



PGIS *News*

Volume 15, 2014, Nos. 1 - 4

Printed in May 2015

Quarterly Update of the Activities and Progress of the Postgraduate Institute of Science (PGIS),
University of Peradeniya, Sri Lanka.

ISSN 1391 - 5754

PGIS RESEARCH CONGRESS 2014



Chief Guest, Prof. Atta-ur-Rahman (FRS, NI, HI, SI, TI, UNESCO Science Laureate, President of Pakistan Academy of Sciences, and Professor Emeritus and Patron of International Centre of Chemical and Biological Sciences, University of Karachi, Pakistan) and Prof. H M D Namal Priyantha (Director, PGIS) addressing the inaugural session of the 'PGIS Research Congress 2014' held on 10th and 11th October 2014 at the PGIS. Prof. Atta-ur-Rahman delivered the Keynote Address on 'The Wondrous World of Science'. There were about 270 participants including postgraduate students, academics and researchers attending the congress. Over 140 presentations were made during the Technical Sessions covering the following five themes: Earth and Environment Sciences; Information & Communication Technology, Mathematics and Statistics; Life Sciences; Physical Sciences; Science Education.

4th REGIONAL TRAINING COURSE ON 'DISASTER RESILIENT LEADERSHIP'



Participants of the 4th Regional Training Course on 'Disaster Resilience Leadership' held from 17th to 21st March 2014 at the Earl's Regency Hotel, Kandy.

SAARC TRAINING PROGRAMME ON 'POST DISASTER NEEDS ASSESSMENT'



Participants at a technical session of the Training Programme on 'Post Disaster Needs Assessment' held from 13th to 17th October 2014 at the PGIS.



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(PGIS)**

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CONTENTS

| | |
|--|----|
| <i>Present Status of the PGIS</i> | 3 |
| <i>"Killer" Landslides of Sri Lankan Central Highlands</i> | 4 |
| <i>Workshops, Short Courses, Training Programmes, Symposia, etc.</i> | 5 |
| <i>M.Sc. Degree Programmes 2014/2015</i> | 7 |
| <i>Postgraduate Diploma Programmes 2014/2015</i> | 8 |
| <i>A visit by a Cambodian Delegation</i> | 8 |
| <i>Ph.D. and M.Phil. Degrees Awarded</i> | 8 |
| <i>Young Researchers' Forum (PGIS-YRF)</i> | 10 |
| <i>PGIS Activities in Focus</i> | 13 |
| <i>M.Sc. Degrees Awarded</i> | 21 |
| <i>Postgraduate Diplomas Awarded</i> | 28 |

PGIS News

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Present Status of the Postgraduate Institute of Science

A Message from Prof. H M D Namal Priyantha, Director, PGIS

The Postgraduate Institute of Science (PGIS) has been relentlessly expanding since its inception in 1996. The PGIS, at present, conducts about twenty M.Sc. programmes and a few postgraduate diploma programmes, and administers M.Phil. and Ph.D. programmes through ten Boards of Study – Biochemistry & Molecular Biology, Chemical Sciences, Earth Sciences, Environmental Science, Mathematics, Physics, Plant Sciences, Science Education, Statistics & Computer Science and Zoological Sciences, covering a wide spectrum of scientific disciplines. The total number of students registered at the PGIS is over 1600 at present. Additionally, the PGIS conducts short-term programmes, some of which are tailor-made, to fulfill the needs of various sectors in the country. Teaching and research activities of the PGIS are performed in line with its vision, “*To be an internationally renowned centre of excellence in Asia for postgraduate education and research in science*”.

Among the many accomplishments of the PGIS in the year 2014, it is noteworthy to state the following:

- Over 200 students were qualified to receive postgraduate degrees at the General Convocation - 2013 of the University of Peradeniya, held in May, 2014.
- Third international symposium on Water Quality and Human Health was held in June, 2014 with about 40 presentations based on state-of-the-art research.
- The first PGIS Research Congress was held in October, 2014 with more than 140 research presentations made on five themes: Earth and Environmental Sciences; ICT, Statistics and Mathematics; Life Sciences; Physical Sciences; Science Education
- The Young Researchers’ Forum of the PGIS launched the inaugural issue of its annual magazine consisting of more than 20 scientific articles.
- About 30 short-term programmes were conducted in various disciplines. Some courses of high demand are:

Basic and advanced short courses in GIS and Applications

National workshop on Scientific Writing

National workshop on Data Handling, Interpretation and Management

It is believed that the quality of a postgraduate student depends on his/her research achievements in addition to theoretical knowledge. Consequently, it is relevant to conduct research to meet the national and international demand which in turn would improve the employability of students upon completion of their respective postgraduate degrees. In this context, the PGIS has taken many steps to strengthen its research capability: Initiation of research laboratories in the areas of Computer Science, GIS & Remote Sensing and Rock & Soil Mechanics, and setting up of an Instrumentation laboratory; Conduct of research conferences; Introduction of an incentive scheme for research publications in reputed journals; Information desk for local patents, etc. Further, many new M.Sc. and short-term programmes are being formulated to expand the services of the PGIS.

Continuous growth of the PGIS through expansion of teaching and research programmes will no doubt further enhance the reputation of the institute nationally and internationally.

"Killer" Landslides of Sri Lankan Central Highlands

Landslides like earthquakes, tsunamis and volcanic eruptions are geological phenomena. The term 'landslide' refers to a significant geological hazard involving downward and outward movement of slope forming soil and rock materials. The moving mass may be produced by falling, sliding or flowing or by a combination of these under gravitational influence. Landslides take place on unstable slopes formed by fractured and weathered rocks in conjunction with other geological hazards such as earthquakes, volcanic eruptions or a hydrologic hazard like floods. They are phenomena, which may be associated with high rainfall, glacial activity, earthquakes, volcanism or even vibrations from tunneling, explosions or movement of heavy vehicles. Some landslides can be slow, subtle and almost undetectable on a short-term basis. In Sri Lanka, landslides trigger generally due to intense rainfall. During periods of daily rainfall of 100 mm or more within a few hours, landslides (or mass movements) occur commonly in certain geologically weak hill slopes of the Central Highlands of Sri Lanka. Landslides consist of slope-forming materials such as natural rock, soils, artificial fills, or combination of these materials. Principal landslide types that occur in Sri Lanka are rock falls, rock slides/slumps, subsidence and earth flows or their combinations. In the Sri Lankan highlands, during periods of excessive precipitation, landslides trigger downward and outward movement of soil and rock debris from a high elevation to a low elevation under the action of gravity along a hill slope gradient, which can generally vary from 5 to 60 degrees. Such landslides are earth flows and they could attain speeds of more than 100 km per hour and extend to several kilometers causing severe destruction to life and property along its path. In geological jargon, these are "killer" landslides, which are reported from time to time with dozens of human casualties.

During the last four decades, subsequent to heavy rainfall, landslides have occurred with increasing frequency in the hilly districts of Matale, Kandy, Badulla, Nuwara Eliya, Ratnapura, Kalutara, Kegalle, Galle, Matara and Hambantota. Although high daily rainfall (about 100 to more than 500 mm in 24 hours) is the triggering factor of these mass movements, the availability of weak ground geological conditions is necessary. The Precambrian banded and jointed (or fractured) meta-sedimentary landslide-generating rocks such as weathered gneisses and migmatites are predominantly present in the highland terrain of Sri Lanka in association with quartzite, marble and charnockite. The gneisses are susceptible to sliding particularly when they develop into thick (10 to 70 cm or more) soil profiles containing high amounts of slippery clay-formed due to weathering of minerals such as feldspar and mica on steep scarp slopes or mild dip slopes of Sri Lankan highlands over a long periods of time.

