https://laaamp.iucr.org/

Awarded with a **€ 300K** grant from the International Science Council for the period 2017-2019

Full title of ISC-awarded proposal

Utilisation of Light Source and Crystallographic Sciences to Facilitate the Enhancement of Knowledge and Improve the Economic and Social Conditions in Targeted Regions of the World

LAAAMP's goal

LAAAMP is aimed at engaging the public and governmental officials in discussions about the role that Advanced Light Sources and crystallographic sciences could play to improve their countries' educational institutions, economies, social structures, health and world competitiveness.

EXECUTIVE COMMITTEE

Michele Zema (Chair)
University of Pavia, Italy
IUCr Executive Outreach Officer

Marielle Agbahoungbata
Coordinator, X-TechLab, Cotonou, Benin

Sekazi Mtingwa
TriSEED Consultants, LLC, Hillsborough, NC, USA
Chair of the IUPAP C13 Commission for Development

Özgül Öztürk
University of Siegen, Germany
Chair of SESAME Users' Committee

Sandro Scandolo
Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy

LAAAMP Regional AdLS Usage & Strategic Plan Committees (USPC)

Africa

Simon Connell (*Chair*) Univ. of Johannesburg, South Africa
Djamel Bradai UST Houari Boumediene, Algeria
Jean-Pierre Ezin Université d'Abomey-Calabi, Benin
Claude Lecomte Chair of IUCr Crystallography in Africa initiative
Ernie Malamud Fermilab, University of Nevada, USA
Brian Masara SA Inst of Physics, Zimbabwe
Genito Maure Universidade Eduardo Mondlane, Mozambique
Prosper Ngabonziza Dept Solid State Quantum Electronics, Rwanda
Ahmadou Wague University of Cheikh Anta Diop, Senegal

Mexico

Matías Moreno (*Chair*) Universidad Nacional Autónoma de México
Abel Moreno Cárcamo Coordinator of the Red de Usuarios de Luz Sincrotrón (RedTULS) and Instituto de Quimica, UNAM
Mayra Cuellar Universidad de Guanajuato
José Reyes Gasga President of the Sociedad Mexicana de Cristalografía and Instituto de Física, UNAM
José Ignacio Jiménez Universidad Nacional Autonoma de México
Tomás Viveros Universidad Autónoma Metropolitana-Iztapalapa

Caribbean

Carlos Cabrera (*Chair*) University of Puerto Rico at Río Piedras
Fidel Antonio Castro Smirnov Advisor to the President of the University of Informatics Sciences, Cuba
Noel Blackburn Brookhaven National Laboratory, USA
Eric Sheppard Hampton University, USA

SE Asia

Supagorn Rugmai (*Chair*) Head of Research Facility, Synchrotron Light Research Institute (SLRI), Thailand
Gwo-Huei Luo President of Asia-Oceania Forum on Synchrotron Radiation Research (AOFSRR) and Director, National Synchrotron Radiation Research Center (NSRRC), Taiwan
Yao-Jane Hsu Secretary General and Staff Scientist, NSRRC, Taiwan
Chia-Hung Hsu Secretary General and Staff Scientist, NSRRC, Taiwan
Michael James Head of Science, Australian Synchrotron

Middle East

Kirsi Lorentz (*Chair*) The Cyprus Institute, Nicosia, Cyprus
Roy Beck-Barkai Tel-Aviv University, Israel
Musa Mutlu Can Istanbul University, Turkey
Ahmed Farghaly National Research Center, Cairo, Egypt
Jamal Ghabboun Bethlehem University, Palestine

Pacific Islands

To be appointed

LAAAMP Supporting and Collaborative Partners

UNESCO
ICSU Regional Office for Africa
ICSU Regional Office for Latin America & the Caribbean
International Union of Materials Research Societies (IUMRS)
International Centre for Theoretical Physics (ICTP)
TWAS
SESAME Light Source
African Light Source (AfLS) Steering Committee
Cuban Light Source Initiative
Puerto Rican Light Source Initiative
Lightsources.org
Mexican Physical Society
European Physical Society (EPS)
Association of Asia Pacific Physical Societies (AAPPS)
Interdisciplinary Consortium for Research and Educational Access in Science & Engineering
Triangle Science, Education & Economic Development (TriSEED Consultants), LLC
University of California - Los Angeles (UCLA)
….

