Protein crystallography in Jordan: “using a bright light for a bright future”

Areej Abuhammad
Faculty of Pharmacy
University of Jordan
24 April 2015
• Introduce Jordan
• Introduce myself
• Protein crystallography in Jordan
  – Inspiration
  – Plan
  – Activities
Jordan

- Geopolitics
- Population 56% <24 YA; 92% <54 YA
- Dramatic developments
  - Synchrotron (SESAME)
  - Nuclear reactor (JRTR)
  - Cell Therapy Centre
  - Nanotechnology Laboratory
  - 43 Universities
- One third of all Jordanians are enrolled in educational facilities.
- Challenges ... many!
JORDAN
Areej Abuhammad

B.Sc., Pharmacy, University of Jordan.
M.Sc., Pharmaceutical Sciences, University of Jordan.
D.Phil., Pharmacology, University of Oxford.
Thesis entitled “Arylamine N-Acetyltransferases from Mycobacteria: Investigations of a Potential Target for Anti-Tubercular Therapy”
Hope
Delicious
Addictive
Miracle
Precious
Frustrating
Adventurous
I should start protein crystallography in Jordan!
Inspiration!

If you build it, they will come.
Protein crystallography in Jordan (PXJ)

Goal
- Get researchers interested in PX

Purpose
- Build a protein crystallisation laboratory

Outcome
- Grants applications and talking to people

Inputs = Activities

- Activities
1. Introducing protein crystallography to people

First participation from Jordan at an IUCr meeting
2. Set up crystallographic calculation facility for data reduction and structure refinement at IMAN1 Supercomputer:
3. Jan 2014: Protein crystallisation facility as part of JRTR (National IAEA Project JOR2014004: 800,000€; 2016-2017)
4. April 2014: The first project in protein X-ray crystallography to be carried out in Jordan: “Structure-based discovery and crystallographic studies of benzoic acid derivatives as novel anti-obesity agents.” (Funded by the Scientific Research Support Fund in Jordan: 150,000JD; 2016-2018)
5. April 2015: Structural Biology Laboratory: MX Beamline + Protein Crystallisation Facility (National SRSF Project: 5,000,000JD; 2016-2018)
6. Building potential future collaborations

“International Collaborations”
7. June 2015: Symposium on Structural Biology
Jordan, a safe island in a turbulent region

The Jordan Research and Training Reactor, JRTR

Synchrotron-light for Experimental Science and Applications in the Middle East

Petra (2-fold symmetry)

IMAN1, Jordan's National Supercomputing Center.

“Jordan, a safe island in a turbulent region”
Thank you!

**Jordan Atomic Energy Commission:**
- HE Dr. Kahlid Toukan
- HE Dr. Khalifeh AbuSaleem

**SESAME:**
- Giorgio Paolucci
- Yasser Khalil

**Jordan’s National Supercomputing Center (IMAN1):**
- Zaid Abudayyeh

**University of Jordan:**
- All my colleagues

**Oxford:**
- Edith Sim
- Elspeth Garman
- Christopher Schofield
- David Stuart
- Susan Daenke

![IAEA logo](IAEA.png)
![The University of Jordan logo](Jordan.png)
![SESAME logo](SESAME.png)