Networking Systems Lab (NSL) Research at CMU-Qatar
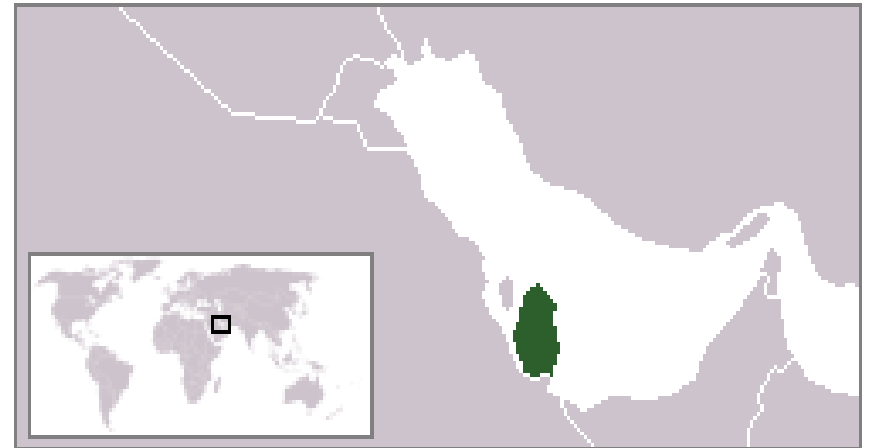
Khaled A. Harras, Ph.D.

Computer Science Faculty

Founder/Director of the NSL

School of Computer Science

Agenda

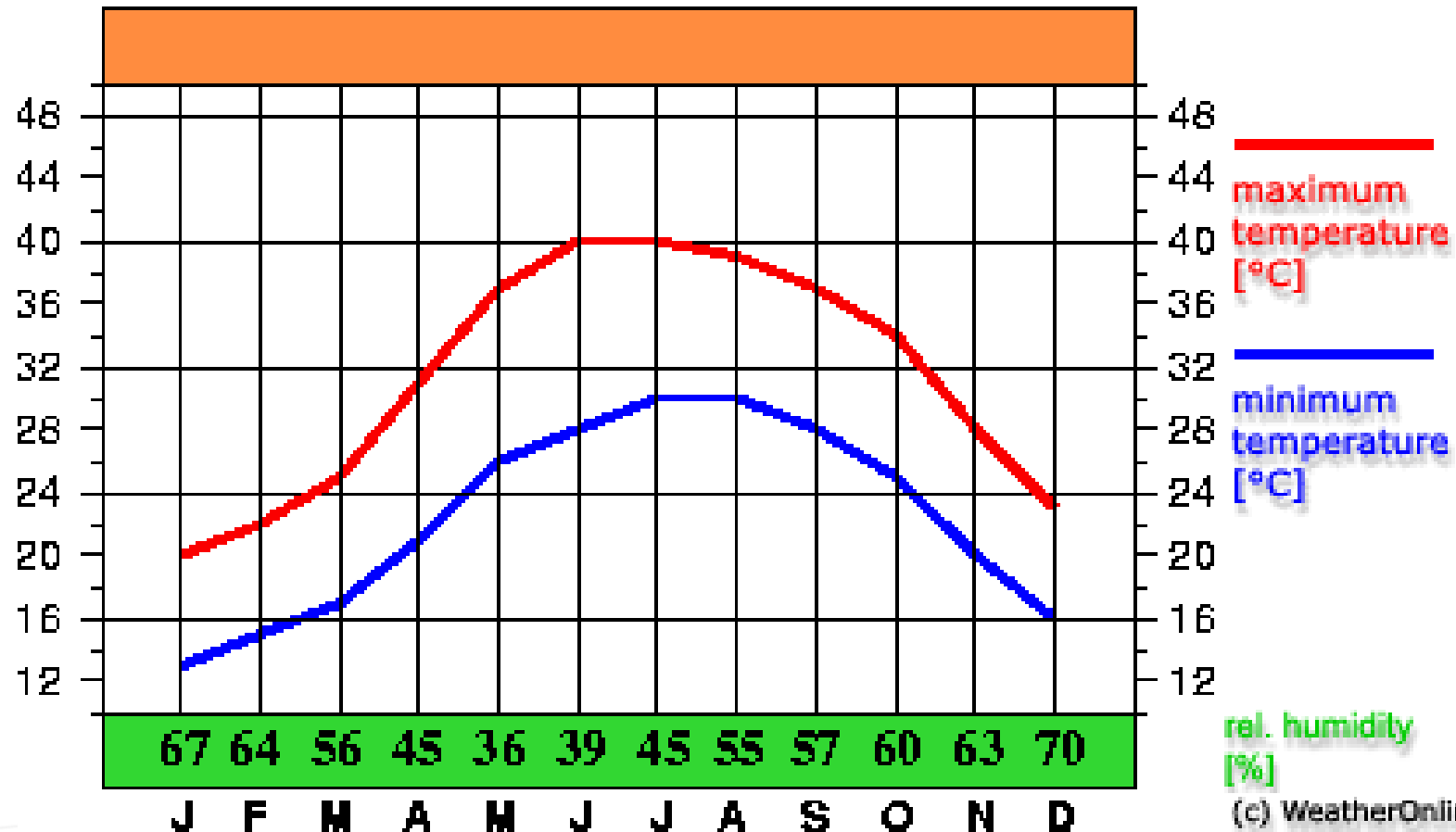- Context: Qatar, QF, CMU-Qatar
- NSL Projects