Landslides once developed can remain dormant and stable for very long periods of time. Such locations are abundant in the Sri Lankan highlands and are recognized easily by characteristic hummocky topography with loose colluvial soils associated frequently with irregular accumulations of water. These colluvial sediments commonly occur as foothills on steep scarp slopes associated with irregular drainage. Such old landslides can get reactivated due to disturbances caused by nature or man or both.

It has been noted that some of the recent landslides on the hill slopes of different districts of Sri Lanka are due to reactivation of old landslides due to indiscriminate constructions. Such old landslides had earlier regained a stable position (of equilibrium) with time due to overgrown vegetation and natural sedimentary consolidation processes before subsequent disturbances. New or recent landslides also occur on fresh rocks due to changing hydro-geological/climatologic conditions or man's intervention.

Kapila Dahanayake

Professor Emeritus (Geology)

University of Peradeniya

WORKSHOPS, SHORT COURSES, SYMPOSIA, ETC.

| Activity | Coordinator(s) (Board of Study) | Date(s) | No. of Participants |
|--|--|-----------------------|--------------------------------|
| Workshop on Research Methods and Data Analysis using SPSS | Dr. Y P R D Yapa (Statistics and Computer Science) | Jan. 2, 16 and 23 | 25 |
| 3 rd National Workshop on Scientific Writing | Dr. N C Bandara (PGIS) | Jan. 30 - 31 | 70 |
| 55 th Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | Feb. 17 - 22 | 29 |
| 1 st National Workshop on Data Management, Analysis and Interpretation | Dr. N C Bandara (PGIS) | Feb. 20 - 21 | 62 |
| 16 th Advanced Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | March 3 - 8 | 20 |
| 4 th National Workshop on Scientific Writing | Dr. N C Bandara (PGIS) | March 6 - 7 | 77 |
| 4 th Regional Training Course on Disaster Resilient Leadership Organized in collaboration with BMGF, TU, DRLA and ADPC* at Earls Regency Hotel | Prof. B S B Karunaratne Dr. Jagath Gunatilake (Earth Sciences) | March 17 - 21 | 37 |
| 56 th Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | March 31 - April 5 | 29 |
| 57 th Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | April 21 - 26 | 26 |
| 17 th Advanced Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | June 23 - 28 | 13 |
| 3 rd International Symposium on Water Quality and Human Health Organized in collaboration with the Faculty of Medicine, University of Peradeniya, Institute of Fundamental Studies, Sri Lanka, PLAN Sri Lanka, International Research Center, University of Peradeniya and in technical association with CAFET INNOVA Technical Society, INDIA | Dr. S Yatigammana Mr. C Wijesundara (Environmental Science) | June 27 - 28 | 102 |
| 5 th Regional Training Course on Disaster Resilient Leadership Organized in collaboration with BMGF, TU, DRLA and ADPC*, Bangkok, Thailand | Prof. B S B Karunaratne Dr. Jagath Gunatilake (Earth Sciences) | July 7 - 11 | 35 |
| Workshop on Mushroom Production Technology | Dr. M Daundasekara (Plant Sciences) | July 18 | 28 |
| 58 th Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | July 28 - Aug 2 | 20 |
| Short Course on ISO 14001 Organized in collaboration with the Centre for Environmental Studies, University of Peradeniya at the Department of Geology | Dr. Jagath Gunatilake Dr. S P Nissanka (Earth Sciences) | Aug. 23 - 24 | 143 |

| Event | Coordinator(s) (Board of Study) | Date(s) | No. of Participants |
|---|--|-------------------|--------------------------------|
| Short Course on Human Resources Management Organized in collaboration with the Centre for Environmental Studies, University of Peradeniya and conducted at the Department of Geology | Dr. Jagath Gunatilake (Earth Sciences) | Aug. 30 - 31 | 151 |
| Short Course on Human Resources Management Organized in collaboration with the Centre for Environmental Studies, University of Peradeniya and conducted at the Department of Geology | Dr. Jagath Gunatilake Dr. S P Nissanka (Earth Sciences) | Sep. 13 - 14 | 154 |
| GIS Training Programme on Landscape Archaeology | Dr. H M T G A Pitawala Dr. Jagath Gunatilake (Earth Sciences) | Oct. 3, 6 - 9 | 35 |
| PGIS Research Congress 2014 Organized in collaboration with the University Grants Commission (UGC), International Research Center (InRC), University of Peradeniya, Analytical Instruments, Techno Instruments (Pvt) Ltd, Bitumix (Pvt) Ltd, People's Bank and Bank of Ceylon | Organizing Committee Prof. S R Kodituwakku (Congress Coordinator) Dr. R J K U Ranatunga (Congress Secretary) (PGIS) | Oct. 10 - 11 | 264 |
| SAARC Training Programme on 'Post Disaster Need Assessment' Organized in collaboration with the Disaster Management Center (DMC) and SAARC-DMC | Dr. Jagath Gunatilake (Earth Sciences) | Oct. 13 - 17 | 36 |
| Workshop on Plant Defense | Dr. Malkanthi Daundasekara (Plant Sciences) | Oct. 31 | 23 |
| Advanced Course in Organic Chemistry | Prof. U L B Jayasinghe (Chemical Sciences) | Nov. 8 - May 2015 | 18 |
| Workshop for National Capacity Building on "Earth Observation Technologies for Flood Risk Mapping, Modeling and Management" Organized in collaboration with the International Water Management Institute (IWMI), United Nations Office for Outer Space Affairs (UNOOSA) and Disaster Management Centre (DMC) | Dr. Jagath Gunatilake (Earth Sciences) | Nov. 18 - 21 | 25 |
| 59 th Short Course on GIS and Applications | Dr. Jagath Gunatilake (Earth Sciences) | Dec. 1 - 6 | 19 |
| 5 th National Workshop on Scientific Writing | Dr. N C Bandara (PGIS) | Dec. 4 - 5 | 80 |
| Workshop on Electrochemical Water Treatment | Dr. K G N Nanayakkara (Environmental Science) | Dec. 12 | 54 |
| Workshop on 'Intellectual Property and Patents' (Patent it) Organized in collaboration with the National Intellectual Property Office of Sri Lanka (NIPO) | Dr. N Suranjith Gama-Arachchige (PGIS) | Dec. 19 | 69 |
| Exhibition on Disaster Resilient Leadership in Hambanthota Organized as an activity parallel to '10 th Anniversary of Tsunami 2004' | Prof. B S B Karunaratne (Earth Sciences) | Dec. 26 | ~30 |
| | | Total | 1674 |

* BMGF - Bill and Melinda Gates Foundation, TU - Tulane University, DRLA - Disaster Resilient Leadership Academy and ADPC - Asian Disaster Preparedness Centre