LAAAMP Participating Advanced Light Sources

Advanced Light Source (ALS), Lawrence Berkeley National Laboratory (LBNL)
Advanced Photon Source (APS), Argonne National Lab (ANL)
ALBA Light Source
Australian Synchrotron, Australian Nuclear Science and Technology Organization (ANSTO)
Canadian Light Source
DELTA Light Source
Elettra Light Source
European Synchrotron Radiation Facility (ESRF)
MAX IV Laboratory
National Synchrotron Light Source-II (NSLS-II), Brookhaven National Lab (BNL)
Photon Factory, Institute of Materials Structure Science (IMSS) of KEK
Pohang Accelerator Laboratory
SESAME Light Source
SIAM Photon Source (SPS), Synchrotron Light Research Institute (SLRI)
SLAC National Accelerator Laboratory
Taiwan Photon Source (TPS), National Synchrotron Radiation Research Center (NSRRC)
…

LAAAMP and AfLS: a tight connection

Simon H. Connell and Sekazi K. Mtingwa, Chairs of the AfLS Steering Committee

M. Zema (right) holding the Speaking stick

The idea of *LAAAMP* started during the 1st African Light Source Conference and Workshop at the ESRF, Grenoble in 2015 when ***LAAAMP* co-founders Sekazi Mtingwa, Sandro Scandolo and Michele Zema** met for the first time and discussed about a joint IUPAP-IUCr proposal to be submitted to former ICSU (now ISC) Grants Programme 2016-2019.

Lightsources for Africa, the Americas, Asia and Middle East Project
Executive Committee: Michele Zema (Chair), Marielle Agbahoungbata, Sekazi Mtingwa, Özgül Öztürk, Sandro Scandolo

https://laaamp.iucr.org

The African Light Source Foundation
Executive Committee: Simon Connell (Chair), Sekazi Mtingwa, Saphina Biira, Thierry D'Almeida, Tabbetha Dobbins, Seham K. Abdel-Aal, Nkem Khumbah, Brian Masara, Genito Maure, Edward Mitchell, Armindo Mussungo, Prosper Ngabonziza, Lawrence Norris, Tshepo Ntsoane, Ahmadou Wague, Herman Winick

https://www.africanlightsource.org/

MEMORANDUM OF UNDERSTANDING

between

LAAAMP and the African Light Source Foundation

WHEREAS, *the Light Sources for Africa, the Americas, Asia and Middle East Project (LAAAMP)* and the African Light Source Foundation are partnering in order to collaborate on capacity building and fundraising for capacity building related to synchrotron and X-ray training for Africa; and

LAAAMP Tasks

Regional Committees develop **Strategic Plans** for each Region	TASK 1
Establish an AdLS/Crystallography **Colloquium Programme** in each Region	TASK 2
Publish and Disseminate an AdLS/Crystallography **Information Brochure**	TASK 3
Promote and Facilitate Researcher and Student **Short- & Long-Term Visits/Study** at International AdLS and Crystallography Facilities and Schools (*including IUCr-UNESCO OpenLabs*)	TASK 4
Convene a **Meeting at UNESCO** Headquarters in Paris to Present the *Strategic Plans* for the Regions and Launch the *Business Plans*	TASK 5

TASK 1: *Regional strategic plans*

https://laaamp.iucr.org/tasks/strategic-plans

TASK 2: *LAAAMP* Colloquium Programme

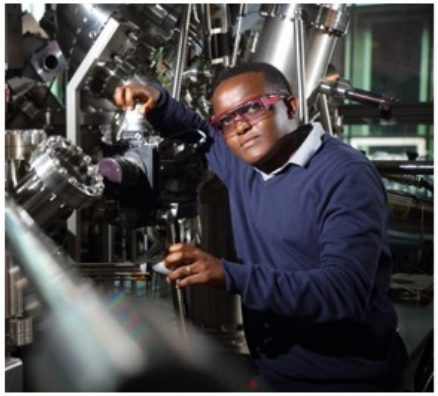
The Colloquium Programme dispatches experienced AdLS users and crystallographers to universities and other institutions to give presentations on the capabilities of AdLSs and crystallography and engage in discussions on how they can enhance researchers' investigations and offer career opportunities for university students. While in a given location, the lecturers will visit government officials to inform about the importance of investing into science and AdLS/crystallographic disciplines in particular.

