

CURRICULUM VITAE: PROF. SYLVIA AWINO OPIYO

PERSONAL DATA

Name : Sylvia Awino Opiyo
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EDUCATION BACKGROUND

2012-2014: Postdoctorate, Maseno University. National Council for Science and Technology Postdoctoral Fellowship
2008-2011: PhD (Chemistry) Maseno University, Kenya.
2003-2006: MSc (Chemistry) Maseno University, Kenya.
1992-1996: BEd Sc. (Chemistry and Mathematics), 2nd Class Upper Division, Kenyatta University, Kenya.
1987-1990: Kenya Certificate of Secondary Education B Plain, Nyamira Girls Sec. School.
1979-1986: Kenya Certificate of Primary Education, Maliera Primary School.

PROFESSIONAL TRAINING

2021: Strategic Leadership and Development Programme (SLDP), Kenya School of Government, Embu Campus.
2021: Effective and responsible leadership, Outward Bound School, Oloitokitok, Kajiado.
2019: Training on Governance and Strategic Leadership held on 28th October to 1st November 2019 in the Panorama Park Resort, Naivasha.
2019: Training on Governance and Strategic Management held on 10th to 16th March 2019 at Pride Inn Resort, Shanzu-Mombasa.

EMPLOYMENT HISTORY

2021-to date: Associate Professor, Department of Physical and Biological Sciences, Murang'a University
2017-2020: Senior Lecturer, Department of Physical and Biological Sciences, Murang'a University
2010-2017: Lecturer, Department of Chemistry, Maseno University
2009: Trainer of Trainers, Kenya National Bureau of Statistics: Training of senior supervisors & supervisors).
2008-2010: Tutorial Fellow, Department of Chemistry, Maseno University.
2009: District coordinator, Kenya National Bureau of Statistics, coordination of census activities in Koibatek District.
1997-2008: Graduate teacher, (Mathematics & Chemistry), Teachers Service Commission

Administrative Duties/Responsibilities

2017 to date: Dean, School of Pure and Applied Sciences, Murang'a University
2021 to date: Member of University Management Board, Murang'a University
2021 to date: Member, International Conference steering Committee, Muranga University
2021 to date: Member of Research, Innovation and Consultant Board, Murang'a University
2021 to date: Chair person, Promotions and Appraisals Committee for Administrative Staff, Murang'a University
2019 to date: Chair person, TVET Board, Murang'a University
2019 to date: Chair person, Linkages, Outreach and Partnerships Board, Murang'a University

2019 to date: Member, Strategic Plan Implementation Committee, Murang'a University
 2019 to date: Member, Space Allocation Committee, Murang'a University
 2019 to date: Member, Endowment Fund Committee, Murang'a University
 2019 to date: Member, National Cohesion, Values and Principles of Governance Committee, Murang'a University
 2019 to date: Member, Strategic Plan Implementation Committee, Murang'a University
 2019 to date: Member, ICT Advisory Committee, Murang'a University
 2019 to date: Member, Library Committee, Murang'a University
 2019 to date: Member, Appointment and Appraisal for the Teaching Staff Committee, Murang'a University
 2013-2017: Chairperson, School of Physical and Biological Sciences Board of Postgraduate studies, Maseno University.
 2013-2017: Chairperson, Department of chemistry Board of Postgraduate studies, Maseno University.
 2012-2017: Member, Maseno University Ethics Review Committee, Maseno University.
 2011-2017: Chairperson, Department of Chemistry Board of Postgraduate studies, Maseno University.
 2011-2013: Member, Board of Postgraduate studies, Maseno University.
 2010-2017: Academic Advisor, Postgraduate students, Department of Chemistry, Maseno University.
 2011-2017: Programme Co-ordinator - MSc. (Chemistry), Maseno University
 2016-2017: Chairperson Welfare committee, Chemistry dept, Maseno University