M.Sc. DEGREE PROGRAMMES 2014/2015

| M.Sc. Programme (Date of commencement) | Board of Study | Coordinator(s) | No. of students registered |
|---|------------------------------------|--|--|
| Clinical Biochemistry (30.8.2014) | Biochemistry and Molecular Biology | Prof. R Sivakanesan (Dept. of Biochemistry, UPDN) | 22 |
| Experimental Biotechnology (12.7.2014) | | Prof. J G S Ranasinghe (Dept. of Biochemistry, UPDN) Dr. P Samaraweera (Dept. of Molecular Biology and Biotechnology, UPDN) | 24 |
| Analytical Chemistry (3.5.2014) | | Prof. M M A N Navaratne (Dept. of Chemistry, UPDN) | 35 |
| Industrial Chemistry (3.5.2014) | Chemical Sciences | Dr. M Y U Ganehenege (Dept. of Chemistry, UPDN) Dr. C S Kalpage (Dept. of Chemical Engineering, UPDN) | 12 |
| Nanoscience and Nanotechnology (3.5.2014) | | Prof. R M G Rajapakse (Dept. of Chemistry, UPDN) Dr. R G S C Rajapakse (Dept. of Molecular Biology and Biotechnology, UPDN) Dr. A C A Jayasundera (Dept. of Chemistry, UPDN) | 30 |
| Environmental Science (2.5.2014) | | Environmental Science | Dr. G W A R Fernando (Dept. of Physics, Open University, Nawala) |
| Industrial Mathematics (3.5.2014) | Mathematics | Dr. M I M Ishak (Dept. of Engineering Mathematics, UPDN) | 18 |
| Medical Physics (28.2.2014) | Physics | Dr. C P Jayalath (Dept. of Physics, UPDN) Mr. A Dilip Kumara (Cancer Unit, Teaching Hospital, Karapitiya) | 16 |
| Physics of Materials (28.2.2014) | | Dr. L R A K Bandara (Dept. of Physics, UPDN) | 35 |
| Medical Microbiology (18.7.2014) | Plant Sciences | Dr. C L Abayasekara (Dept. of Botany, UPDN) Prof. V Thevanesam (Dept. of Microbiology, UPDN) | 29 |
| Science Education (16.2.2014) | | Science Education | Dr. W D Chandrasena (Science Education Unit, UPDN) Dr. H M S P Madawala Weerasinghe (Dept. of Botany, UPDN) Dr. C V Hettiarachchi (Dept. of Chemistry, UPDN) Dr. D M Samarathunga (Dept. of Mathematics, UPDN) Dr. J P Liyanage (Dept. of Physics, UPDN) |
| Computer Science (3.5.2014) | Statistics and Computer Science | Prof. A A I Perera (Dept. of Mathematics, UPDN) | 69 |
| Applied Statistics (12.7.2014) | | Dr. K Perera (Dept. of Engineering Mathematics, UPDN) | 19 |
| Fish and Wildlife Management (28.6.2014) | Zoological Sciences | Dr. E Rajapaksha (Dept. of Veterinary Clinical Sciences, UPDN) | 11 |
| Total | | | 352 |

UPDN - University of Peradeniya

POSTGRADUATE DIPLOMA PROGRAMMES 2014/2015

| M.c. Programme (Date of commencement) | Board of Study | Coordinator | No. of students registered |
|--|-----------------------|--|---------------------------------------|
| Science Education (16.2.2014) | Science Education | Dr. A R G A M Abeykoon Manike (St. Joseph's Balika Maha Vidyalaya, Kegalle) | 36 |

A VISIT BY A CAMBODIAN DELEGATION

A delegation from the Royal University of Phnom Penh in Cambodia visited the PGIS on 18th and 19th September 2014, to study the feasibility of conducting an M.Sc. programme in Disaster Management in Cambodia. The delegation comprised of Dr. Sok Vanny (Vice Rector/Head of the Delegation), Dr. Yin Soriya (Project Manager/Senior Lecturer), Dr. Seak Sophat (Director, Department of Natural Resource Management) and Miss. Doung Chanmettatchampavieng (Lecturer). Discussions were held with Prof. Atula Senaratne (Vice-Chancellor, University of Peradeniya), Prof. H M D Namal Priyantha (Director, PGIS), Dr. Jagath Gunatilake (Chairman, Board of Study in Earth Sciences) and Prof. B S B Karunaratne (Programme Coordinator, M.Sc. in Disaster Management).

Ph.D. and M.Phil. DEGREES AWARDED in 2014

Degree Awardees

Titles of Theses

Ph.D. – Biochemistry & Molecular Biology

D R Liyanaarachchi

Taxonomy and distribution of hard ticks (Ixodidae) in selected areas in Sri Lanka and significance of the transmission of tick-borne diseases.

Supervisors: Prof. R P V J Rajapakse and Dr. P R M P Dilrukshi

Ph.D. – Chemical Sciences

W P S K Perera

Effects of nanosilver application on physical, mechanical and antibacterial properties of cotton fabrics

Supervisors: Prof. R M G Rajapakse and Prof. B M R Bandara

Ph.D. – Plant Sciences

R M U K Gunarathne

Manilkara hexandra: Ecology of the species and its dieback in Bundala National Park, Sri Lanka.

Supervisors: Dr. G A D Perera and Prof. G Seneviratne

Ph.D. – Zoological Sciences

- I I Hemachandra Diversity, distribution and ecology of termites among selected vegetation types in Kandy and Knuckles regions.
Supervisors: Prof. J P Edirisinghe, Prof. C V S Gunatilleke and Dr. W A I P Karunaratne

M.Phil. – Biochemistry and Molecular Biology

- E A R I E Siriwardhana A study on Chronic Kidney Disease of unknown etiology in Medawachchiya divisional secretariat of North Central province of Sri Lanka.
Supervisors: Prof. P A J Perera, Prof. R Sivakanesan and Dr. T Abeysekara
- H T W Weerakoon Chemical composition, clinical manifestations and aetiopathogenesis of gallstones in a cohort of patients with gallstone disease.
Supervisors: Prof. R Sivakanesan and Dr. S Rosario
- D C R Wijetunge Development of a new strategy to detect protein glycation and assessment of protein glycation inhibitory potential of medicinal plants
Supervisor: Dr. H K I Perera

M.Phil. – Chemical Sciences

- P K D Chaturanga Uptake of heavy metals by non-living biomass and removal of metals by selected plant species
Supervisors: Dr. M C M Iqbal, Prof. H M D N Priyantha and Dr. S S. Iqbal
- D Bopitiya Compositional characteristics, antioxidant efficacy and oxidative stability of dietary oils.
Supervisor: Dr. T Madhujith
- N M Dissanayake Synthesis of covalently linked transition metal macrocyclic complexes suitable for reduction of water and small hazardous molecules like CO₂
Supervisor: Dr. M Y U Ganehenege
- G M A U K Gannoruwa Development of an IR active photocatalyst based on silver oxide and titanium dioxide nanocomposite
Supervisors: Prof. J M S Bandara and Prof. O A Ileperuma

M.Phil. – Earth Sciences

- P G R N I Pussella Assessment of the physical vulnerability of the coastal zone for the impacts of natural disasters and climate changes: a case study in North Western coastal belt, Sri Lanka.
Supervisors: Dr. A A J K Gunatilake, Dr. K R M U Bandara, Mrs. J A S Jayakody and Dr. J L Dammalage

M.Phil. – Physics

- W N S Rupasinghe Synthesis, characterization and applications of polyethylene oxide (PEO) based nano-composite polymer electrolytes and their applications in dye-sensitized solar cells.
Supervisors: Prof. M A K L Dissanayake, Dr. G K R Senadeera and Dr. V A Seneviratne
- W J M J S R Jayasundara Effect of cations on the performance of dye sensitized solar cells with polyacrylonitrile-based plasticized polymer electrolytes containing quaternary ammonium iodides.
Supervisors: Dr. T M W J Bandara, Dr. V A Seneviratne and Dr. L R A K Bandara

