

PingER Papers and Presentations

Year 2018

Publications and White papers (most recent first)

- [Extension of the PingER Project onto Mobile Devices using Android Applications](#), A. Khan, J. David, R. Bansal, A. Sabitha, A. Bansal, R. Cottrell B. White, Confluence 2019 paper 256, Amity University, India, Dec 2018.
- [Network Performance of PingER data with respect to growth of Telecom industry in India](#), N. Madan, A. Sabitha, A. Bansal, R. Cottrell, B. White, Confluence 2019 paper 255, Dec 2018.
- [Substituting Missing Values in End-to-end Internet Performance Measurements using k-Nearest Neighbors](#), S. Ali, G. Wang, X Xing, R. Cottrell, 2018 IEEE 16th Int. Conf. on Dependable, Autonomic & Secure Comp., 16th Int. Conf. on Pervasive Intelligence & Comp., 4th Int. Conf. on Big Data Intelligence & Comp., and 3rd Cyber Sci. & Tech. Cong.
- [A Blockchain-Based Decentralized Data Storage and Access Framework for PingER](#), Ali, Saqib; Wang, Guojun; White, Bebo; Cottrell, Roger Leslie,
- [Clustering Analysis of PingER Network Data for Vardha Cyclone](#), A. Gupta, R. Gupta, H. Sinha, A. Sabitha, A. Bansal. R. Cottrell, B White, Published in Confluence 2018, Amity University.

Year 2017

Publications and White papers (most recent first)

- Detecting Anomalies from End-to-End Internet Performance Measurements (PingER) using Cluster Based Local Outlier Factor, Saqib Ali, Guojun Wang, Roger Leslie Cottrell, Taya Anbar, Presented at the 2017 IEEE International Symposium on Parallel and Distributed Processing with Applications and 2017 IEEE International Conference on Ubiquitous Computing and Communications (ISPA/IUCC)
- [Internet Performance Analysis of South Asian Countries using End-to-End Internet Performance Measurements](#), S. Ali, G. Wang, R. Cottrell, S. Masood, paper #20 entitled "Internet Performance Analysis of South Asian Countries using End-to-end Internet Performance Measurements" to the 16th IEEE International Conference on Ubiquitous Computing and Communications (IUCC 2017), Guangzhou, China, December 12-15, 2017
- [BIND: An indexing strategy for big data processing](#), Adib Habbal, Fatima Binta Adamu, Suhaidi Hassan, R. Les Cottrell, Bebo White, Mustafa Kaiiali, Ahmad Samer Wazan, presented at [Region 10 Conference, TENCON 2017 - 2017 IEEE](#)
- Missing Values imputation in PingER Internet End-to-end Performance Measurements using k-nearest neighbors (k-nn), S. Ali, R. Cottrell, G. Wang, submitted to the Internet Measurement Conference 2017 London, UK <http://conferences.sigcomm.org/imc/2017/>
- [Correlation Analysis on Real-Time Tab-Delimited Network Monitoring Data](#), A Pan, J Makumdar, A Bansal, B. White, R Cottrell, SLAC-PUB-17143, 8/30/2017.
- [2016-2017 Report of the ICFA-SCIC Monitoring Working Group](#), S McKee, R. Cottrell, I Vukotic, M Babik, Feb 2017
- [Implementation of PingER on Android](#), R Sampson, S Rajappa, A Sabitha, A Bansal, B White, R Cottrell, 7th International Conference on Cloud Computing, Data Science and Engineering Jan 2017, [published in IEEE digital library](#)

Talks (most recent first)

- [Implementation of PingER on Android](#), R Sampson, S Rajappa, A Sabitha, A Bansal, B White, R Cottrell, 7th International Conference on Cloud Computing, Data Science and Engineering, 12th - 13th Jan 2017, Amity University, Sector - 125 Campus, Noida, Uttar Pradesh, India

Year 2016

Publications and White papers (most recent first)