SEMINARS AND WORKSHOPS ATTENDED

2021: Sensitization of Trainers, Heads of Departments and Examination Officers on Assessment. TVET Curriculum Assessment and Certification Council (TVET CDACC) Virtual Training held on 15th January 2021.
 2020: Refresher Training for Murang'a University of Technology Lecturers on use of LMS (Moodle) for Online Teaching, Learning and Assessment. Virtual Training held on November 2020.
 2020: Job Description Analysis Training Workshop, Murang'a University. Virtual training held on 27th October 2020
 2020: Training of Teaching Staff on Use of Moodle for Online Exams Marking. Virtual Training Held on 22nd September 2020
 2020: Training in Competence Based Curriculum Delivery and Assessment Training for Murang'a University of Technology. TVET Curriculum Assessment and Certification Council (TVET CDACC). Virtual training held on 21st-24th July 2020
 2019: Supervision Training workshop, Dec 2019, Murang'a University.
 2019: Bulk Elemental Analysis Seminar, held on 5th November 2019. EKA Hotel, Nairobi.
 2019: Workshop on Gaps and Lapses in Laws and Policies for Chemical Management Organized by the Kenya Chemical Society on 6th March 2019 in Kisumu Hotel
 2018: Training on Principles on Academic Writing, held on 26th July 2018, Murang'a University
 2018: ODEL Training 9th November 2018, Murang'a University
 2018: Scientific Writing Training Workshop held on 13th June 2018, Karatina University
 2017: ISO 9001:2015 Internal Auditors Training Course, held on 20th – 22nd September 2017, Murang'a University
 2017: Pedagogy Training Workshop held on 9th-11th October 2017, Murang'a University
 2012: Bioethics Course held at Vic Hotel, Kisumu in April 2012.
 2010: Attended a Natural Product Research Network for Eastern and Central Africa (NAPRECA) seminar in Kisumu, Kenya.
 2009: Participated in DAAD PhD Proposal Writing Workshop in ICIPE, Nairobi-Kenya.
 2009: Introduction to Microbiology course held in Jomo Kenyatta University of Agriculture and Technology.

- 2005: Information Technology course on Microsoft Office User Specialists (MOUSE) held at Maseno University Information Technology Center (MITC).
- 2004: In-Service Training for Secondary Mathematics and Science Teachers (SMASSE) organized by JICA and Kenya Government.
- 2002: Seminar for Mathematics and Chemistry secondary school teachers organized by Nyando District Secondary School Heads Association at Onjiko Boys High School, Ahero-Kenya.

RESEARCH INTEREST

Analytical chemistry; Organic chemistry of natural systems; Isolation and characterization of secondary metabolites with biological activity; Structure modification of bioactive compounds; Synthesis of natural products with biological activities and Biological activity studies/ bioassays.

PAPERS PUBLISHED IN REFEREED JOURNALS

