success of the conference WALCOM. He acknowledged the contribution of his supervisor Professor Takao Nishizeki, a foreign fellow of BAS, with heartfelt gratitude and also thanks to all of his co-authors and students including four Ph. D. students. Prof. Rahman expressed his gratitude to BAS for organizing the event.

Prof. Dr. Z N Tahmida Begum, Treasurer, BAS presided and Prof. Dr. M Shamsher Ali, past President of the Academy was the Chief Guest at the Lecture. BAS Fellows, Faculty Members and students in total 100 participants were present at the lecture.

Prof. Dr. M Shamsher Ali in his speech explained the mystery of the universe with triangular graph algorithm. Prof. Dr. Z N Tahmida Begum congratulated Professor Rahman for his presentation with a new horizon of knowledge in application of Graph Algorithm in the field of Engineering, Biology and Social Sciences.

## BAS-USDA Endowment Program

### Day-long On-the-Spot Review of initially screened 78 project proposals under 4th Phase

The Technical Advisory Committee (TAC), BAS-USDA Endowment Trust in its 59th meeting held on 19 March 2019 selected 78 project proposals (PPs) for independent review by the expert scientists of the relevant fields. In response to a request of BAS the selected reviewers came to the office of the Academy on 21, 23, & 30 July 2019 and reviewed the project proposals and recorded their comments in a prescribed format of BAS-USDA Endowment Program.

The purpose of this review was to select awardees of BAS-USDA Research Grant 2019.

Prof. Dr. Mesbahuddin Ahmed, Secretary, BAS gave the introductory speech of the inaugural session. Prof. Dr. Zahurul Karim, Chairperson, TAC explained the purpose of the on-the-spot review and expected the reviewers to put their elaborative review comments.

In her concluding remarks, Prof. Dr. Z N Tahmida Begum, Treasurer, BAS thanked all reviewers for providing their valuable comments on the project proposals and spending time in the review purpose.



*On-the-spot review of BAS-USDA project proposals going on*



*Inauguration of on-the-spot review meeting*



## Project Monitoring of selected BAS-USDA

1. Prof. Dr. Md. Anwar Hossain, Dept. of Microbiology, University of Dhaka (currently Vice Chancellor, Jessore University of Science & Technology) has been implementing the research project entitled “Bacterial poultry diseases in Bangladesh: Implementation of Cost-Effective pathogen detection method and a strategic disease management program: Isolation and evaluation of biofilm forming probiotics strains for fisheries and poultry products – a sustainable technology for food safety issues in Bangladesh” under 3rd Phase of BAS-USDA Endowment Program. Prof. Dr. K M Sultanul Aziz, Fellow, BAS & Member, TAC, BAS-USDA Endowment Program and Mr. Md. Mokshead Ali, Program Manager, BAS-USDA Endowment Program monitored the project activities in Technical and Financial aspects on 25 July 2019. A PowerPoint presentation on the on-going activities of the project so far carried out was given by PI Prof. Dr. Md. Anwar Hossain and Co-PI Dr. Munawar Sultana. The details of the project activities were explained elaborately by them. Then the monitoring team visited the lab activities.



*Lab visit by the Monitoring Team at the Dept. of Microbiology, DU*

2. Dr. Jahangir Alam, Chief Scientific Officer, National Institute of Biotechnology, Ganakbari, Ashulia, Savar, Dhaka has been implementing the research project entitled “Diversity of Myxovirus resistant (Mx) gene and its relation with avian influenza infection in poultry”.

Dr. Md. Abdul Alim, Senior Scientific Officer, National Institute of Biotechnology, Ganakbari, Ashulia, Savar, Dhaka has been implementing the research project entitled “Identification of Single Nucleotide Polymorphisms (SNPs) as molecular marker to improve the milk production traits in Bangladeshi Dairy Cattle” under 3rd Phase. Major General (Rtd.) Prof. Dr. ASM Matiur Rahman, Fellow BAS & Member, TAC, Dr. Khan Shahidul Huque, Member, TAC, Mr. Md. Mokshead Ali, Program Manager and Mr. Md. Habibur Rahman, Finance & Accounts Officer, BAS-USDA Endowment Program monitored the project activities in technical and financial aspects on 08 August 2019.

3. An extensive PowerPoint presentation on the on-going project activities so far carried out was given by the Principal Investigators to the visiting team. The entire presentation and discussion was actively participated by relevant scientists and researchers. The Principal Investigators explained all the on-going research activities and the findings so far carried out.