- [Applying data mining and visualization techniques on PingER data](#), Aqsa Hameed, MS Computer Science thesis, 2016
- [Application for the emulation of PingER on android devices](#), Pan, A., Bansal, A., White, B., Cottrell, R. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016 , art. no. [7508178](#), pp. 537 - 541.
- [Correlation analysis on real-time tab-delimited network monitoring data](#) , Pan, A., Majumdar, J., Bansal, A., White, B., Cottrell, R.L. A. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016, art. no. [7508126](#) , pp. 263 - 267. Also SLAC-PUB-17143.
- [Analysis and clustering of PingER network data](#), Mal, A., Sabitha, A.S., Bansal, A., White, B., Cottrell, L. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016, art. no. [7508127](#), pp. 268 - 273.
- [Application for the emulation of PingER on android devices](#), Pan, A., Bansal, A., White, B., Cottrell, R. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016 , art. no. [7508178](#), pp. 537 - 541.
- [Correlation analysis on real-time tab-delimited network monitoring data](#) , Pan, A., Majumdar, J., Bansal, A., White, B., Cottrell, R.L. A. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016, art. no. [7508126](#) , pp. 263 - 267.
- [Analysis and clustering of PingER network data](#), Mal, A., Sabitha, A.S., Bansal, A., White, B., Cottrell, L. Proceedings of the 2016 6th International Conference - Cloud System and Big Data Engineering, Confluence 2016, art. no. [7508127](#), pp. 268 - 273.
- [Applying Big Data Warehousing and Visualization Techniques on PingER Data](#), A Hameed, S. Ali, R. Cottrell, B. White, IEEE/ACM 3rd International Conference on Big Data Computing, Applications and Technologies, 2016
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2016 [Report on Networking](#), compiled by Shawn McKee and Les Cottrell on behalf of the working group, January 2016.

Talks (most recent first)

- [Internet Weather in ASEAN Countries](#), Adib Monzer, ICSEC 2016, Chiangmai Thailand

- [PingER: Monitoring the World's Networks](#), Les Cottrell, Invited talk at the [Meet BdREN 2016 meeting](#), Dhaka Bangladesh, April 2016.
- [Monitoring the World's Networks, PingER project](#), Les Cottrell et al, presentation for ICFA

Year 2015

Publications and White papers (most recent first)

- [Survey on Big Data Indexing strategies](#), also [SLAC-PUB-16460](#), Fatima Bintu Adama, Adib Habbal, Suhaidi Hassan, R. Les Cottrell, Bebo White, Ibrahim Abdullahi, , submitted to [NETAPPS 2015](#).
- [Worldwide Internet Performance Measurements Using Lightweight Measurement Platforms](#), also [SLAC-PUB-16461](#), R. Les Cottrell, Thiago Barbosa, Bebo White, Johari Abdullah and Topher White, submitted to [NETAPPS 2015](#).
- [Applying Data Warehousing and Big Data Techniques to Analyze Internet Performance](#), also [SLAC-PUB-16464](#), T. M. S. Barbosa, R. F. Souza, S. M. S. Cruz, M. L. Campos and R. L. Cottrell, submitted to [NETAPPS 2015](#).
- [PingER Malaysia-Internet Performance Measuring Project: A Case Study](#), also see [SLAC-PUB-16462](#), Saqib Ali, R. Les Cottrell, Anjum Naveed, submitted to [NETAPPS 2015](#).
- [Adaptive Geolocation of Internet Hosts](#), also [SLAC-PUB-16463](#), Raja A.A. Khan, Roger L.A. Cottrell, Anjum Naveed, SLAC-PUB-16360, submitted to [NETAPPS 2015](#).
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2015 [Report on Networking](#), compiled by Les Cottrell and Shawn McKee on behalf of the working group, January 2015.