Qatar

- Area 11,437 km^2
- Population 1.8M (25% Qatari)
- GDP per Capita $102K
- Oil & gas ~70% of GDP
- Natural Gas 15% of world total
- Knowledge based economy in 30 years
- 2.8% of GDP for research (Arab World == 0.2 %)

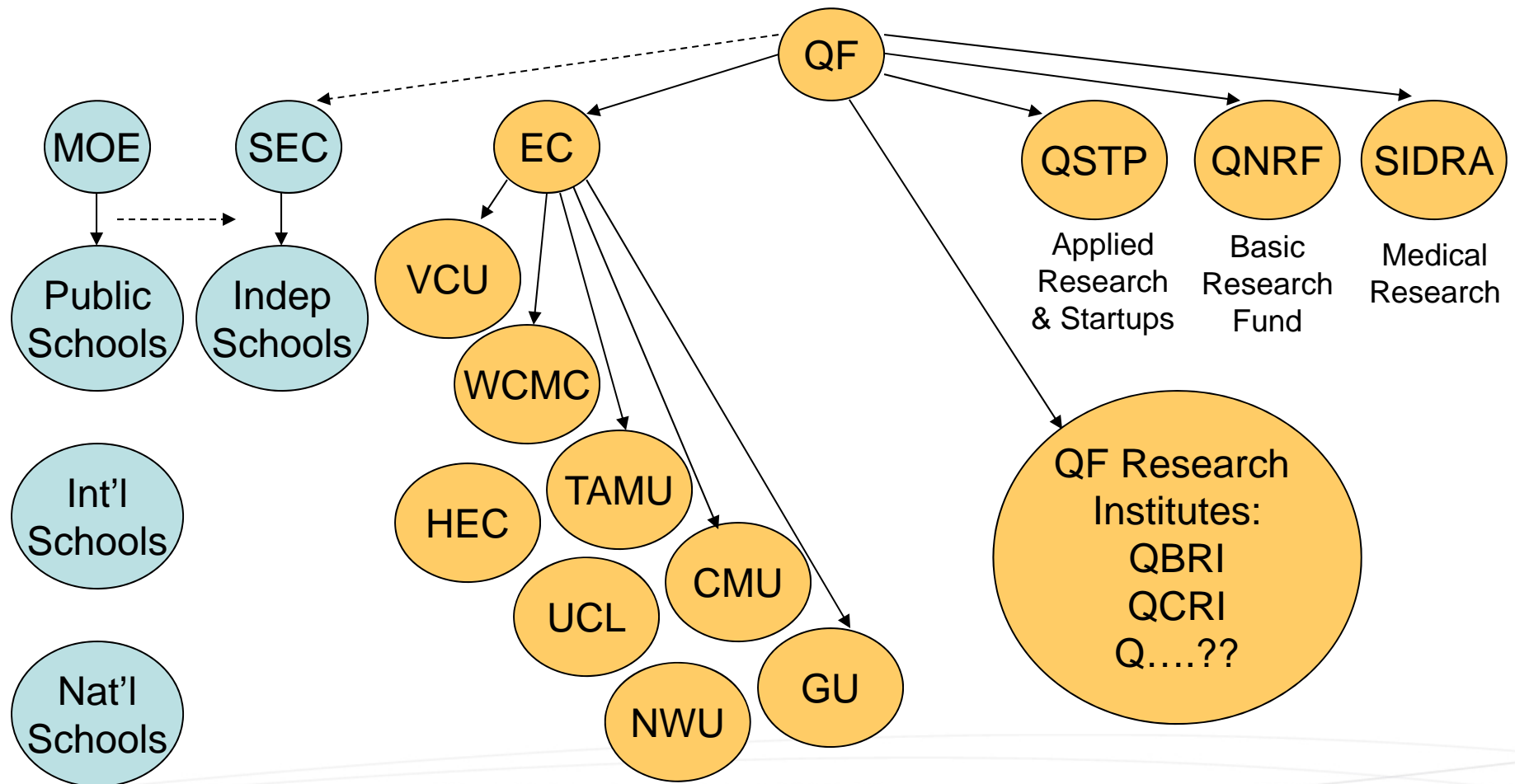# Research is HOT in Qatar
Literally…!

Qatar Foundation

QF

MOE

SEC

EC

QSTP
Applied Research & Startups

QNRF
Basic Research Fund

SIDRA
Medical Research

Public Schools

Indep Schools

VCU

WCMC

Int'l Schools

HEC

TAMU

Nat'l Schools

UCL

CMU

NWU

GU

QF Research Institutes:
QBRI
QCRI
Q….??

Education

Research & Education

جامعة كارنيجي ميلون في قطر
Carnegie Mellon Qatar

January 2011

January 2009

March 2007

January 2005

Carnegie Mellon Qatar

- Carnegie Mellon joined Education City in 2004.

- Carnegie Mellon Qatar currently offers 3 Undergraduate degrees.

- No Qatar degrees.

- Research is conducted in an industry fashion (Postdocs, Research Engineer, Co-Advising Grad students & Interns)

Projects in the NSL

- Delay/Disruption Tolerant Networks
  - Mobile Opportunistic Networks (Social based forwarding, Fairness/Trust/Scalability, Space Syntax and Context Aware forwarding…etc.

- Multi-media Sensor Networks
  - Coverage Problems with static and mobile targets, Network support for multimedia support on multi-hop wireless networks…etc.

- Multi-interface Data Scheduling
  - Parallel Network Architecture, Data bundling, aggregation and data to interface scheduling, deployable solutions...etc.

- Social Pervasive Systems
  - Social and context aware real-time services…etc.