Roger Leslie Anderton Cottrell

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EMPLOYMENT SUMMARY

Period	Employer	Job Title	Activities
1982 on	Stanford Linear Accelerator Center	Assistant Director, Computing Services	Management of networking and computing
1980-82	Stanford Linear Accelerator Center	Manager SLAC Computer Network	Management of all SLAC's computing activities
1979-80	IBM U.K. Laboratories, Hursley, England	Visiting Scientist	Graphics and intelligent distributed workstations
1967-79	Stanford Linear Accelerator Center	Staff Physicist	Inelastic e-p scattering experiments, physics and computing
1972-73	CERN	Visiting Scientist	Split Field Magnet experiment

EDUCATION SUMMARY

Period	Institution	Examinations	
1962-67	Manchester University	Ph.D.	Interactions of Deuterons with Carbon Isotopes
1959-62	Manchester University	B.Sc.	Physics

NARRATIVE

I joined SLAC as a research physicist in High Energy Physics, focusing on real-time data acquisition and analysis in the Nobel prize winning group that discovered the quark. In 1973/3, I spent a year's leave of absence as a visiting scientists at CERN in Geneva, Switzerland, and in 1979/80 at the IBM U.K. Laboratories at Hursley, England, where I obtained United States Patent 4,688,181 for a a dynamic graphical cursor. I am currently the Assistant Director of the SLAC Computing Services group and lead the computer networking and telecommunications areas. I am also a member of the Energy Sciences Network Site Coordinating Committee (ESCC) and the chairman of the ESnet Network Monitoring Task Force. I was a leader of the effort that, in 1994, resulted in the first Internet connection to mainland China. I am also the leader/PI of the DoE sponsored Internet End-to-end Performance Monitoring (IEPM) effort, and the ICFA network monitoring working group.

PUBLICATIONS

The full list of 70 publications is readily available from online databases. I include here only a limited number of recent publications relevant to networking.

DEVELOPING COUNTRIES AND THE GLOBAL SCIENCE WEB, H. Cerdeira, E. Canessa, C. Fonda, R. L. Cottrell, CERN Courier December 2003.

MEASURING THE DIGITAL DIVIDE WITH PINGER, R. Les Cottrell and Warren Matthews, Developing Countries Access to Scientific Knowledge: Quantifying the Digital Divide, ICTP Trieste, October 2003; also SLAC-PUB-10186.

PINGER HISTORY & METHODOLOGY, R. Les Cottrell and Connie Logg, Developing Countries Access to Scientific Knowledge: Quantifying the Digital Divide, ICTP Trieste, October 2003; also SLAC-PUB-10187.

INTERNET PERFORMANCE TO AFRICA, R. Les Cottrell and Enrique Canessa, Developing Countries Access to Scientific Knowledge: Quantifying the Digital Divide, ICTP Trieste, October 2003; also SLAC-PUB-10188.

PATHCHIRP: EFFICIENT AVAILABLE BANDWIDTH ESTIMAION FOR NETWORK PATHS, Vinay Ribeiro, Rudolf Reidi, Richard Baraniuk, Jiri Navratil, Les Cottrell, SLAC-PUB-9732, published at PAM 2003, April 2003.

MONITORING THE DIGITAL DIVIDE, E. Canessa, H. A. Cerdeira, W. Matthews, R. L. Cottrell, SLAC-PUB-9730, CHEP 2003, San Diego, March 2003.

IGRID2002 DEMONSTRATION BANDWIDTH FROM THE LOW LANDS, R. Les Cottrell, Antony Antony, Connie Logg and Jiri Navratil, in Future Generation Computer Systems 19 (2003) 825-837, published by Elsevier Science B. V.; also SLAC-PUB-9560, October 31, 2002

PASSIVE PERFORMANCE MONITORING AND TRAFFIC CHARACTERISTICS ON THE SLAC INTERNET BORDER.
By Connie Logg, Les Cottrell (SLAC). SLAC-PUB-9174, Sep 2001. 4pp.
To appear in the proceedings of CHEP'01: Computing in, High-Energy Physics and Nuclear, Beijing, China, 3-7 Sep 2001.

PASSIVE AND ACTIVE MONITORING ON A HIGH PERFORMANCE RESEARCH NETWORK.
By Warren Matthews, Les Cottrell, Davide Salomoni (SLAC). SLAC-PUB-8776, Feb 2001. 6pp.
Passive and Active Monitoring (PAM) 2001, Amsterdam, April 22 - 24.

THE PINGER PROJECT: ACTIVE INTERNET PERFORMANCE MONITORING FOR THE HENP COMMUNITY.
By W. Matthews, L. Cottrell (SLAC). SLAC-REPRINT-2000-008, May 2000. 7pp.
Published in IEEE Commun.Mag.38:130-136,2000

INTERNATIONAL NETWORK CONNECTIVITY AND PERFORMANCE, THE CHALLENGE FROM HIGH-ENERGY PHYSICS**.** By Warren Matthews, Les Cottrell, Charles Granieri (SLAC). SLAC-PUB-8382, Mar 2000. 18pp. Talk presented at the Internet2 Spring Meeting, Washington D.C., 27 Mar 2000.

INTERNET END-TO-END PERFORMANCE MONITORING FOR THE HIGH-ENERGY NUCLEAR AND PARTICLE PHYSICS COMMUNITY. By Warren Matthews, Les Cottrell (SLAC). SLAC-PUB-8385, Feb 2000. 10pp. Presented at Passive and Active Measurement Workshop (PAM 2000), Hamilton, New Zealand, 3-4 Mar 2000.

PINGER: INTERNET PERFORMANCE MONITORING: HOW NO COLLISIONS MAKE BETTER PHYSICS. By W. Matthews, L. Cottrell (SLAC). SLAC-PUB-8383, Feb 2000. 5pp. Presented at International Conference on Computing in High Energy Physics and Nuclear Physics (CHEP 2000), Padova, Italy, 7-11 Feb 2000.

DISCUSSANT REMARKS ON SESSION: STATISTICAL ASPECTS OF MEASURING THE INTERNET. Br R. Les. Cottrell, published in Proceedings of the 30th Symposium on the Interface, (ISBN 1-886658-05-6).

INTERNET MONITORING IN THE HEP COMMUNITY.By Warren Matthews, Les Cottrell (SLAC), David Martin (Fermilab). SLAC-PUB-7961, Oct 1998. 8pp. Presented at International Conference on Computing in High-Energy Physics

WHAT IS THE INTERNET DOING FOR AND TO YOU? By R.L.A. Cottrell, C.A. Logg (SLAC), D.E. Martin (Fermilab). SLAC-PUB-7416, Jun 1997. 7pp. Talk given at Computing in High-energy Physics (CHEP 97), Berlin, Germany, 7-11 Apr 1997.

LECTURE COURSES

HOW THE INTERNET WORKS: International Nathiagali Summer College Lecture course, given by Les Cottrell in Pakistan, Summer 2001