M.Phil. – Plant Sciences

- E M S Ekanayake Plant community ecology of Montane rain forests at Dothalugala MAB reserve in the Knuckles Massif, Sri Lanka.
Supervisors: Dr. G A D Perera, Prof. G Senevirathne and Dr. D S A Wijesundara
- P Karunarathne Taxonomy and systematic studies on the genera *Alpinia* Roxb. and *Amomum* Roxb. of the family Zingiberaceae in Sri Lanka.
Supervisors: Prof. D Yakandawala and Dr. P Samaraweera
- R Edirisinghe Occurrence of non-tuberculous mycobacteria in aquatic sources of Sri Lanka, efficacy of chlorination and irradiation for decontamination.
Supervisors: Dr. D R A Dissanayake and Dr. C L Abayasekera
- A M M U Adikari Characterization and some probiotic properties of *Lactobacillus* spp. from curd ('*Deekiri*' and '*Meekiri*') in Sri Lanka
Supervisors: Dr. J A M S Jayathilake, Dr. N B Parahitiyawa, Dr. J K Vidanarachchi and Dr. S P Kodithuwakku

M.Phil. – Statistics and Computer Science

- S Shakeela Performance comparison and enhancement of content-based image retrieval
Supervisor: Prof. S R Kodithuwakku

M.Phil. – Zoological Sciences

- D M N J Dissanayake Faecal assay to determine the reproductive status of captive female Asian elephants.
Supervisors: Prof. Dennis Schmitt and Prof. C V M Santiapillai
- G B R R R Athurupana Activity budget of captive Asian elephants
Supervisors: Prof. Dennis Schmitt and Prof. C V M Santiapillai

YOUNG RESEARCHERS' FORUM (PGIS-YRF)

Young Researchers' Forum (YRF) is the official consortium of researchers registered for postgraduate studies at the PGIS, University of Peradeniya. The forum was established in 2005 at the seminar on "Challenges and Opportunities in Scientific Research for Young Researchers". It is aimed at bringing young researchers together to collaborate, share experiences and knowledge at the early stages of their career.

Executive Committee of YRF (2014/2015)

(Committee was elected at the Annual General Meeting held on 17th June 2014 at the PGIS auditorium.)

- Patron:* Prof. Namal Priyantha (Director, PGIS)
- Senior Treasurer:* Dr. Gehan Jayasooriya
- President:* Mr. Sarath Kumara
- Vice President:* Mr. Sampath Wickramasooriya
- Secretary:* Ms. Shalini Rajakaruna
- Junior Treasurer:* Mr. Priyanga Dharmarathne
- Committee members:* Menaka Ariyaratne, Randika Lakmali, Chandramalika Peries, Akalanka Galappaththi, Chathranga Senarathne, Chathuranga Kumarage, Chathurika Aluwihare, Apsara Wijenayake, Nuwan Karunarathne

Activities carried out in the year 2014:

YRF Career Development Workshop

YRF organized a career development workshop under the theme “Resilient Researcher: Face Challenges with Confidence” where over 100 postgraduate students participated. It was held on 28th January 2014 at the PGIS auditorium.

| <i>Session Topic</i> | <i>Speaker</i> |
|--|------------------------------|
| <i>Goal setting and achieving</i> | <i>Prof. O. A. Ileperuma</i> |
| <i>Management of stress</i> | <i>Mr. Sumana Rathnayake</i> |
| <i>Time management</i> | <i>Mr. Lanka Rasanjana</i> |
| <i>Career development and productivity</i> | <i>Prof. Savithri Kumar</i> |

YRF Personality Development Workshop

A workshop on Personality Development was held on 23rd February 2014 at the PGIS auditorium. Over 70 Ph.D., M.Phil., M.Sc. and undergraduate students attended the workshop. The workshop covered two themes: ‘How to make a CV?’ and ‘How to face an interview?’. The resource person, Mr. Indika Liyanahewage, Manager of Human Resources Department at Trelleborg (Pvt.) Ltd., with years of experience provided a broad view and touched on points that students should be aware of when preparing a *curriculum vitae* and facing an interview.

Colloquium Series

A monthly colloquium series was conducted on general topics of importance to young researchers.

| <i>Topic</i> | <i>Presenter and Affiliation</i> | <i>Date</i> |
|---|---|---------------------|
| <i>Chromatography techniques and sample preparation (SPE, Queches method)</i> | <i>Dr. Nigel Simpson Business Development Manager Agilent Technologies Organized in collaboration with Techno Instruments (PVT) Ltd.,</i> | <i>March 21</i> |
| <i>How to handle stress and emotions?</i> | <i>Dr. Shavindra Dias Faculty of Medicine University of Peradeniya</i> | <i>August 31</i> |
| <i>Know your Intellectual Property Rights</i> | <i>Dr. Manjula Sandirigama Faculty of Engineering University of Peradeniya</i> | <i>September 27</i> |
| <i>Importance of social relationships</i> | <i>Ms. Delia Shelton University of Indiana, USA</i> | <i>October 24</i> |
| <i>Einstein’s life story and his revolutionary ideas in Physics</i> | <i>Dr. Vincent Smith University of Bristol, UK</i> | <i>November 24</i> |

Launching of the Inaugural Issue of the YRF Magazine ‘SCISCITATOR’

Young Researchers Forum (YRF) launched the inaugural issue of their magazine ‘Sciscitator’ on 23rd June 2014. The magazine included 27 refereed articles covering disciplines of Chemical sciences, Geological sciences, Computer sciences, Plant sciences, Environmental science, Biochemical sciences, Mathematical sciences and multidisciplinary areas. The magazine was published as a printed version and an online version accessible via internet. Editorial Board consisting of Prof. Ayanthi Navaratne (Department of Chemistry),

Prof. Saluka R. Kodituwakku (Department of Statistics and Computer Science), Dr. Nalin Suranjith (Department of Botany), Mr. Chaminda Wijesundara (Department of Zoology) and Dr. H. A. Dharmagunawardane (Department of Geology) reviewed the articles submitted. The magazine targets at the research and industrial community in universities, research institutes and industry. The magazine aims to link the general scientific community and the young researchers for the development of research based knowledge in Sri Lanka. The magazine was distributed to the academic staff, undergraduate students of the Faculty of Science and postgraduate students of the PGIS. For those interested, copies of the magazine are also available at the Science Library and PGIS, University of Peradeniya.

YRF NIGHT 2014

As the final event of the YRF committee 2013/2014, YRF organized the ‘YRF NIGHT 2014’ on 23rd June 2014 with various group activities, entertainment, games, etc. Launching of the inaugural issue of the YRF magazine ‘Sciscitator’ was one of the main events of the night. The future activities of the forum were also discussed with the members of academic staff present. The dinner made a perfect mediator for interaction between postgraduate students and staff.

Community Service Project

Fund raising for the Kidney Protection Unit of the Kandy Hospital was carried out during the Esala Perahara, 2014. Donations collected from spectators of Esala Perahera by YRF members participated in this community service project amounted to a substantial amount.

Open Discussion on ‘Applying for Graduate Studies’

An open discussion was organized on the above topic on 29th October 2014 to make undergraduate students aware of postgraduate opportunities overseas and to give them advice and important tips on ‘How to apply for postgraduate scholarships?’. Dr. H.A. Dharmagunawardane, Dr. Udyana Ranathunga, Dr. Dharshana Yapa, Dr. Sumudu Rubasinghe, Dr. Jilushi Dhamunpola and Dr. Shalika Kumburegama were the panelists at the discussion and over 150 undergraduate students took part in the event.