1. **Opiyo**, S.A., Muna, K.K., Njoroge P.W., Ndirangu E.A., 2021. Analgesic Activity of Conyza Floribunda Extracts in Swiss Albino Mice. *Journal of Natural Sciences Research*, 12(12), 1-6.
2. **Opiyo**, S.A., Njoroge P.W., Ndirangu E.A., Kuria K.M., 2021. A Review of Biological Activities and Phytochemistry of Rhus Species. *American Journal of Chemistry* 2021, 11(2): 28-36.
3. **Opiyo**, S.A., 2021. Repellent Effects of Ocimum Suave Extracts and Compounds against Prosthephanus Truncatus Horn. *American Journal of Chemistry*, 11(2): 23-27.
4. Lomertwala H.M, Njoroge P.W., **Opiyo** S.A., Ptoton. B.M (2020). Assessing Effect of Acid Treatment on the Chemical Properties of Clays from selected sites in Murang'a and Nyeri Counties, Kenya. *Journal of Natural Sciences Research*, 11(22), 20-26.
5. **Opiyo**, S.A., 2020c. Insecticidal Activity of Ocimum suave Willd Extracts and Compounds against Sitophilus zeamais Motschulsky. *Basic Sciences of Medicine*, 9(2):32-37 DOI: 10.5923/j.medicine.20200902.03.
6. **Opiyo**, S.A., 2020b. Evaluation of *Warburgia ugandensis* extracts and compounds for crop protection against *Prosthephanus truncates*. *Advances in Analytical Chemistry*, 10(2), 15-19.
7. **Opiyo**, S.A., 2020a. Insecticidal activity of *Elaeodendron schweinfurthianum* extracts and compounds against *Sitophilus zeamais* Motschulsky. *American Journal of Chemistry*, 10(3), 39-44.
8. Kugeria, P.M., Njoroge, P.W., **Opiyo**, S.O., Mwangi, I.W., 2020. Impure Hydrazone Preparation from Chicken Dung. *Chemistry and Materials Research*, 12(7), 8-14.
9. Kuria, K.M., **Opiyo** S.A., 2020. Characterization of Immunogenic Soluble Crude Proteins from Biomphalaria Pfeifferi against Schistosoma mansoni. *Journal of Natural Sciences Research*, 10(12), 28-34.
10. Ephantus G. Ndirangu, Sylvia A. **Opiyo** and Margaret W. Ng'ang'a (2020). Chemical composition and repellency of Nigella sativa L. seed essential oil against Anopheles gambiae sensu stricto. *Trends Phytochem. Res.* 4(2), 77-84.
11. Ephantus G. Ndirangu, Sylvia A. **Opiyo**, Margaret W. Ng'ang'a (2020). Repellent Properties of Compounds and Blends from *Nigella sativa* Seeds against *Anopheles gambiae*. *Basic Sciences of Medicine* 9(1): 1-7.
12. Makenzi A.M., Manguro L.O.A, Owuor P.O., **Opiyo** S.A., 2019. Flavonol glycosides with insecticidal activity from methanol extract of *Annona mucosa* Jacq.leaf. *Trends in Phytochemical Research Trends Phytochem. Res.* 3(4) 2019 287-296.
13. Njoroge P.W., **Opiyo** S.A., (2019a). Some Antibacterial and Antifungal Compounds from Root Bark of *Rhus natalensis*. *American Journal of Chemistry* 2019, 9(5): 150-158 DOI: 10.5923/j.chemistry.20190905.03.
14. Njoroge P.W., **Opiyo** S.A., (2019b). Antimicrobial Activity of Root Bark Extracts of *Rhus natalensis* and *Rhus ruspolii* *Basic Sciences of Medicine*, 8(2): 23-28 DOI: 10.5923/j.medicine.20190802.01.