*Presentation and discussion session at NIB*



*At the end of monitoring*

## INTERNATIONAL EVENT

### I. Nomination of TWAS Young Affiliates 2019 by the Academy

TWAS-CASAREP requested BAS to nominate young scientist below 40 for TWAS Young Affiliates 2019. The announcement was circulated to all Fellows and uploaded on BAS website. Total 12 applications were received. The selection committee in a meeting selected the following 7 young scientists for nomination:

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### II. Nomination of Prof. Dr. Md. Saidur Rahman for TWAS Regional Prize 2019

In response to the request from Prof. Dr. V. Krishnan, Coordinator, TWAS-CASAREP for nominating suitable candidates for 2019 TWAS Regional Prize, Dr. Md. Saidur Rahman, Fellow, BAS and Professor of the Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology (BUET) was nominated by the Academy for the TWAS Region Prize 2019.

### III. Distribution of travel support to the participants of Lindau Nobel Laureates Meeting 2019, 30 June–5 July 2019, Germany.

The BAS Council (July 2016–June 2019) in its 26th meeting held on 02 April 2019 took the following decision regarding the matter:

The meeting discussed the matter and approved BDT 1,20,000/- to each of 4 candidates from the BAS-NABIC Young Scientist Award fund. The participants will be instructed to submit a report on their participation to the Academy.



*Distribution of grants to candidates*

The names of the participants are:

1. **Nure Alam Chowdhury (Sujan)**  
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The Council distributed a cheque of Tk. 120,000/- (One lac twenty thousand) only from the BAS-NABIC Young Scientist Fund to each of the participants of the Lindau Nobel Laureates Meeting 2019, 30 June–5 July 2019, Germany.

#### **IV. Invitation to attend the Annual Session of the Sri Lanka Association for Advancement of Science (SLAAS) 2019, 2-6 December 2019, Sri Lanka**

Professor Preethi Udagama, General President, SLAAS has informed the President, BAS that the Annual Session of the SLAAS would be held during 2-6 December 2019 in Sri Lanka. The theme of the conference is “Biotechnology for a Sustainable Future”. Professor Udagama, General President, SLAAS has invited the President, BAS or a representative to grace the inauguration of the Annual Session and other events.

The Council discussed the matter and nominated the following Fellow to attend the Annual Session of the SLAAS.

Prof. Dr. Haseena Khan  
Dept. of Biochemistry and Molecular Biology  
University of Dhaka  
Dhaka 1000

#### **V. Meeting with Coordinator, TWAS-CASAREP, Bangalore, India on 6-8 July 2019**

As per decision of the 1st meeting of the organizing committee of BAS-TWAS-CASAREP Young Scientist Meeting 2019 held on 17 June 2019 a team composed of Prof. Dr. M Shamsher Ali, Prof. Dr. Haseena Khan and Dr. M A Mazed visited the office of TWAS-CASAREP, Jawaharlal Nehru Centre for Advanced Scientific Research

Jakkur, Bangalore-560 064, India during 5-8 July 2019. They discussed with Prof. V. Krishnan the necessary matters related to organization of BAS-TWAS-CASAREP Young Scientists Conference 28-30 September 2019 in Dhaka, Bangladesh.

Gist of the discussions Prof V. Krishnan, Co-ordinator, TWAS-CASAREP with Prof. M. Shamsheer Ali, Dr. M.A. Mazed and Prof. Dr. (Ms) Haseena Khan of Bangladesh Academy of Sciences on Saturday 6th July 2019 at JNC Guest Rooms, IISc Campus, Bangalore, India is presented below:

#### Participants in the discussion:

TWAS-CASAREP, Bangalore, India

Prof V Krishnan  
Mr. A. Srinivasan

Bangladesh Academy of Sciences (BAS), Dhaka

Prof. M. Shamsheer Ali  
Prof. (Ms) Haseena Khan  
Dr. M.A. Mazed

Prof V Krishnan, on behalf of TWAS-CASAREP extended warm welcome to Prof. M. Shamsheer Ali, Prof. (Ms) Haseena Khan and Dr. M A Mazed and thanked them for sparing their time for preliminary discussion regarding organization of TWAS-CASAREP Young Scientists Conference/Workshop at Dhaka, Bangladesh, under the auspices of Bangladesh Academy of Sciences. Following issues were discussed and finalized:

Date of Conference	→	28th to 30th September 2019
Duration of Conference	→	2 ½ days
Venue of conference	→	Dhaka
Title of Conference	→	Impact of Climate Change – A way forward

**Participants:** Young Scientists (40 years and below) from S&T lagging countries (countries mentioned herein) will be invited to participate. A total of 15-20 participants can be invited, of which, 30% should represent women young scientists. The countries are (a) Bangladesh (b) Sri Lanka (c) Nepal (d) Bhutan (e) Maldives and (f) Kyrgyzstan.

**Travel support:** TWAS CASAREP will extend travel support (by issuance of E tickets) to the selected participants upon receipt of copy of their Bangladeshi Visas.

**Resource persons:** Bangladesh Academy of Sciences (BAS) will identify resource personnel/speakers for the above Conference/Workshop from Bangladesh and provide suitable transport/travel support. TWAS CASAREP will interact with Prof S K Satheesh, Divecha Centre for Climate Change (DCCC) for suggestions regarding the meeting. The number of participants from Bangladesh can be extended depending on local interests and field experiences.