Membership Drive at NIFS

Committee members of YRF including Prof. Namal Priyantha (Patron/YRF) visited the National Institute of Fundamental Studies (NIFS), Kandy on 26th November 2014 and held a meeting with the postgraduate researchers at the institute. They were made aware of the YRF activities and membership applications were distributed to those interested. A representative from NIFS was also appointed to the YRF Executive Committee.

Research Frontiers - Young Researchers’ Camp

A two-day camp was organized for the young researchers at the PGIS on 13th and 14th December 2014. It was a novel and valuable experience for the participants. The academic sessions addressed the following topics.

| <i>Session Topic</i> | <i>Speaker</i> |
|--|---|
| <i>Ethics and legal issues in research</i> | <i>Prof. H M D Namal Priyantha</i> |
| <i>Personal integrity as a graduate</i> | <i>Mr. Sarath Wickramaratne</i> |
| <i>Presentation skills</i> | <i>Dr. Udayana Ranathunga and Ms. Shashi Ellawala</i> |
| <i>Managing references and sources</i> | <i>Dr. Nalin Suranjith</i> |
| <i>Team work and managing conflicts</i> | <i>Dr. Gehan Jayasooriya and Dr. Nilmini Jayasena</i> |

Contact details: E mail: yrfpgis@gmail.com; Website: <http://www.pgis.lk/yrf>

PGIS ACTIVITIES IN FOCUS

SHORT COURSES ON GIS AND APPLICATIONS



Participants of the 55th Short Course (February 17 - 22, 2014)



Participants of the 56th Short Course
(March 31 - April 5, 2014)



Participants of the 57th Short Course (April 21 - 26, 2014) during a field class



Participants of the 57th Short Course (April 21 - 26, 2014) at a field class



Participants of the 17th Advanced Short Course
(June 23 - 28, 2014)

NATIONAL WORKSHOPS ON SCIENTIFIC WRITING



Participants of the 3rd National Workshop on Scientific Writing (January 30 - 31, 2014) during technical sessions



Participants of the 5th National Workshop on Scientific Writing (December 4 - 5, 2014) during technical sessions

1ST NATIONAL WORKSHOP ON DATA MANAGEMENT, ANALYSIS AND INTERPRETATION



Participants of the 1st National Workshop on Data Management, Analysis and Interpretation held on February 20 and 21, 2014

4th and 5th REGIONAL TRAINING COURSES ON DISASTER RESILIENT LEADERSHIP



Left: Participants during a technical session of the 4th Regional Training Course on ‘Disaster Resilient Leadership’ held from 17th to 21st March 2014 at the Earls Regency Hotel. **Right:** Participants of the 5th Regional Training Course held from 7th to 11th July, 2014 in Bangkok, Thailand

3rd INTERNATIONAL SYMPOSIUM ON WATER QUALITY AND HUMAN HEALTH



Participants at the inaugural session of the 3rd International Symposium on Water Quality and Human Health held on June 27 and 28, 2014

WORKSHOP ON MUSHROOM PRODUCTION TECHNOLOGY



Left: Lighting of the traditional oil lamp at the inaugural session of the Workshop on Mushroom Production Technology held on July 18, 2014. **Right:** Participants of the workshop

PGIS RESEARCH CONGRESS 2014



Prof. Atta-ur-Rahman, the Chief Guest, lighting the traditional oil lamp at the inaugural session of the 'PGIS Research Congress 2014' held on 10th and 11th October 2014 at the PGIS



Prof. H M D Namal Priyantha (Director, PGIS) addressing the inaugural session of the '1st PGIS Research Congress 2014' held on 10th and 11th October 2014 at the PGIS



Participants of the PGIS Research Congress during technical sessions

**VISIT BY DELEGATION FROM
CAMBODIA**



During a meeting with the delegation from the Royal University of Phnom Penh in Cambodia, who visited the PGIS on September 18 - 19, 2014

**GIS TRAINING PROGRAMME ON
LANDSCAPE ARCHAEOLOGY**



During a technical session of the GIS Training Programme on Landscape Archaeology held during October 3 and 6 - 9, 2014

SAARC TRAINING PROGRAMME ON 'POST DISASTER NEED ASSESSMENT'



Left: Mrs. S Marina Mohamed (Secretary, Ministry of Disaster Management) addressing the participants of the SAARC Training Programme on 'Post Disaster Need Assessment' held from October 13 to 17, 2014. *Right:* Participants during a technical session

WORKSHOP ON PLANT DEFENSE



Participants of the Workshop on Plant Defense held on October 31, 2014

WORKSHOP ON ELECTROCHEMICAL WATER TREATMENT



Participants during technical sessions of the Workshop on Electrochemical Water Treatment held on December 12, 2014

WORKSHOP ON 'INTELLECTUAL PROPERTY AND PATENTS' (PATENT IT)



Participants during the inaugural session and a technical session of the Workshop on Intellectual Property and Patents held on December 19, 2014

DISASTER RESILIENT LEADERSHIP EXHIBITION



Crowds at the Disaster Resilient Leadership Exhibition, held in Hambanthota on December 26, 2014, organized as an activity parallel to '10th Anniversary of Tsunami 2004 - Activities'

YOUNG RESEARCHERS' FORUM (PGIS - YRF) ACTIVITIES



Participants during a technical session of YRF Career Development Workshop held on January 28, 2014

During a technical session of YRF Personality Development Workshop held on February 23, 2014



Prof. Atula Senaratne (Vice-Chancellor, University of Peradeniya) lighting the traditional oil lamp at the inaugural session of the YRF NIGHT 2014 held on June 23, 2014



During the launching of the inaugural issue of the YRF magazine 'SCISCITATOR' on June 23, 2014



During presentations of the monthly colloquium series (from left to right): 'How to handle stress and emotions' by Dr. Shavindra Dias on August 31, 2014; 'Know your intellectual property rights' by Dr. Manjula Sandirigama on September 27, 2014; 'Importance of social relationships' by Ms. Delia Shelton on October 24, 2014; 'Einstein's life story and his revolutionary ideas in Physics' by Dr. Vincent Smith on November 24, 2014

YRF ACTIVITIES *continued*



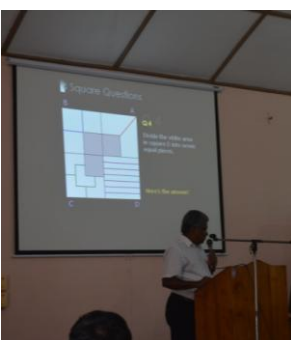
YRF members participating in a community service project to raise funds for the Kidney Protection Unit, Kandy Hospital during Esala Perahera 2014



Undergraduate students during a panel discussion on 'Applying for graduate studies' held on October 29, 2014



YRF membership drive and PGIS awareness activities held at NIFS, Hantana on November 26, 2014



Participation of YRF members in the academic and social activities of the "Research Frontiers 2014 - Young Researchers' Camp" held on December 13 and 14, 2014