16. Lomertwala H.M, Njoroge P.W., **Opiyo S.A.**, Ptoton. B.M (2019). Characterization of Clays from selected sites for Refractory Application. IJSRP, 9 (11): 600-603. DOI: 10.29322/IJSRP.9.11.2019.p9581.
17. Makenzi A.M., Manguro L.A.O., Owuor P.O., **Opiyo S.A** (2019). Chemical constituents of *Ocimum Kilimandscharicum* Guerke acclimatized in Kakamega Forest, Kenya. Bull. Chem. Soc. Ethiop. 2019, 33(3), 527-539.
18. **Opiyo S.A.** (2019). A review of ¹³C NMR spectra of drimane sesquiterpenes, *Trends in Phytochemical Research*. 3(3) 2019 147-180
19. Ochung A.A., Owuor P.O., Manguro L.O.A., Ismael I.O., Nyunja R.A., Ochieng C.O., Opiyo S.A. (2018). Analgesics from *Lonchocarpus eriocalyx* Harms. *Trends in Phytochemical Research*, 2 (4), 241-246.
20. **Opiyo S.A**, Manguro L.A.O., Owuor P.O. Ateka E.M. (2017). Triterpenes from *Elaeodendron schweinfurthianum* and Their Antimicrobial Activities against Crop Pathogens. *American Journal of Chemistry*, 7(3): 97-104. DOI: 10.5923/j.chemistry.20170703.03.
21. Ochieng C.O., **Opiyo S.A.**, Mureka E.W., Ishola I., (2017). Cyclooxygenase inhibitory compounds from *Gymnosporia heterophylla* aerial parts. *Fitoterapia* 119: 168-174.
22. Jeruto P., Arama P., Anyango B., Nyunja R., Taracha C., **Opiyo S.** (2017). Morphometric study of *Senna didymobotrya* (Fresen.) H. S. Irwin and Barneby in Kenya. *Journal of Natural Sciences Research* 7(6): 54-69. ISSN 2224-3186 (paper), ISSN 2225-0921 (online).
23. **Opiyo S.A.**, Manguro L.A.O., Akinyi D., Ochung A.A., Ochieng C.O. (2015). Biopesticidal Extractives and Compounds from *Warburgia Ugandensis* against Maize Weevil (*Sitophilus zeamais*). *Natural Products Journal* (ISSN: 22103155), 5(4):236 -243.
24. Ochung, A.A., Manguro, L.O.A., Owuor, P.O., Jondiko, J.I.O., Nyunja, R.A., Akala, H., Mwinzi, P., Opiyo, S.A., 2015. Bioactive Carbazole Alkaloids from *Alysicarpus Ovalifolius* (Schumach). *J. Korean. Soc. Appl. Biol. Chem.*, 58(6), 839–846. DOI 10.1007/s13765-015-0100-4
25. Ochieng C.O., Ishola I., **Opiyo S.A.**, Manguro L.O.A., Owuor P.O., Wong K.C.(2013). Phytoecdysteroids from the stem bark of *Vitex doniana* and their anti-inflammatory effects. *Plant Medica*. 2013; 79: 52–59. DOI: 10.1055/s-0032-1327880.
26. **Opiyo S.A.**, Manguro L.O.A., Okinda-Owuor P., Ochieng C.O. Ateka E.M., Lemmen P. (2011). Antimicrobial compounds from *Terminalia brownii* against sweet potato pathogens. *Natural Products Journal* 1: 116-120.
27. **Opiyo S.A.**, Manguro L.O.A., Okinda-Owuor P., Ateka E.M., Lemmen P. (2011). 7a-Acetylugandensolide and antimicrobial properties of *Warburgia ugandensis* extracts and isolates against sweet potato pathogens *Phytochemistry letters*, 4: 161–165.
28. **Opiyo S.A.**, Manguro L.O.A., Ogur J.A., Wagai S.O. (2010). Bioactive constituents of *Conyza floribunda*. *Journal of Pharmacology*, 4(3): 55-59.
29. Manguro L.O.A., **Opiyo S.A.**, Asefa A., Dagne E., Muchori W.P. (2010). Chemical constituents of essential oils from three Eucalyptus species acclimatized in Ethiopia and Kenya. *Essential Oils*, 13(5): 561-567.
30. **Opiyo S.A.**, Owuor P.O., Manguro L.O.A., Ateka E., Miano D.W. (2010). Development of a PCR technique for simultaneous detection of sweet potato chlorotic stunt virus and sweet potato feathery mottle. *Journal of Plant Pathology*, 92(2): 353-356.
31. **Opiyo S.A.**, Owuor P.O., Manguro L.O.A., Ateka E.M., Karuri H.W. (2010). Survey of sweet potato viruses and detection of cucumber mosaic virus in western Kenya. *Journal of Plant Pathology*, 92(3) 795-799.
32. **Opiyo S.A.**, Ogur J.A., Manguro L.A.O., Tietze L.F., Heiko S. (2009). A new sterol diglycoside from *Conyza floribunda*. *South African Journal of Chemistry* 62: 163-167.
33. **Opiyo S.A.**, Manguro L.O.A., Lemmen P., Herdweck E. (2009). Phytochemical analysis of *Commiphora holtziana* oleo-gum. The 13th Natural Product Research Network for Eastern and Central Africa (NAPRECA) Symposium Abstracts Book, page 73.
34. Manguro L.A.O., **Opiyo S.A.**, Herdweck E., Lemmen P. (2009). Triterpenes of *Commiphora holtziana* Oleo-gum resin. *Canadian Journal of Chemistry* 87(8): 1173-1179.