COSTA RICA

4 Dec 2017

Diego G. Lamas

National University of San Martín and and CONICET, Argentina; former President of LACA



RWANDA

15-20 Dec 2017

Prosper Ngabonziza

Max-Planck-Institute for Solid State Research, Department of Solid State Quantum Electronics, Stuttgart, Germany

BENIN

4-5 May 2018

Thierry d'Almeida

Senior Research Scientist at CEA, Commissariat à l'Energie Atomique

CIF*iesta*

1 Sept 2019

James Hester

OPAL neutron source, ANSTO, Australia

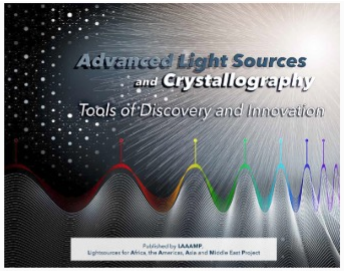
X-TechLab at Sèmè City, Benin

X-Ray Techniques for Sustainable Development

Thierry d'Almeida presenting LAAAMP and the X-TechLab project to the Cabinet of the Government of Benin.

X-TechLab is aimed at **training** Master and Ph.D. students from Benin and neighbouring countries every year, and at **establishing a permanent user research facility** with experienced, permanent staff to act as a hub for the region.

TASK 3: *LAAAMP brochure*

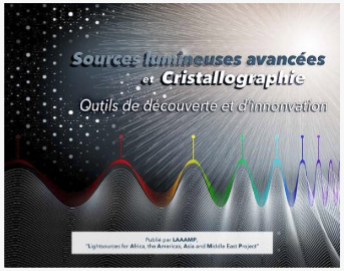


LAAAMP Brochure, Version 2
Language: English

(PDF file, 5.4 MB)

LAAAMP Brochure, Version 2
Language: Spanish

(PDF file, 4.7 MB)



LAAAMP Brochure, Version 2
Language: French

(PDF file, 4.7 MB)

LAAAMP Brochure, Version 2
Language: Arabic

(PDF file, 9.2 MB)

LAAAMP Brochure, Version 2
Language: Portuguese

(PDF file, 5.1 MB)

The *LAAAMP* brochure "*Advanced Light Sources and Crystallography: Tools of Discovery and Innovation*" is available in **English**, **Spanish**, **French**, **Arabic** and **Portuguese**.

Translations have been made available thanks to a collaboration with the International Atomic Energy Agency (IAEA).

Brochure editor: **Ernie Malamud**

DOWNLOAD FOR FREE at
https://laaamp.iucr.org/tasks/brochure

TASK 4: FAculty-STudent (FAST) teams visits at AdLSs

Eligibility

Faculty members at universities in Africa, the Caribbean, Mexico, SE Asia, Middle East. Interested in using AdLSs to further one's research and training endeavors. Previous experience with using AdLSs is limited to a year or less. Ability to spend 2 months as a full-time visitor in residence at an AdLS that is a *LAAMP* collaborative partner.
Student registered as full-time Ph.D. student and supervised by the Faculty member.

Categories

Continuing and **New** applications are considered.