Continued on page 31

M.Sc. DEGREES AWARDED in 2014

Awardees

Titles of Research Project Reports

M.Sc. – Analytical Chemistry

1. C Karunaweera Corrosion inhibition of aluminum using cinnamaldehyde
2. W S B Ratnayake Investigation of the inhibitive action of eugenol and leaf extract of cinnamon (*Cinnamomum zeylanicum*) on mild steel (MS) corrosion in salty and acidic media
3. Y N Rathnayake Adsorption studies of aloin on activated charcoal
4. G M S S Bandara Sorption characteristics of cadmium ions on burnt brick clay particles
5. P H M I D K Herath Effects of biochar on metal ion release and phytotoxicity reduction in heavy metal contaminated soils in Sri Lanka
6. T S Abeywansa Antioxidant properties of cocoa (*Theobroma cacao*) pod husk
7. P M C K Yatibopitiya Purification and characterization of venom protein of Sri Lankan Russell's viper (*Vipera russelli russelli*)
8. M D M Gunathilake An investigation of the quantity of heavy metals in drinking water resources of Kulugammana, Sri Lanka
9. P W Abeygunawardhana Development of an electrochemical technology to remove nitrate from contaminated groundwater
10. L P Gamage Enhanced performance of Sri Lankan natural graphite using Propane Sultone as an electrolyte additive in lithium ion batteries
11. I D Jayasuriya Effect of different pasteurization conditions and storage period on the lipid oxidation and antioxidant capacity of goat and buffalo milk
12. K R N N Warnasekara Evaluation of stability and availability of fluoride in toothpastes and development of a remedy for fluoride degradation
13. R M L P Thilakarathna Application of polyethylene glycol precipitation method for the detection of macroprolactinaemia as a cost-effective method in Sri Lanka
14. E V K Eratne Investigation of aspartic protease inhibitory activity in the bark extract of *Dillenia retusa*

M.Sc. – Applied Epidemiology

1. A D S Abeysinghe Effects of two feeding regimens on laying performance of broiler breeder hens
2. K L T D Jayawardene Socioeconomic information and health of captive elephant keepers in Sri Lanka
3. R M C Rajapaksha Correlation between mastitis and fertility in cows in Galnewa government veterinary division
4. W M A Wijayasooriya Prevalence of mastitis in dairy farms in Kotawehera government veterinary range

M.Sc. – Applied Statistics

1. T Theiventhiram Statistical analysis of extreme ocean waves in Sri Lanka
2. R A R T Rupasinghe Modeling weekly rainfall during northeast monsoon and southwest monsoon: A Case Study using rainfall in Anuradhapura
3. T Kularajasingam Identifying rainfall pattern in Hambantota district using global atmospheric data
4. S Jayasekara Fitting Generalized Lambda Distribution and identifying a suitable model for solar radiation data in Colombo, Sri Lanka
5. K W G D H Rajapaksha Wind speed analysis and energy calculation based on mixture distributions in Narakkaliya, Sri Lanka
6. C I Wijethunga Forecasting of crude palm oil (CPO) future prices using Multiple Linear Regression and Artificial Neural Network
7. U P G Lakmali The effect of interest rate and exchange rate on sectoral stock prices in Sri Lanka
8. P A G R Pannala Statistical analysis of the risk factors of major heart diseases
9. P G P Sanjeevani Prediction of paddy yield in Mahaweli areas by statistical modeling

M.Sc. – Clinical Biochemistry

1. S L De Silva Partial purification of α -amylase inhibitor from *Syzygium cumini* leaves
2. M M Hunais Composition of human renal calculi obtained from patients in some districts of Sri Lanka
3. N K Dadallage A study on glycaemic control, lipid profile and body mass index in patients with diabetes mellitus
4. R K N Priyangika Liver functions of diabetes mellitus type 2 patients treated with ayurveda medicine: with special reference to *Chandraprabha vati*
5. H A S K Ranasinghe Optimization of two methods to detect plant-derived inhibitors of protein glycation
6. K Rajeevan Study on antioxidant status and oxidant stress in hypothyroid patients
7. S Shiffana Serum calcium, magnesium and phosphorous reference intervals in a group of healthy Sri Lankan adults
8. G H M T T Gannile Assessment of dehydration and its effect on the renal functions of the farmers of dry zone of Sri Lanka
9. K S R Kumara Renal toxicity of cisplatin in patients with head and neck cancer in Sri Lanka
10. A M S M Wickramaratne Urinary iodine excretion, thyroid stimulating hormone and antioxidant status in patients with suspected thyroid dysfunction

M.Sc. – Computer Science

1. A A J S Athauda Low cost embedded system for automating the irrigation system of a crop plantation

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2. R D Manoranjit Distributed laboratory management and automated blood report generating system
 3. P V R U Ponnawila GIS aided utility management system for National Water Supply and Drainage Board
 4. W M G K Weerasooriya Human resources management system for Sri Lanka Air Force
 5. H M S R B Abeykoon Web-based document management system for divisional secretariat, Poojapitiya
 6. H M H S Bandara Machine-learning approach for modeling software quality
 7. Sivasubramaniam Sivaraj Detecting and eliminating active traffic attacks by monitoring network flow patterns
 8. M G P Karunasiri An approach to develop an optical character recognizer for printed Sinhala text using C#
 9. S C Wickramasuriya Computer vision-based Sri Lankan sign language recognition
 10. E M N K Ekanayake Consistency checking of Unified Modeling Language (UML) class and sequence diagrams
 11. Poopalasingham Kobikrishna A morphological and gradient-based approach to classify plant leaves using support vector machines
 12. Vallipuram Thileeban A classification technique for face recognition based on locally merged codebooks
 13. Y B M Arachchi Sharepoint specific manual code review and evaluation tool for .NET IDE
 14. L P B Seneviratna Social media watch later plugin for google chrome
 15. P B Y N Dayarathne Accelerating Rabin Karp on a multi-core graphics processing unit using CUDA
 16. Vadivelu Rajaratnam Developing an on-line certificate issuing system

M.Sc. – Disaster Management

1. I A K Ranaweera Socio-economic impacts of integrated early warning in landside-prone villages of Matale
2. M R N C Weerasinghe Topographic and structural features of some road-cut failures, central highlands of Sri Lanka
3. G M J K Gunawardana Analysis of relationship between health risks and ozone layer depletion: A Case Study in Anuradhapura district

M.Sc. – Engineering Geology & Hydrogeology

1. I G C I Kumara Application of 2D electrical resistivity techniques for groundwater investigations: A Case Study on Jaffna limestone, Sri Lanka
2. D I U Jayawardhane Geological factors affecting for building cracking in Vijaya Sri Gama area, Digana, Kandy
3. R W M D R Wanigasekara Integration of safety concept factor into landslide hazard zonation mapping: A Case Study in Kegalle

M.Sc. – Environmental Science

1. N Madanayake Reduction of methane emission from biodegradable municipal solid waste by windrow composting: A Case Study
2. I W C S Wimalasekara Freshwater biodiversity in the littoral zone of Nikiniyawa wewa with special reference to its water quality parameters
3. S H M C S Kularathne Occupational acute pesticide poisoning among farmers in Sri Lanka: a cross sectional study
4. J K N D Jayakody A study on water quality of Swabha Uyana lake, Anuradhapura, Sri Lanka
5. R W P Roshani The potential for soil carbon sequestration under tea and *Eucalyptus* in the upcountry intermediate zone of Sri Lanka
6. H M A S Herath Sustainable utilization of elephant waste: a case study from Pinnawala orphanage, Sri Lanka
7. H M A G Thilakarathne Sorption properties of tea waste and rice husk biochar for carbofuran removal from aqueous media
8. D M C B Wijerathna Prospects for resource recovery from solid waste in three local authorities of Kandy district