Talks (most recent first)

- [PingER Malaysia-Internet Performance Measuring Project: A Case Study](#), Saqib Ali, R. Les Cottrell, Anjum Naveed, presented at NetApps2015, Dec 2015
- [Applying Data Warehousing and Big Data Techniques to Analyze Internet Performance](#), Thiago Barbosa, Renan Souza, Sergio Serra, R. Les Cottrell presented at NetApps2015, Dec 2015
- [Worldwide Internet performance measurements using a Raspberry Pi](#), presented at NetApps2015, Dec 2015. Also a [video](#).
- [Adaptive Geolocation of Internet Hosts](#), Raja A. A. Khan, Anjum Naveed, R. Les Cottrell presented at NetApps2015, Dec 2015
- [A Survey on Big Data Indexing Strategies](#), Fatima Bintu Adama, Adib Habbal, Suhaidi Hassan, R. Les Cottrell, Bebo White, Ibrahim Abdullahi, presented at NETAPPS2015, Dec 2015.
- [Monitoring the World's Networks, Les Cottrell et. al.](#), presented by Prof Harvey Newman at the [ICFA meeting CERN February 2015](#).
 - Also see the 2015 Reports and Presentation slide deck of the ICFA Standing Committee on Inter-regional Connectivity (SCIC) available at <http://icfa-scic.web.cern.ch/ICFA-SCIC/meetings.html>
 - The presentation to ICFA by SCIC is also available at http://monalisa.caltech.edu:8080/Slides/Public/SCICReports2015Final/ICFASCIIBriefPresentationV2_022515.pdf
 - The executive summary is at: http://monalisa.caltech.edu:8080/Slides/Public/SCICReports2015/ICFASCIIC2015Report_ExecutiveSummaryV3022115.docx

Year 2014

Publications and White Papers (most recent first)

- [PingER and Internet Performance in Malaysia](#) case study, Saqib Ali, December 2014
- [Seminar on Internet Performance Measurement and Monitoring](#), Kuala Lumpur 26 Nov, 2014
- [Linked Open Data Publication Strategies: Application in Networking Performance Measurement Data](#), Renan Souza, Les Cottrell, Bebo White, M. Luiza Campos, Marta Mattoso, SLAC PUB 15960, SLAC-PUB 15950., May 2014.
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2014 [Report on Networking](#), compiled by Les Cottrell, Shawn McKee and Raja Asad on behalf of the working group, January 2014

Talks (most recent first)

- [PingER: Malaysia Initiative](#), Johari Abdullar, Presented at [MYREN InternetWorks Research SIG presented Research Seminar on Internet Performance Measurement and Monitoring](#), Nov 26, 2014.
- [Project PingER: Background and Future](#). Anjum Naveed, Presented at MYREN Research Seminar Nov 26, 2014
- [Mobility](#), lecture prepared by Les Cottrell for the School on Space Weather, Koudougou University, Burkina Faso, November 15, 2014.
- [Network Problem diagnosis for non-networkers](#), lecture prepared by Les Cottrell for the [School on Space Weather, Koudougou University](#), Burkina Faso, November 15, 2014.
- [The Internet: where did it come from, what are the challenges](#), lecture prepared by Les Cottrell for the School on Space Weather, Koudougou University, Burkina Faso, November 15, 2014.
- [Africa and the Internet](#), talk prepared by Les Cottrell for the School on Space Weather, Koudougou University, Burkina Faso, November 15, 2014.
- [Linked Open Data Publication Strategies: Application in Networking Performance Measurement Data](#), Renan Souza, Les Cottrell, Bebo White, Maria Campos, Marta Mattoso, poster presented at the [BigDataScience - Stanford](#) conference, CA, USA May 27-31, 2014.
- [PingER Project](#), presentation to Dave MacFarlane, associate Lab Director for PPA, SLAC, March 2014
- [Monitoring the World's Networks](#), Les Cottrell et. al., presented by Prof Harvey Newman at the [ICFA meeting CERN February 2014](#).

