TUESDAY, June 16th		
7:50 - 8:05am	**CONFERENCE WELCOME**	**Gerald Combs, John Bruno, Loris Degioanni, Laura Chappell**
8:05 - 8:50am	**Keynote: A Romp Through the History of Computing Technology: the Computer History Museum Perspective**	**Len Shustek, Chairman of the Board of Trustees, Computer History Museum and Co-Founder, Network General Corporation**
	Dr. Shustek will take you on a journey to discover what computing was like before PCs. His slide show presentation will augment his amusing stories about computers starting with the first one, never built, by Charles Babbage.	Len Shustek is chairman of the board of trustees of the Computer History Museum. In 1979, he co-founded Nestar Systems Inc., an early producer of networked client-server computer systems. In 1986, he co-founded Network General Corporation, a manufacturer of network analysis tools, notably The Sniffer™. The company became Network Associates Inc. after merging with McAfee Associates and PGP. He now teaches occasionally as a consulting professor at Stanford University, and is a partner at VenCraft, a small "angel financing" venture capital fund. He is also a trustee of Polytechnic University. Shustek's educational background is in computer science (master and doctor of philosophy, Stanford University) by way of physics (bachelor and master of science, Polytechnic University in Brooklyn, NY). After graduation, he joined the faculty at Carnegie-Mellon University as an assistant professor of computer science.
9:00am – 10:30am	**DT-1: Writing Wireshark Dissectors & Plug-Ins - The Basics**	**Instructor: Gerald Combs, Dir. Open Source Projects, CACE Technologies**
	Reprised from last year, the creator of Ethereal/Wireshark will take you from zero to a complete, working Wireshark dissector over the course of this session. The class will focus on developing Wireshark in a Windows environment, but will touch on other platforms as well.	Gerald Combs is the original developer of Wireshark. He started the project in 1998 (under the name Ethereal) while working at an ISP. Since then, many bright and talented people have contributed to the project, making it the world's premier network protocol analyzer. He currently works with the developers of WinPcap and AirPcap at CACE Technologies as the Director of Open Source Projects, and remains the lead developer of Wireshark. In a past life he has worked as a consultant for firms in a variety of industries, ranging from telecommunications to pharmaceuticals to finance. In 2003 he was the recipient of a UMKC Alumni Achievement Award for his contributions to the field of computer science.
10:45am – 12:15pm	**DT-2: Getting Your Code Into Wireshark Releases + Latest Updates to the Wireshark API**	**Instructor: Michael Tuexen, Wireshark Core Developer**
	The process to get your own source code into the next Wireshark release can be tough sometimes - especially for developers unfamiliar with open source development. There are a lot of coding recommendations to follow. It's good to know the motivation as to why they exist, helpful not only for Wireshark development. Some patches are committed to the source code repository very quickly, while others can take months or (rarely) are never included at all. This is often caused by problems in the communication that can be easily avoided. So, this session will tell you the best way to get your code smoothly into the next Wireshark release and also provideinformation about what's going on behind the scenes. Also included in the presentation will be the very latest updates to the API, which will be important for anyone doing development work to extend Wireshark.	Michael Tuexen, born in Oldenburg, Germany, studied mathematics at the University of Goettingen and received the Dipl. Math. degree in 1993 and the Dr. rer. nat. degree in 1996. In 1997 he joined the Systems Engineering group of ICN WN CS of the Siemens AG in Munich. Since 2003, he has been a Professor at the Department of Electrical Engineering and Computer Science of the Muenster University of Applied Sciences. At the Internet Engineering Task Force (IETF), he participates in the Working Groups Signalling Transport (SIGTRAN), Reliable Server Pooling (RSerPool), and Transport Area Working Group (TSVWG). His research interests include innovative transport protocols, IP-based networks and high available systems.
1:30pm – 3:00pm	**DT-3: Now and Then, How and When?**	**Instructor: Stephen Donnelly, PhD, Member of Special Projects Group, Endace Measurement Systems and Wireshark Core Developer**
	The power of network analysis is directly linked to the performance of the capture hardware. Critical data can be lost, or inappropriately classified at the very start of the analysis food chain, and may eventually lead to the presentation of incorrect or incomplete information to the network operator. In this session, Stephen will explore developments in packet capture which have led to DMA hardware solutions, supremely accurate packet time-stamping and highly versatile filtering, colorization and classification techniques. Dr Donnelly will also examine the challenges of very high speed packet capture, requirements for wire-speed data storage and techniques for exact traffic and event replication. And finally, this session will provide an in-depth look at the sources and distribution of reference clock sources and the techniques for ensuring packet capture synchronization across wide area networks.	Dr Stephen Donnelly started developing network measurement technology in 1996 at the University of Waikato in Hamilton, New Zealand after completing his BCMS degree. In 2001 he started working for Endace to commercialise the technology, with a special focus on time stamping and clock synchronisation. In 2002 he completed his PhD thesis "High Precision Timing in Passive Measurements of Data Networks" under Dr Ian Graham, Endace Co-Founder and Chief Scientist. He has contributed code to libpcap to enable efficient packet capture from Endace DAG cards, and to Wireshark to dissect the Endace Extensible Record Format (ERF).
3:15pm – 4:45pm	**DT-4: Ask the Developers!**	**Moderator: Gerald Combs, Dir. Of Open Source Projects, CACE Technologies**
	Open, Informal Q&A with a panel of Wireshark Core Developers. Join in and ask all of the questions you've wanted to ask the main forces behind Wireshark product evolution.	Gerald Combs is the original developer of Wireshark. He started the project in 1998 (under the name Ethereal) while working at an ISP. Since then, many bright and talented people have joined Gerald in contributing to the project and making it the world's premier network and protocol analyzer.