#### Accommodation, local transport and local hospitality

BAS will provide accommodation (to participants and resource persons) during the conference dates in Dhaka, apart from taking care of their airport transfers and local hospitality

#### Contract

- TWAS-CASAREP & BAS would enter into contract of agreement for organizing the above conference. TWAS-CASAREP will allocate USD 10,000 to BAS for organizing the above Conference in Dhaka, apart from taking care of travel support for Young Scientists from S&T lagging countries.
- Upon signing of contract, TWAS-CASAREP will release 80% of the contracted amount (8000 USD) to BAS for successful organization of the conference. The balance 20% (USD 2000) will be released as 2nd and final instalment upon receipt of audited statement of expenditure from BAS with copies of supporting vouchers/bills.
- BAS will provide necessary Bank details to enable TWAS-CASAREP to effect transfer of funds. The purpose of transfer of funds to BAS will be stated as “Academic purpose – Organization of meeting” in Dhaka.

#### Further Discussion :

- a) Keeping in mind the theme of the Conference, TWAS-CASAREP will arrange to send list of young



scientists from S&T lagging countries (along with their CV, publications, contact details etc., ) to BAS to enable them to select the candidates and inform TWAS CASAREP for issue of E tickets.

- b) TWAS-CASAREP will also interact with Divecha Centre for Climate Change (DCCC), IISc Campus, Bangalore to explore possibility of identifying young scientists' participation. TWAS-CASAREP will also get in touch with Dr. Sudharma, Paradeniya Univesity, Kandy, Sri Lanka to nominate suitable young scientists and possible resource persons. This would enable country's experiences.
- c) TWAS-CASAREP will coordinate with CICS (Centre for Int'l Cooperation in Science), Chennai to obtain list of young scientists from SAARC Countries for Dhaka conference and forward to BAS for inviting those young scientists.
- d) TWAS-CASAREP will coordinate with **CURRENT SCIENCE** (located within Indian Academy of Science, Bangalore), for giving wide coverage of the Conference. If need be, TWAS CASAREP will extend travel support to one person from Current Science to cover the event at Dhaka
- e) BAS will issue invitation letter to selected candidates/ young scientists for visa purposes etc. The invitation letter will mention venue and duration of the conference, travel support by TWAS CASAREP and local hospitality (including accommodation, airport transfers etc.) by BAS.
- f) BAS will draw a tentative programme for discussions with TWAS-CASAREP.
- g) Discussion was held in the meeting, according to TWAS UNESCO guidelines, for the matter of dissemination of information pertaining to conference, BAS will use electronic media and avoid printing of materials, brochures etc.
- h) BAS will also ensure that it would prominently display in all its correspondence/conference venue, acknowledging the SIDA funds received by it

through TWAS-CASAREP, for organizing this Conference/ Workshop in Dhaka.

- i) BAS will interact with TWAS-CASAREP for successful organization of the Conference. Mr Srinivasan of TWAS-CASAREP will interact/ coordinate with BAS on regular basis regarding logistics of the conference which also includes issue of E tickets to participants.

The meeting ended with exchange of pleasantries and vote of thanks.

## UPCOMING EVENTS

### I. BAS-TWAS-CASAREP Young Scientists Conference 2019, 28-30 September 2019, Dhaka, Bangladesh

Bangladesh Academy of Sciences (BAS) and TWAS-CASAREP with the financial assistance of UNESCO-TWAS and SIDA are planning to organize a Young Scientists Conference (below 40 years) with the theme **Impact of Climate Change – a Way Forward** during 28-30 September 2019, Dhaka, Bangladesh. TWAS-CASAREP will provide bothway travel supports and BAS will provide local hospitalities (accommodation, food and local transports).

### II. 4th Young Scientists Congress, 13-15 December 2019, Dhaka, Bangladesh

Bangladesh Academy of Sciences (BAS) will organize the 4th Young Scientists Congress to be held during 13-15 December 2019 at the Auditorium of National Museum of Science and Technology, Agargaon, Dhaka 1207. The theme of the workshop **Young Scientists for Achieving SDGs** About 300 young scientists, researchers, teachers and students from all over Bangladesh the universities, R&D institutions and other organizations are expected to attend the workshop. The senior teachers, scientists and researchers who are renowned for their academic and professional achievement would be requested to attend the congress as invited speakers. There will be a keynote speech and two plenary presentations.

There will be following four parallel sessions:

*Program Sections:*

- i. Physical and Chemical Sciences
- ii. Agricultural and Biological Sciences
- iii. Health, Medicine and Nutrition Sciences
- iv. Mathematics, engineering and ICT Sciences

**Poster presentation:**

In each section top 3 best papers and 3 top posters presented will be rewarded with prize.

The young scientists from all over Bangladesh are expected to register themselves for the congress.

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Dr. M A Hamid Miah	Editor
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