35. **Opiyo S.A.**, Ateka E.M., Owuor P.O., Manguro L.O.A. (2009). Development and evaluation of a multiplex PCR technique for simultaneous detection of SPFMV and SPCSV which infect sweet potato. International Livestock Research Institute (ILRI) Graduate Fellow Forum, Entebbe, Uganda 19th August, 2009.
36. **Opiyo S.A.**, Ogur J.A., Manguro L.A.O., Wagai S.O. (2007). Antimicrobial terpenoids of *Conyza floribunda*. The 12th Natural Product Research Network for Eastern and Central Africa (NAPRECA) Symposium Abstracts Book, page 57.

PATENT

REG.NO. KE/UM/2020/1445: Intelligent Outdoor Solar Powered Non - Contact Hand Sanitizer Dispenser. The field of invention is a programmable outdoor solar-powered non-contact dispenser for hand sanitizer fluids. (Kenya Industrial Property Institute).

PAPERS PRESENTED IN CONFERENCES

1. CO Ochieng, IO Ishola, SA Opiyo, LAO Manguro, PO Owuor, Wong Keng-Chong (2014). Phytoecdysteroids from the stem bark of *Vitex doniana* with anti-inflammatory activities. Humboldt Colloquium. Held at Safari Park Hotel, Kenya 6-8 March 2014.
2. **Opiyo S.A.**, Manguro L.O.A., Okinda-Owuor P. (2012). Bio-activity of extracts and isolates from *Warburgia ugandensis*. The 7th International Conference of the Kenya Chemical Society, held in Maseno University, Kenya October 15th – 18th.
3. **Opiyo S.A.**, Manguro L.O.A., Okinda-Owuor P., Ateka E.M., Lemmen P. Further Phytochemical and Antimicrobial Activity Studies of *Warburgia Ugandensis* against Sweet Potato Pathogens. 14th Natural Product Research Network for Eastern and Central Africa (NAPRECA) Symposium in ICIPE, Nairobi, Kenya, in August 8th -11th, 2011.
4. **Opiyo S.A.**, Manguro L.O.A., Okinda-Owuor P., Ateka E.M. Development and evaluation of a multiplex PCR technique for simultaneous detection of SPFMV and SPCSV which infect sweet potato. International Livestock Research Institute (ILRI) Graduate Fellow Forum, Entebbe, Uganda, August 19th - 21st, 2009.
5. **Opiyo S.A.**, Manguro L.O.A., Lemmen P. Phytochemical analysis of *Commiphora holtziana* oleo-gum. 13th Natural Product Research Network for Eastern and Central Africa (NAPRECA) Symposium in Kinshasa, DR Congo in August 10th -14th, 2009.
6. **Opiyo S.A.**, Manguro L.O.A., Ogur J.A., Wagai S.O. Antimicrobial terpenoids of *Conyza floribunda*. 12th Natural Product Research Network for Eastern and Central Africa (NAPRECA) Symposium held in Hotel Africana, Kampala, Uganda, August 22nd -26th, 2007.

PUBLISHED BOOKS

Opiyo S. A. Sweet potato Virus Detection Protocol and Microbial Infection Control (2012). Lap Lambert Academic Publishers, Germany. ISBN: 978-3-8484-9910-6.

THESES

- Opiyo S.A** (2011). Development of a multiplex pcr technique for simultaneous detection of sweet potato viruses and evaluation of traditional medicinal plant extracts for antimicrobial activity against the crop pathogens. PhD thesis, Maseno University.
- Opiyo S.A** (2006). Phytochemical, antibacterial and antifungal studies of *conyza floribunda*. MSC thesis, Maseno University.

ACADEMIC CURRICULA DEVELOPMENT

2018: PhD in Chemistry, Murang'a University

2017: MSC Industrial Chemistry, Murang'a University

2015: BSC Chemistry, Maseno University

2013: MSC Industrial Chemistry, Maseno University

FELLOWSHIPS AND GRANTS AWARDED

1. 2020: National Research Fund Multidisciplinary Research Grant Programme (KSHS19.9M).
2. 2013- National Council for Science and Technology Postdoctoral Fellowship. (KSHS 1M).
3. 2012- National Council for Science and Technology (Science, Technology & Innovative ST&I) Grant for multidisciplinary and multi-institutional research. (KSHS 2.2M).
4. 2011-National Council for Science and Technology (Science, Technology & Innovative ST&I) Grant for multidisciplinary and multi-institutional research. (KSHS2.5M).
5. 2009-2010: Biological Sciences in Central and Eastern Africa Network (BecANet) Scholarship for PhD studies
6. 2008-2010: Higher Education Loan Board (HELB) PhD Scholarship awarded by Kenyan Government for PhD studies.

JOURNAL REVIEW

2019 to date: Trends in phytochemical Research

2017 to date: International Journal of Entomology and Nematology

2016 to –date: Proposal Reviewer for National Research Fund (NRF)

2016 to –date: Reviewer Journal of Tea Science (Ijts)

2016 to –date: Reviewer Natural Products Journal.

MEMBERSHIP OF PROFESSIONAL BODIES

1. Natural Products Chemistry for East and Central Africa (NAPRECA)
2. Kenya Chemical Society (KCS)

COMMUNITY DEVELOPMENT/ INVOLVEMENT

2020- Participated in tree planting in Mareira, Murang'a County

2020- Contributed funds to support COVID-19 victims

2019- Contributed funds towards Endowment Fund – Murang'a University

2019- Participated in tree planting in Ndakaini, Murang'a County

2018- Participated in tree planting in Ndakaini, Murang'a County

2018- Participated in cleaning of Murang'a Town

2016- Participated in cleaning of kodiaga Market

REFEREES

Name	Contact
Prof. Dickson Nyariki	Vice Chancellor, Murang'a University P.O. Box 75-10200, Murang'a, Kenya Tel 0722770461
Prof. Philip O. Owuor	Department of Maseno University. P.O. Box 333-40105, Maseno, Kenya. Tel: 0720720704, Email: pokindao@gmail.com
Prof. Godfrey W. Netondo	Dean of School of Physical and Biological Sciences, Maseno University P.O. Box 333-40105, Maseno, Kenya. Tel: 0721583490