Year 2013

Publications and White Papers (most recent first)

- [Africa 'leapfrogs' to wider Internet access](#). Al Jazeera, Sept 2, 2013. Also appeared on [SlashDot Front Page](#), Sept 3, 2013, referenced in SLAC Today as "[SLAC expert weighs in on Internet access in Africa](#) ", Sept 6, 2013
- [PingER project data on the health of Africa's Internet networks](#), Africa, April 15, 2013.
- [Why continuous investment and improvement in African ICT infrastructure is important](#), contributed by Les Cottrell to EGY Africa News, Number4, February, 2013.
- [Pinging Africa](#) , R. Les Cottrell, IEEE Spectrum February 2013. Also see [A Simple Tool for Measuring Digital Development](#) , by R. Les Cottrell, IEEE Spectrum February 2013. This is derived from SLAC-PUB-15333.
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2013 [Report on Networking](#), compiled by Les Cottrell, Shawn McKee and Anjum Naveed on behalf of the working group, January 2013.

Talks (most recent first)

- [PingER: Research Opportunities and Trends](#), by Les Cottrell, [PingER workshop](#) , Universiti Malaya, Kuala Lumpur, Malaysia, June 26, 2013
- [PingER: Navigating the Web Site and Mining the Data](#), by Les Cottrell, [PingER workshop](#) , Universiti Malaya, Kuala Lumpur, Malaysia, June 24th, 2013
- [The Emergence of the Internet and Africa](#), by Les Cottrell, Monday SLAC-wide colloquium, May 6, 2013

Year 2012

Publications and White Papers (most recent first)

- [PingER Workshop Brochure](#), UNIMAS, Malaysia Dec 13-14, 2012
- [Submission to the Silicon Valley Tech Awards 2012, Nov 2012](#).
- [ICSU Grant Progress Report](#), see section 3 on PingER.
- [m-Learning in Classrooms and Research](#), by Les Cottrell, June 2012. Contribution to booklet released under the Creative Commons. The booklet is to promote the open book on [Mobile Science](#) (m-science)
- [PingER status report Jun 2012](#), for [eGYAfrica](#)
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2012 [Report on Networking](#), compiled by Les Cottrell, Shawn McKee and Amber Zeb on behalf of the working group, January 2012.

Talks (most recent first)

- [Verbal introduction to chapter 1 of "The Internet, Mobile Computing and Mobile Phones in Developing Countries"](#), June 12, 2012, [text version](#)
- [PingER Installation](#), Kashif Satar, notes from hands on session at the PingER Workshop at the University of Malaysia in Sarawak, December 13-17, 2012
- [PingER: Navigating the web site and mining the data](#), Les Cottrell at the PingER Workshop at the University of Malaysia in Sarawak, December 13-17, 2012
- [PingER in Pakistan](#), Kashif Satar, at the PingER Workshop at the University of Malaysia in Sarawak, December 13-17, 2012
- [PingER: Actively measuring the worldwide Internet's end-to-end performance](#) Extended version, by Les Cottrell at the PingER Workshop at the University of Malaysia in Sarawak, December 13-17, 2012
- [PingER Deployment for PERN Performance Monitoring](#), Anjum Navid, at the Malaysia National Research and Education (MYREN) meeting, Kuala Lumpur, Malaysia, Dec 12, 2012.
- [PingER: Actively measuring the worldwide Internet's end-to-end performance](#), by Les Cottrell at the Malaysia National Research and Education (MYREN) meeting, Kuala Lumpur, Malaysia, Dec 12, 2012.
- [The World-wide Digital Divide and Africa](#), Les Cottrell presentation at the eGYAfrica 2012 Workshop, Better Internet Connectivity for Research and Education in Africa, Nairobi, Kenya, Oct 24-26, 2012.
- [PingER: getting a lot from a simple utility](#), Les Cottrell, Summer 2012 Joint Techs, Stanford CA, July 16, 2012
- [MOU between SLAC & the University of Malaysia in Sarawak \(UNIMAS\)](#), presentation by Les Cottrell to SLAC CIO, June 15, 2012.