M.Sc. – Experimental Biotechnology

1. Umaieyaal Annarajah Retention and swelling capacities of coconut kernel residue
2. M H B C Tissera Isolation and identification of marine bacteria with antimicrobial activity from west coast of Sri Lanka
3. H B D Jeewantha Developing a DNA marker based screening method to identify the susceptible people for non-diabetic chronic kidney disease in dry zone, Sri Lanka: a pilot study
4. M B D Lakmalie A DNA fingerprinting scheme to identify the mix ups in semen samples of cattle breeds in artificial insemination programs of Sri Lanka
5. M M P C Marasinghe DNA-based authentication of *Solanum melongena* var *insanum* (V. Ela batu) roots in herbal medicine market to circumvent the use of noxious adulterant, *Solanum melongena* (V. Eggplant) roots
6. S W M B Dunuwille Development of a PCR-based genotyping procedure to identify the unacceptable adulterations in Sri Lankan meat market
7. S Sivaramanan Isolation of cellulolytic fungi from selected environmental sources
8. W T R Perera Prevalence analysis on probiotic stability in commercially available yogurts in Sri Lanka
9. L C A Gunasekara Hypoglycemic and hypolipidemic effects of star fruit (*Averrhoa carambola*)

M.Sc. – GIS & Remote Sensing

1. A P Wimalasena Geographic Information System for management of mineral extraction in the Kandy district

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2. K R K Abayasinghe Change detection in vegetation cover of Horton Plains National Park for adaptive management: A practical geoinformatics approach
 3. W M V K Dayawansa Application of GIS for traffic accidents mapping and analysis
 4. W N A Pathirana Automatic extraction of stream networks from DEM data
 5. S M Joseph GIS-based traffic accident analysis in Negombo police area
 6. N M P Gunawardana Developing and testing a method to map underground utility networks: A Case Study on Electricity Distribution Network of University of Peradeniya
 7. Y M R N Kumari GIS based tsunami risk assessment for Galle area
 8. S M D Samarakoon Residential land suitability model for resettlement plan of EIA: A Case Study in Kalu Ganga development project
 9. D I Jayalath Web-based GIS application for coastal atlas
 10. A J N M Bandara GIS-based forest fire management plan for Hantana protected area
 11. M K C Jayamali Application of geo-spatial and statistical methods for prediction of ground subsidence: A Case Study from Matale
 12. W A T Karunathilake Web GIS to identify the problematic mobile signal clusters
 13. N T Ranchagodage Development of a GIS-based website using open source software: A Case Study of Colombo district
 14. K W N Nadeeshani Implementation of Geographic Information System for tea plantation management: A Case Study at St. Coombs estate, Talawakelle
 15. M V S Fernando Geo-informatics approach to quantify the impact of rainfall pattern change on hydroelectric power production in Sri Lanka: a case study in Mahaweli river basin
 16. H M M P Heenkenda GIS-based landed property valuation model with special reference to external factors of the comparative method of valuation
 17. M A A S Madawala Arachchi Application of GPS, GIS and RS in plantation sector
 18. G Y Lakmali Comparison of DEM accuracy of LiDAR data and photogrammetric data with field surveyed data
 19. S Hariharan GIS based analysis of healthcare services in Trincomalee district
 20. S Harshan Mapping of groundwater quality in Chunnakam and Jaffna towns: water quality index and GIS
 21. D G N D Dayananda Human impacts on Mahaweli riverine environment from Peradeniya to Polgolla
 22. M D H Priyanga Application of fishing data and spatial statistical models to detect seasonal trend for multi-dayring net fishery in Sri Lanka
 23. M A A L Rupasinghe GIS based taxation system for Haputale urban council
 24. S C Wanigasinghe GIS based air defence radar integration system
 25. D D N Dharmathilake Disaster management and recovery solutions (A web-GIS approach)
 26. M S P M Siriwardane Green space planning using GIS and remote sensing for the city of Colombo, Sri Lanka
 27. V P I S Wijeratne Mapping and predicting the spread of “*Myroxylon balsamum*” in Udawattakele biosphere forest using GIS and RS

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|-----|-----------------------|--|
| 28. | D M A Shiromali | Geographical information system based food security mapping for Mullaitivu district of Northern Sri Lanka |
| 29. | D M R S Dassanayake | Site suitability evaluation for ecotourism using GIS: A Case Study of Kandy district |
| 30. | W M E D Samarasinghe | Outpatient accessibility to central dispensaries in the Kandy district |
| 31. | Nadarajah Theevaharan | GIS-based application on flood risk management with special reference to divisional secretariat, island North (Kayts) in Jaffna district |
| 32. | M A D Samanmali | Study of the spatial distribution of air pollution in the city of Colombo, using GIS and RS |

M.Sc. – Industrial Chemistry

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|----|---------------------|--|
| 1. | M S M Saududeen | Colour removal of synthetic dye waste water using sawdust |
| 2. | K I I B Kulathunga | Preparation of highly transparent conducting fluorine doped tin oxide glass |
| 3. | W C Fernando | Accumulation of heavy metals in sediments and <i>Ipomoea aquatica</i> in engineered wetland |
| 4. | G D S Ganegoda | Development of a water purification method for use in areas affected with the chronic kidney disease of unknown etiology (CKD _U) |
| 5. | P L Wickramasooriya | Cesium-134 and Cesium-137 radioactivity levels in Sri Lanka sea water after recent nuclear power plant accident in Fukushima, Japan |
| 6. | K H N Suranjani | The effects and operational parameters of precipitated calcium carbonate production from dolomitic lime |
| 7. | K L Charitha | Identification and characterization of impurities that are detrimental to the whiteness of Kaolin at Meetiyanagoda deposit |

M.Sc. – Medical Physics

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|----|----------------|---|
| 1. | F F Nawas | CT number – electron density conversion relationship: effect of tissue inhomogeneity on dose distribution |
| 2. | N K Mahato | Comparison of hemodynamic responses during auditory stimulation between left and right planum temporale and primary auditory cortex using functional magnetic resonance imaging |
| 3. | T M S Ahamed | Study of dosimetric characteristics of motorized wedges in 6 MV photon beam of linear accelerator used in radiotherapy |
| 4. | K V A W Kumara | The accuracy of reconstructed high dose rate brachytherapy source configuration and dose distribution using C-arm X-ray unit and CT simulator |
| 5. | R D A Fernando | Constructing a manually adjustable tertiary collimator for maximum field size 15x16 cm ² for Co-60 teletherapy unit and verification of its clinical usage |

M.Sc. – Nanoscience & Nanotechnology

- | | | |
|----|----------------------|---|
| 1. | D S P Ketipearachchi | Illite and activated illite for desalination applications |
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2. Y Y Kannangara Photocatalytic degradation of toluene: a volatile organic compound in indoor air on nitrogen doped-TiO₂
 3. K A D M S Sarathchandra Synthesis, characterization and application of Cu₂HgI₄, C₆H₅NH₃PbI₂Cl, CH₃NH₃PbI₃ and BaCuI₃ in solar cells
 4. W A K Perera Synthesis of hydroxyapatite nano particles and investigation of their mechanical properties
 5. A S Satharasinghe Synthesis of nano TiO₂ using sol-gel method and evaluation of tensile strength of nano TiO₂ treated textile yarn under UV exposure

M.Sc. – Physics of Materials

1. H S Alahakoon Study of thermal conductivity of polymers and a polymer composite based on Al₂O₃ filler

M.Sc. – Plant Science

1. G K Jayasinghe Antibacterial activity of some traditional herbal drugs and their plant species used in the treatment of skin disease, wound healing and diarrhoea

