



SOUTHERN AFRICAN BIOCHEMISTRY AND INFORMATICS OF NATURAL PRODUCT PROGRESS REPORT

SABINA SECRETARIAT

Introduction

- Grant –USD800,000 from Carnegie-IAS RISE for 2.5 years
- 6 Key and broad research areas
 - Molecular biology/functional genomics
 - Natural product chemistry
 - Synthetic chemistry
 - Biochemistry
 - Food science
 - Bioinformatics

Project purpose and goal



- Implementation of proactive postgraduate programmes in chemistry/biochemistry and bioinformatics of natural products. The specific objectives are:
 - i. Implementation of both PhD and MSc programmes.
 - ii. Development of networks integrating chemical and biological sciences.
 - iii. Strengthening networking among the departments of chemistry and biochemistry in key SADC universities.

Expected outputs

- Innovative networking in chemistry and biochemistry of natural products among SADC universities and research institutes.
- Cadre of doctoral and MSc young men and women actively involved in studies on the chemistry and biochemistry of natural products using top class facilities.
 - **12 PhD and 18 MSc graduates by 2014**
- Greatly enhanced participation in publication of scientific results in international journals.

Achievements



- Innovative networking in chemistry and biochemistry of natural products among SADC universities and research institutes
 - Secretariat in place and functional in Malawi
 - Project Manager recruited, working and visited ACGT for hand-over in June, 2009
 - Financial management systems at UNIMA in place
 - Systems for networking and communication amongst the partners in place
 - Collaborative research work and training of staff/students
 - SABINA website populated
 - One physical planning meeting held at UP, December, 2008

Achievements

- **Cadre of doctoral and MSc young men and women participating actively in studies on the chemistry and biochemistry of natural products**
 - Systems of recruiting and co-supervision of students developed
 - Joint supervision of students established
 - Main research areas delineated and agreed
 - Conditions and forms of student engagement developed
 - Two adverts inviting PhD and MSc candidates
 - Twelve students
 - 2 PhD and 4 MSc students awarded scholarships in December, 2008 (3 male + 3 female)
 - 4 PhD and 2 MSc students offered scholarships in mid September, 2009 (4 male + 2 female)
- Five of the 2009 candidates have accepted the offer and now registering with the various universities
- Email communication facility used for assessing and selecting the top candidates

SABINA Fellows



Fellow	University	Study Area	Supervisors
Justin Omolo(TZ)	WITS, PhD	Phytochemistry and synthesis of Bioactive Natural products isolated from Tanzania medicinal plants	Prof Charles De Koning Dr. Vanesh Maharaj
Nicholas Mphangwe(MW)	UP, PhD	Genetic studies and use of molecular markers in tea breeding and selection	Prof Zeno Apostolides Dr. H. Nyirenda
Tinotenda Shoko(ZW)	UNIMA, MSc	Flavour Chemistry of some indigenous fruits and vegetable in Malawi	Prof JDK Saka Prof John Taylor Dr. C. Erasmus
Ms Secilia Ilonga(NM)	UNAM, MSc	Screening of Anticancer and antioxidants compounds from selected indigenous plants	Dr Martha Kandawa-Schulz Dr S. Lyantagaye
Ken Ngwira(MW)	UDSM, MSc	Natural products chemistry	Dr. Quintino Mgani
Ms M. Pelly Malebe(SA)	UP, MSc	Development of genetic markers for tea	Prof Zeno Apostolides

SABINA Fellows



Fellow	University	Study Area	Supervisors
Adushan Pillay(RSA)	Wits, PhD	Synthetic Chemistry	Prof Charles De Koning Dr. Vanesh Maharaj
Ms. Petrina Kapewangolo (NM)	UP, PhD	Natural Products Chemistry	Prof Zeno Apostolides Dr V Maharaj Dr Quntino Mgani
Godwil Madamombe (TRFCA-Zw)	UP, PhD	Quality of Tea	Prof Zeno Apostolides Dr. H. Nyirenda
Kumbukiani Nyirenda	UNIMA, PhD	Nutraceuticals from mushroom and other plants	Prof John Saka Dr Vinesh Maharaj Dr E Fabiano
Ms Moola Nyambe(NM)	UNAM, MSc	Natural products chemistry	Dr Martha Kadwa Schultz Dr Sylvester Lantangayi
Ms Liberata Mwita(TZ),	UP, MSc	Bioinformatics	Dr Olev Prof Jane Morris

Achievements



- Resource mobilisation-a proposal to EU-ACP for:
 - Support to Co-ordination and networking in applied research
 - Strengthening the SABINA S&T consortium through additional training activities for scientists
 - Linking the SABINA network to policy makers, farmers and entrepreneurs
 - Support to management of research activities and reinforcement of research quality

Achievements



- Resource mobilisation-a proposal to EU-ACP for:
 - Development of a knowledge management system for SABINA (Virtual Research Environment)
 - Provision of training to the scientific community in research methodology, project management, research fund management and grant writing
 - Establishing external peer review and evaluation procedures for SABINA
 - Extending the nodes to other institutions in SADC region
- Great promise of being funded; in the final evaluation phase

Scientific publishing and networking



- **Greatly enhanced participation in publication of scientific results in international journals**
 - This would be achieved starting from Year 2 of the project implementation
- Adverts for postdocs and equipment support posted in June, 2009
 - One postdoc application received
- Participation and linkages to SANBIO of NEPAD- capacity building
- Academic Director represented SABINA and IPICS project at the ISP/AU/AAU conference on cooperation in basic science, 1-3 Sept, 2009
 - Jointly supported by the two projects
 - Wider dissemination made
 - Executive Director of African Academy of Sciences, Prof Mohammed Hassan highlighted this project in his presentation at the Conference
- Mid annual report submitted in time

Challenges



- Student support administration
 - Student registration/admission: study visas/permits, medical Aid, SAQA requirement
 - Some parent institutions are not able to support airfares for their staff
 - Variable fees despite the SADC protocol on local fee application to other SADC nationals
 - Different academic calendars-student registering at different times
 - Reporting on students' progress variable

Challenges



- **Network management**
 - Members being committed with other core activities at their work places leading to delays in participating in project management
 - Few individuals appear to be very active and always in the loop; others must be chased to provide feedback
- **Resource administration**
 - Delays in receiving invoices for UNIMA to process transfers
 - UNIMA required to be registered as a vendor for invoice processing
 - Currency fluctuations-economic crisis

SABINA Network partners



- **MALAWI**
- Chancellor College, University of Malawi (Email: sabina@chanco.unima.mw)
 - Prof John DK Saka, Project Academic Director, Chemistry Department
 - Mr Frank Ngonda, Project Manager, Secretariat
 - Mr Calvin Ziba, Project Accountant, College Finance Office
 - Dr Hastings Nyirenda, Tea Research Foundation of Central Africa (TRFCA), Malawi
- **NAMIBIA**
 - Dr Martha Kandawa -Schultz, Department of Chemistry and Biochemistry, University of Namibia, Namibia
- **SOUTH AFRICA**
 - Prof Jane Morris, African Centre for Gene Technologies (ACGT), South Africa
 - Dr Vinesh Maharaj, Centre for Scientific and Industrial Research (CSIR), South Africa
 - Prof Zeno Apostolides, Department of Biochemistry, University of Pretoria, South Africa
 - Prof Charles de Koning , School of Chemistry, Witwatersrand University, South Africa
- **TANZANIA**
 - Dr Sylvester Lyantangayi,, University of Dar es Salaam, Tanzania