Year 2011

Publications and White Papers (most recent first)

International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity (ICFA-SCIC) 2011 [Report on Networking](#), compiled by Les Cottrell, Shawn McKee and Zafar Gilani on behalf of the working group, January 2011.

Talks (most recent first)

- [Quantifying the worldwide Digital Divide: the emergence of Africa](#), Les Cottrell, ISPA/iWeek, Pretoria, S. Africa, Sep 21, 2011
- [Table of Contents of Lectures](#) by Les Cottrell at [Ecole SIG on Nouvelles Technologies](#) en Democratic Republic Congo, 12-17 Septembre, Organisee par l'Universite de Kinshasa
 - The Internet: where did it come from, what are the challenges ([English](#), [French](#))).
 - Internet, how is it performing ([English](#), [French](#)).
 - Cell phones, how do they work ([English](#), [French](#)).
 - Smartphones and other mobile computers ([English](#), [French](#)).
 - [Network Problem Diagnosis for non-networkers](#).
 - [Pinger Case Studies](#).
- [Quantifying the Worldwide Digital Divide: The Emergence of Africa](#), Presented by Les Cottrell at the American Physical Society annual meeting, Anaheim, April 30-May 2nd 2011
- [PingER end to end Internet measurements: what we learn](#), presented by Les Cottrell at the OARC/TechDay for the ICANN San Francisco March 7th, 2011
- [PERN Network Analysis, 2010-2011](#), presented to PERN March 2nd 2011.
- [Monitoring the World's Networks](#), prepared by Les Cottrell, Zafar Gilani, presented to ICFA by Harvey Newman, February 2011

Year 2010

Publications and White Papers (Most recent first)

- [The Internet, Mobile Computing and Mobile Phones in Developing Countries](#), Les Cottrell prepared for book "m-Science Sensing, Computing and Dissemination" ISBN 92-95003-43-8 published by ICTP Trieste, November 2010.
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity ([ICFA-SCIC](#)) [2010 Report](#) on Networking, compiled by Les Cottrell, Fahad Satti, Shawn McKee and Umar Kalim on behalf of the working group, January 2010.

Talks (Most recent first)

- [African Internet Performance, Fibres and the Soccer World Cup](#), prepared by Les Cottrell, presented at the eGYAfrica conference, Accra, November 2010.
- [Monitoring the World's Networks](#), Harvey Newman and Les Cottrell, Slides prepared for [CHEP10](#), in Taipei, Taiwan October 2010
- [African Internet Performance, Fibres and the Soccer World Cup](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Syllabus of Egyptian lectures](#)
- [Internet History and needs](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [How is the Internet performing](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Cell Phones](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Smart Phones and other mobile computers](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Network Problem diagnosis for non-networkers](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Network Measurements](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010
- [Geolocation](#), Les Cottrell, lecture presented at SPACE Weather School: Basic theory & hands-on experience, University of Helwan / Egypt, Sept 18 – Oct 3, 2010

Year 2009

Publications and White Papers (Most recent first)

- [eGy-Africa: Addressing the digital divide for science in Africa](#), C. E. Barton, C. Amory-Mazaudier, B. Barry, V. Chukwuma, R. L. Cottrell, U. Kalim, A. Mebrahtu, M. Petitdidier, R. Rabiou and C. Reeves, Russian Journal of Earth Sciences, Vol 11, ES1003, Doi: 10.2205/2009ES000377, 2009, published 24, November 2009. Also SLAC-PUB 13852.
- International Committee for Future Accelerators - Standing Committee on Inter-Regional Connectivity ([ICFA-SCIC](#)) [2009 Report](#) compiled by Les Cottrell and Umar Kalim on behalf of the working group, January 2009.