M.Sc. – Science Education

1. U E Amarasekara Use of computer assisted learning in teaching G.C.E. (A/L) biology unit 14, Applied Biology
2. G W Gunawardana Assessment of the problems in using world wide web to retrieve information for G.C.E. (A/L) biology education
3. N A V Somasiri Accelerated remedial teaching programme to develop the essential learning competencies in mathematics for the students entering Grade 6
4. N W E J M D Fernando Improving basic mathematical skills of low performed secondary students of type II schools in Galle zone
5. S S Senadheera Activity based learning to teach natural and man-made environments for Grade 8 students
6. H P M L K Karunarathne Effectiveness of kinesthetic activities on students' subject knowledge achievement level of science (Biology unit) in Grade 10
7. V Kulathunga How far science teachers use the environmental features in science teaching in the junior secondary grades in Sri Lanka
8. R D Ambagala A study of the students' view of their favourite teacher's interpersonal behaviour in the science classroom
9. P N S Jayawardana Effectiveness of computer assisted instructions in teaching thermodynamics in G.C.E. (A/L) chemistry
10. D H S D Somarathna An approach to introduce a new classroom teacher evaluation process for science and mathematics in secondary education

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|-----|--------------------------|---|
| 11. | M D Cooray | A study on achievement level in multiplication of Grade 8 students in type II schools of Kalutara education zone |
| 12. | W A S K Weerasinghe | Use of classroom based science society to enhance scientific concepts |
| 13. | Vinitha Kathiresapillai | Development and evaluation of activity based learning for G.C.E (A/L) bio science curriculum on water quality analysis |
| 14. | J M R I Bandara | Enhancing Grade 11 students' understanding of "different solvents and their applications" using school-based assessments (SBA) |
| 15. | N Gurusinghe | Identification of attitudes and problems associated with the use of English as a medium of instruction for G.C.E. (A/L) biology students in Colombo district, Sri Lanka |
| 16. | D M A P Dissanayake | A study on handling laboratory equipment with special reference to developing a practical guide for selected equipment for secondary level |
| 17. | H M N Herath | The use of electronic devices for learning of science: a study conducted with Grade 11 students |
| 18. | Mohamed Amir | Effects of conceptual change instruction on achievement, attitudes and motivation of Grade 9 students' mathematics in Maldives |
| 19. | Pangayanathan Sutharshan | Problems faced by Grade 11 students in remote schools in learning mathematics: a case study in Thirukkivil educational zone |
| 20. | Vallipuram Thayaparan | Learning difficulties of Grade 9 students on simple equations and suggestions for overcoming: a case study in Point Pedro education division |
| 21. | D M S C P K Dehideniya | A unit plan to teach Unit 4 - Plant Diversity in Grade 6 science |
| 22. | R D N P Chandrasena | Students' conceptual understanding and misconceptions on force and motion through different instruments combined with Certainty Response Index (CRI) |
| 23. | M M Nagoorthamby | Critical evaluation of G.C.E. (A/L) physics practical in Akkaraipattu and Kalmunai education zones |
| 24. | U G J S Rathnayake | Impact of content based learning on speaking skills of English language |

M.Sc. – Water Resources Management

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|----|------------------|--|
| 1. | H P D I J Kumara | Systematic development of water supply systems in Kurunegala district: a case study in Kotawehera area |
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POSTGRADUATE DIPLOMAS AWARDED in 2014

Analytical Chemistry

- | | |
|------------------------|------------------------|
| 1. N G W Priyadarshani | 5. A Bodyyabadu |
| 2. S M D S Subasinghe | 6. G G M N Achinda |
| 3. D R N P Bandara | 7. L A P D Karunaratne |
| 4. H M I M Kumari | 8. R M S N Ratnayake |

Applied Statistics

1. D M R B N Dissanayake
2. D M C K Dissanayake
3. R M I K Abeyratne
4. S L M Naseef
5. S I A U K De Silva
6. Paramanathan Ushananthini
7. K Arunatharshini
8. B M A S Balasuriya
9. S S Edward
10. G H P Perera
11. P Kajamugan

Biodiversity Conservation Management

1. P F U Pathmasiri

Biodiversity, Ecotourism & Environment Management

1. S D Jayasinghe

Clinical Biochemistry

1. K P R Fernando
2. M S M Murthala

Computer Science

1. W A M K Kumarathunga
2. M Nireshkumar
3. D Kugathan
4. J V Valarmathy
5. J M T D Bandara
6. H M S A D K Herath
7. H M M A Herath
8. K G N Gunawardhana
9. D G R D D T Bandara
10. K Kuganesan
11. K G Kuruppu
12. K Visakan

Disaster Management

1. M K C G Gunathilake

Environmental Science

1. N G R B Tennakoon
2. W M N P Wijayakoon
3. D G M Ekanayake
4. W D J Priyadarshani

Experimental Biotechnology

1. J K Disanayake
2. B M M P Banneheka
3. B A U Kaushalya
4. B Logendra
5. H N M Silva
6. W M C Wickramasinghe

Industrial Chemistry

1. R P S S Kumarasiri
2. J M G S Jayasooriya
3. R A H M I S Kirimetiya
4. I R Palangasinghe
5. U P T P Wijayasinghe

Industrial Mathematics

1. P S S Karunarathna
2. S Thilaganathan
3. M I U Wickramasekara
4. A W I N Gunathilake
5. D M G M K Dissanayake
6. D H N Chandani
7. P G D E Dehigama

Information Technology

1. W W M M Chandrasena
2. G K R De Silva
3. G G S H Jayasekara
4. T H H J Nishantha
5. R M P M B Rathnayake
6. K C Sampath
7. P A S N A Senevirathne
8. J D S G M Siriwardana
9. W M T C Weerasekara
10. N Wickramasinghe
11. P W A N Indrajith
12. Thuraijarah Muhunthan

Medical Microbiology

1. W C K Weerapana
2. M A M Munasinghe
3. K P Gabadage

Medical Physics

1. A M F Nazeefa
2. W A K C Weerathunga

Nanoscience & Nanotechnology

1. R B S Dahanayake
2. A D Mawathage
3. R Vijith
4. T S Wijenayake
5. H A A E Perera

Physics of Materials

1. N Suresh
2. K Sathiyarajan
3. Y Santharuban
4. A G D S Lanka

Plant Science

1. K S L U K Gunasinghe
2. C L Kothalawala
3. I Kumarasinghe
4. I Varatharajan
5. M G D K Vidyarthna

Postharvest Tech. of Fruits & Vegetables

1. S H T C De Silva

Science Education

1. K Arunasalam
2. A M R M Abeykoon
3. S B Ariyaratne
4. D M D S Ariyasinghe
5. W M C K Basnayake
6. N R D Dahanayake
7. W M N Deepika
8. J L H S Jayasinghe
9. K V P D Sri Jayathilaka
10. U V D B Kumari
11. J A T Lalindra
12. S A B Maheshinee
13. R B R Manawasekara
14. A S Mapalagama
15. K K N Niroshani
16. H P T R Priyadarshani
17. N P Rajapaksha
18. R M R M K Rathnayaka
19. R M R K Rathnayake
20. W A C L Senanayake
21. M H Shifana
22. P W M S R M Weerasooriya
23. T D S N Jayasena
24. D D Liyanage

MSc PROGRAMMES 2014/2015 – INAUGURAL SESSIONS



During the inauguration of M.Sc. and Postgraduate Diploma programme in Science Education, held on February 16, 2014



During the inauguration of M.Sc. programmes in Medical Physics and Physics of Materials, held on February 28, 2014



Prof. H M D Namal Priyantha (Director, PGIS) addressing the participants at the inauguration of six M.Sc. programmes, held on April 25, 2014



Lighting the traditional oil lamp at the inauguration of five M.Sc. programmes, held on June 23, 2014