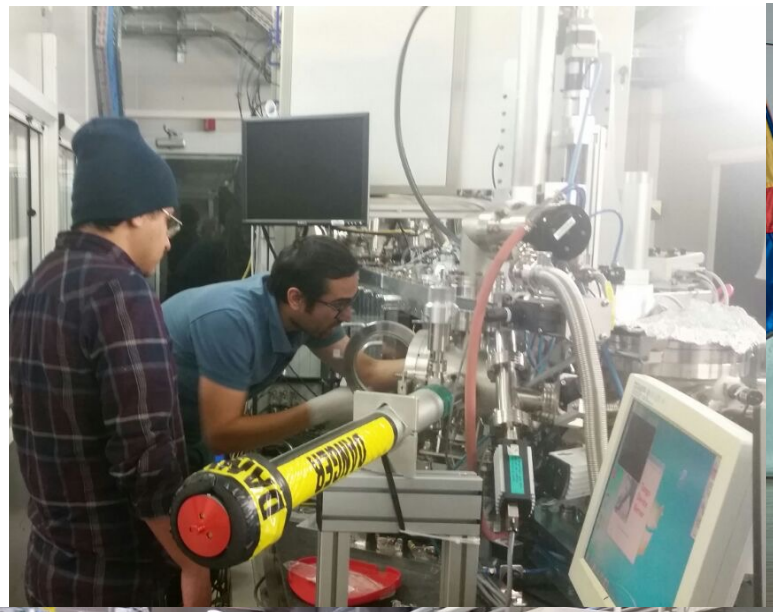
Financial Support

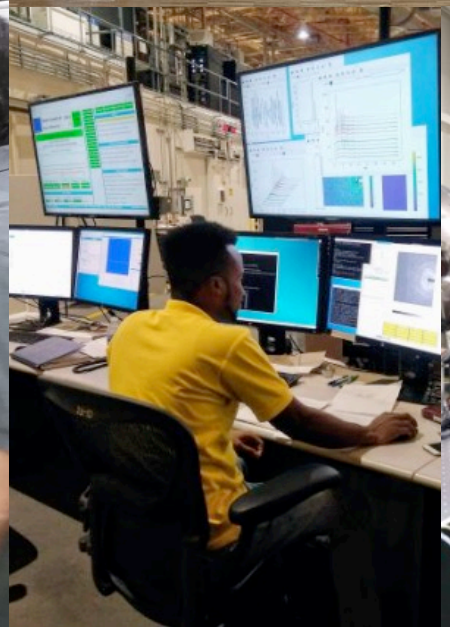
LAAAMP provides **2,000 Euros per person** to cover transportation and (partially) accommodation costs. The remainder of accommodation and subsistence should be negotiated with the host AdLS and other sources of support.

Deliverables

- ✓ 10-page description of the research conducted, including any publications that result.
- ✓ All publications resulting from the visits must acknowledge the support provided by IUPAP-IUCr LAAAMP within the ICSU Grants Programme 2016-2019.
- ✓ 3-page report that evaluates the non-scientific aspects of the visit, including positive experiences as well as ways that the visit could be enhanced in the future.

FAculty-STudent (FAST) teams visits at AdLSs





FORMER *LAAAMP* AWARDEES ARE THE FIRST SESAME USERS

On 17 July 2018, Dr Kirsi Lorentz, Grigoria Ioannou and their colleagues from the Cyprus Institute arrived at SESAME to perform the first experiment at the XAFS/XRF beamline at SESAME.

Kirsi and Grigoria were awarded a *LAAAMP* FAST grant in 2017 and a continuing grant in 2018. Thanks to these grants, they were trained at the ESRF.

SPARC

SYNCHRONIZING PARTNERS TO ADVANCE RESEARCH CHARACTERIZATION (SPARC)

SPARC initiative provides "a little bit of light" for measuring samples via mail-in to synchrotrons.

WE FACILITATE:

1. understanding sample requirements
2. understanding available techniques
3. help in the beamtime proposal writing process
4. list of mail-in sample programs around the world

SPARC is an ideal way to get an idea of how your project might benefit from synchrotron use.

To find out whether your project would benefit from this program, fill out the application form **here**.

ADDITIONAL NOTES

Response times are typically 2-3 weeks.
Access to measured data could take up to 6 months.

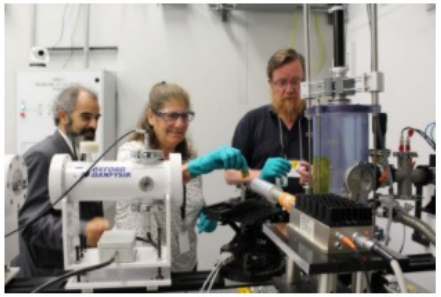
SPARC initiative leader: **Tabbetha Dobbins**, Rowan University, Glassboro, NJ, USA

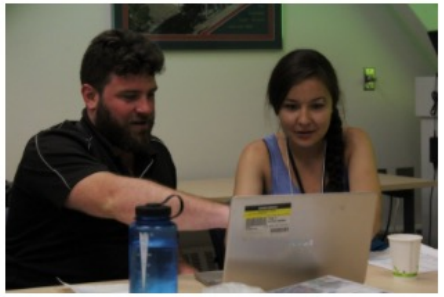
Canadian Light Source | Centre canadien de rayonnement synchrotron

LAAAMP & CLS Teachers' Workshop 2021

Professional Development

Educators' Science Projects 2021





Open to high-school science teachers from Africa

An IUCr-UNESCO-*LAAAMP* OpenLab is being planned to be held in association with the next SESAME Users' Meeting in 2022.