Talks (Most recent first)

- [How does the Internet Work \(ppt, video\)](#) Les Cottrell, Lecture 1 presented at the [Workshop on Scientific Information in the Digital Age: Access and Dissemination ICTP](#), Trieste, Italy October, 2009.
- [How is the Internet Performing \(ppt, video\)](#) Les Cottrell, Lecture 2 presented at the [Workshop on Scientific Information in the Digital Age: Access and Dissemination ICTP](#), Trieste, Italy October, 2009.
- [Network Measurements \(ppt, video\)](#) Les Cottrell, Lecture 3 presented at the [Workshop on Scientific Information in the Digital Age: Access and Dissemination ICTP](#), Trieste, Italy October, 2009.
- [Measuring the Digital Divide \(ppt, video\)](#), Les Cottrell, Lecture 4 presented at the [Workshop on Scientific Information in the Digital Age: Access and Dissemination ICTP](#), Trieste, Italy October, 2009.
- [African Internet Performance, Fibre and the Soccer World Cup](#), Les Cottrell & Umar Kalim, Internet2 Africa Regional Interest Group meeting, Monday 5th October 2009, San Antonio, Texas..
- [New E. Coast of Africa Fibre](#) Les Cottrell and Umar Kalim, presentation to the International Committee on Future Accelerators, August 2009.
- [eGY-Africa: addressing the digital divide for science in Africa](#) presented Charles Barton, Monique Petitdidier and Les Cottrell, presented in Moscow, at the eGY international conference in Pereslavl-Zalessky, June 3-6, 2009 and CODATA TG meeting "eGY Earth and Space Science Data Interoperability" June 1009.
- [African Internet Performance. How Bad is it? What Can be done?](#) Presented by Les Cottrell at the [IHY Africa/SCINDA 2009 Conference](#), Livingstone, Zambia, 7-12 June 2009.
- [Digital Divide Africa, eGY and the way Forward](#) by V. Chukwuma, B Rabiou, M Petitdidier, L Cottrell, C. Barton, presented at IHY Africa 2009, Livingstone, Zambia June 2009.
- [Internet Performance to Africa and the Rest of the World](#) (long version), presented by Les Cottrell at the International Center for Theoretical Physics, Trieste April 24th, 2009,
- [Internet Performance to Africa and the Rest of the World](#), presented by Les Cottrell at the [European Geosciences Union General Assembly session on African Cyberinfrastructures](#), Vienna, Austria April 22, 2009.
- [eGY-Africa: addressing the digital divide for science in Africa](#), Charles Barton, Australian National University, Monique Petitdidier, CETP/CNRS, France, Les Cottrell, Stanford Linear Accelerator Center, USA, Peter Fox, RPI, Troy, USA, presented at the European Geosciences Union General Assembly session on African Cyberinfrastructures, Vienna, Austria April 22, 2009.
- [Significance of the PingER project and its application to Pakistan Education Research Network \(PERN\)](#), presented by Umar Kalim to PERN - Special Interests Group on Network Monitoring, 8th April, 2009, Higher Education Commission of Pakistan, Islamabad.

Year 2008

Publications and White Papers (Most recent first)

- [Mapping the Digital Divide](#), from Symmetry Magazine, Sept 2009
- [Digital Divide in Sub-Saharan African Universities: recommendations and monitoring](#), by B. Barry, M. Petitdidier, L. Cottrell, C. Barton for the [IST-Africa conference and exhibition](#), May 07-09, 2008 Windhoek, Namibia. Also SLAC-PUB 13853.

Talks (Most recent first)

- [Digital Divide in Sub-Saharan African Universities: recommendations and monitoring](#), by B. Barry, M. Petitdidier, L. Cottrell, C. Barton for the [IST-Africa conference and exhibition](#), May 07-09, 2008 Windhoek, Namibia.
- [Digital Divide, eGY Africa and the Way Forward](#), Victor Chukwuma, Babatunde Rabi, Monique Petitdidier, Les Cottrell, Charles Barton.
- [Measuring the Digital Divide](#), Presentation by Les Cottrell to Princess Sumaya of Jordan on the occasion of her visit to SLAC, January 18, 2008.

Year 2007

Publications and White Papers (Most recent first)

- Quantifying and Mapping the Digital Divide from an Internet Point of View, R. Les Cottrell, Shahryar Khan, Jerrod Williams, Akbar Mehdi, Umar Kalim, Arshad Ali, [Asian Applied Computing Conference \(AACC\)](#) Dec 13-15, 2007, Khatmandu, Nepal also [SLAC-PUB-13398](#), Dec 2007
- [Bridging the Digital Divide](#), by Phil Charles of the South Africa Astronomy Observatory, SAAO Publication No. 2308 = Quest article
- [Quantifying the Digital Divide: A Scientific Overview of Network Connectivity and Grid Infrastructure in South Asian Countries](#), S. Khan, R. L. Cottrell, U. Kalim, A. Ali, CHEP07. Also [SLAC-PUB 12581](#) and Journal of Physics: Conference Series. [Poster](#)
- [ICFA SCIC 2008 Report](#)
- [MAGGIE-NS: Annual Progress Report 2007](#)

Talks (Most recent first)

- [Internet Connectivity in Africa](#), presented by Les Cottrell at the Internet and Grids in Africa: An Asset for African Scientists for the Benefit of African Society, 10-12 December 2007, Montpellier France.
- [Internet View of the Digital Divide, Especially for Sub-Saharan Africa](#), presented by Les Cottrell at the IHY Africa Workshop 11-16 November 2007, Addis Ababa, Ethiopia.
- [Quantifying the Digital Divide: Latin America, S. Asia, Africa](#), presented by Les Cottrell at the ICFA Workshop on Digital Divide Issues for Global Science, Mexico City Oct 24-27, 2007
- [Quantifying the Need for Improved Network Performance for S. Asia](#), Les Cottrell, Shahryar Khan, I2 Planning Meeting: Enhancing Research & Education Connectivity to and within S. Asia, Arlington VA, US April 26, 2007
- [Lessons Learned Monitoring](#), Les Cottrell at the ESnet R&D Workshop at Arlington VA, US, April 23, 2007.
- [Quantitative Measurement of the Digital Divide](#), Les Cottrell, Shahryar Khan, presented at the April APS meeting, Jacksonville Florida April 15, 2007
- [MAGGIE NIIT-SLAC On Going projects](#), presented by Adnan Iqbal
- [Next Generation Network Monitoring](#), by Les Cottrell
- [PingER project, perfSONAR, proposal of NIIT, SLAC and PERN for HEC](#), presented by Les Cottrell to Anwar Anjad head of PERN, Pakistan, March 16, 2007
- [Visualizing the Digital Divide from an Internet View and Some Challenges](#), prepared by Les Cottrell, Umar Kalim, Shahryar Khan and Akbar Mehdi for the COMSATS University, Islamabad, Pakistan
- [Stanford University, SLAC, NIIT, The Digital Divide and Projects](#), given by Les Cottrell to the NIIT undergraduates March 15, 2007.
- [Next Generation Network Monitoring for Pakistan, A Proposal](#), presented by Les Cottrell and Arshad Ali to Prof. Dr. Atta-ur-Rehman, chairman of the Higher Education Commission, Pakistan
- [The Digital Divide](#), by Les Cottrell, Shahryar Khan & Akbar Mehdi at the Qaid-e-Azam University Islamabad, Pakistan, March 2007
- [Stanford University, SLAC and NIIT](#), by Les Cottrell at the NIIT Convocation dinner March 9, 2007
- [Testing TCP in the WAN](#) presented by Yee-Ting Li, Microsoft TCP Workshop, 5th-6th February 2007, Microsoft, Redmond, WA.

Photos

- [NIIT 2007 Convocation](#)
- [APS April 17, 2007](#)
- [Umar's visit to San Francisco and Muir Woods](#)
- [Umar's visit to Monterey and San Juan Bautista](#)
- [Softec 2007 Award](#)

Previous Papers and Presentations

- [2006](#)
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- 1999 and earlier