Organizers:

Özgül Öztürk, *LAAAMP* Executive Committee and SESAME Users' Committee
Andrea Lausi, SESAME Scientific Director

SESAME

IUCr-UNESCO-*LAAAMP* OpenLab

LAAAMP Events

24th IUCr Congress, Hyderabad, India
LAAAMP kick-off meeting

World Science Forum 2017, Jordan
Light Sources and Crystallographic Sciences for Sustainable Development

ICTP, Trieste, 2018
LAAAMP midterm workshop

CILAC 2018, Panama City
Implementing Advanced Light Source facilities in Latin America and the Caribbean for sustainable socio-economic development

World Science Forum 2019, Budapest
Basic Sciences Infrastructures for Ethical and Responsible Collaborative Development

Joint meeting of the

Pan African Conference on Crystallography - PCCr2

and

The African Light Source Conference - AfLS2

Accra (Ghana), 28 January – 2 February 2019

LAAAMP and AfLS: a tight connection

Simon H. Connell (AfLS) and Michele Zema (LAAAMP) discussing with Prof. Kwabena FRIMPONG-BOATENG, Minister of Environment, Science, Technology and Innovation of Ghana, at PCCr2, Accra, Ghana.

The major follow-up of PCCr2 was the formal support given to the African Light Source initiative by the **President of Ghana Nana Addo Dankwa AKUFO-ADDO** and facilitated by Minister Kwabena FRIMPONG-BOATENG.
Thanks to the Government of Ghana, AfLS is an official project of the African Union (AU) and ECOWAS.

Simon Connell (AfLS), **Michele Zema** (IUCr, *LAAAMP*) and **David Dodoo-Arhin** (PCCr2-AfLS2 LOC) meet **Kwabena Frimpong-Boateng**, Minister for Environment, Science, Technology and Innovation of the Republic of Ghana.

The African Light Source Project

Ghana News Agency
Speed, Accuracy & Objectivity

Tuesday 29th January, 2019

Ghana to champion African Light Source – Akufo-Addo

By Iddi Yire, GNA

Accra, Jan. 29, GNA – Ghana will champion the African Light Source (AfLS) to make it an official project of the African Union (AU) and ECOWAS, President Nana Addo Dankwa Akufo-Addo, has said.

President Akufo-Addo made the disclosure on Tuesday, in a speech read on his behalf at the opening of the Joint Second International Conference of the African Light Source (AfLS2) and Pan African Conference on Crystallography (PCCr2) in Accra.

A light source is a seed and magnet for high tech industry and all kinds of associated research institutions in all fields.

The AfLS is a growing movement seeking to construct an advanced light source somewhere on the African continent in the near future.

It would be the most important, common, shared, very-large scale, scientific infrastructure for Africa.

Crystallography is the science that examines the arrangement of atoms in solids; there is therefore, a connection of science of Crystallography and much of the work being done at the Advanced Light Source Facilities.

President Akufo-Addo said Ghana would continue to advocate for multilateral relationships between the

"[…] the African Light Source will contribute significantly to the African Science Renaissance, the return of the African Science Diaspora, enhancement of university education, the training of new generation of young researchers, the growth of competitive African industries and the advancement of research that addresses issues, challenges and concerns relevant to Africa."

@Cr2021E
#ePCCr21

ePCCr

PAN AFRICAN CONFERENCE ON CRYSTALLOGRAPHY ONLINE

Crystallography, an interdisciplinary science for the Africa of the future

https://events.saip.org.za/event/170/

15 – 19 November 2021

Held jointly with The African Physical Society (AfPS) and the African Light Source (AfLS) conferences (15-19 November).

This virtual conference is open to all with an interest in crystallography in Africa.

Registration is free.

Conference topics

Inorganic materials
Crystal engineering
Structural chemistry
Crystallographic Databases,
Crystallography for life sciences
Large installations for emerging countries

Invited speakers

Dr Susan Reutzel Edens, CCDC
Prof Neil Champness, University of Birmingham
Prof Bill Jones, University of Cambridge
Dr Emile Engel, KTH Royal Institute of Technology
Dr Tendai Gadzikwa, Kansas State University
Prof Richard Garratt, University of São Paulo
Dr Eunice Nyawade, Jomo Kenyatta University of Agriculture and Technology

AfPS

Joint virtual event with AfLS and AfPS.

Under the auspices of the Steering Committee of the African Crystallographic Association (AfCA)
https://www.iucr.org/outreach/africa/afca
https://www.facebook.com/AfricanCrystallographicAssociation/