WEDNESDAY, June 17th		
8:00am - 8:55am	**KEYNOTE: Evolution of the Internet**	**Dr. Larry Roberts, PhD, CEO Anagran, Inc. and Co-Founder of the Internet**
	The Internet of today owes its beginning to ARPANET, the first nationwide packet switching network which was deployed 40 years ago. While technology and user needs have evolved substantially since then, the basic design has remained unchanged. As a result, the current Internet has inherited a design which is inherently sub-optimal. Tradeoffs between memory, processing, and communication now suggest a different design better suited to the demands of video, voice, and interactive gaming applications. This rich traffic mix has greatly increased the need for QoS and priority in the network. In addition, Cyberwar has become a serious threat and network security must be addressed. With all these changes a new evolutionary approach to the ongoing design of the Internet will be discussed.	Dr. Roberts is currently Founder, Chairman and Chief Architect of Anagran Inc. Anagran is currently manufacturing flow rate management network equipment, the first major improvement in packet network technology in the 40 years since Dr. Roberts designed and managed the first packet network, the ARPANET (now the Internet). At that time, in 1967, Dr. Roberts became the Chief Scientist of ARPA taking on the task of designing, funding, and managing a radically new communications network concept (packet switching) to interconnect computers worldwide. The first for nodes of the ARPANET were installed in 1969 and by 1973 when Dr. Roberts left ARPA to become CEO of Telenet (now part of Sprint), the concept of packet switching had been well proven to the world and the ARPANET had grown to 52 computers including a packet radio subnet and a satellite extension to Europe. Dr. Roberts has BS, MS, and Ph.D. Degrees from MIT and has received numerous awards for his work, including the Secretary of Defense Meritorious Service Medal, the L.M. Ericsson prize for research in data communications, in 1992 the W. Wallace McDowell Award, in 1998 the ACM SIGCOMM Award, in 2000 the IEEE Internet Award, in 2001 the National Academy of Engineering Draper Award, in 2002 the Principe de Asturias Award, and in 2005 the NEC Computer and Communication Award.
9:00am – 10:30am	**DT-5: WinPcap Dos and Don'ts**	**Instructor: Gianluca Varenni, Senior Engineer & WinPcap Product Manager, CACE Technologies**
	Gianluca Varenni, WinPcap maestro, will discuss best practices for incorporation of WinPcap in your application. A "must-attend" session for all WinPcap developers and WinPcap Pro licensees, or those contemplating the incorporation of either the open source WinPcap or the Professional version in their general or commercial applications.	Gianluca Varenni has worked for CACE Technologies as a lead development engineer since the company's inception. When he's not punishing his body on the ski slopes, Gianluca is managing the WinPcap development project, writing reams of code, creating new products, and solving all driver-related support issues for the company.
10:45am – 12:15pm	**DT-6: LUA Scripting in Wireshark**	**Instructor: Stig Bjorlykke, Wireshark Core Developer**
	This session will take a look at using Lua scripts to quickly and easily extend Wireshark with your own dissectors, post-dissectors and taps. Lua is a powerful light-weight programming language designed for extending applications. Using Lua scripts is great if you are reverse- engineering a protocol or implementing/debugging a protocol not yet supported by Wireshark, or simply want to extend an existing dissector with your own fields or statistics without having to spend your time recompiling Wireshark from source.	Stig Bjørlykke is working as a senior system developer for Thales Norway, a company focusing on defence, aerospace and security markets worldwide. As a Wireshark core member of long-standing, he has added a lot of new functionality and fixed a lot of bugs. In his spare time he enjoys parachuting and scuba diving.
1:30pm - 3:00pm	**DT-7: Get Thinking About WiFi Security!**	**Presenter: Mike Kershaw, Kismet Creator**
	Get a look at the new features of the Kismet rewrite, as well as a look at the current attacks against Wi-Fi networks and clients, the risks to your network, and what they look like when monitoring the network.	Mike Kershaw is the developer of several open-source wireless security tools including Kismet, and works for Aruba Networks in the Aruba Labs open source group and Aruba Threat Labs security group.
3:15pm – 4:45pm	**RT-1: Wireshark Roadmap Roundtable**	**Moderator: Gerald Combs**
	Wireshark Core Developers will discuss their list of Wireshark planned features and take input from attendees on what should be on their development list between now and the next SHARKFEST!	Gerald Combs is the original developer of Wireshark. He started the project in 1998 (under the name Ethereal) while working at an ISP. Since then, many bright and talented people have joined Gerald in contributing to the project and making it the world's premier network and protocol analyzer.

THURSDAY, June 18th		
8:00am – 8:50am	**KEYNOTE: The Google Measurement Lab**	**Stephen Stuart, Principal Engineer, Google**
	Stephen Stuart, Principal Engineer at Google will be talking about the Google Measurement Lab (M-Lab). The M-Lab is a distributed server platform for Internet researchers to deploy Internet measurement tools. The goal of M-Lab is to advance network research and empower the public with useful and viable information about their broadband connections; this goal will be achieved by enhancing Internet transparency through the M-Lab. The M-Lab is focused on sustaining a healthy, innovative Internet for the future. Stephen will describe the research tools that are and will be available as well as the goals of the lab. He will also do a live demo, if possible showing some of the power of Google's M-Lab.	Stephen Stuart, Principal Engineer for Google since 2003, is currently focused on the M-Lab and working with Vint Cerf on Google's latest internet solution site. The M-Lab is a collaborative effort between Google, New America Foundation's Open Technology Institute, the PlanetLab Consortium, and several academic researchers. Soon, Google will have 36 servers in 12 locations in the US and Europe for developers to create usage applications and for users to test their connection viability. More info on M-Lab is available at http://www.measurementlab.net/about.html. Stephen is also on the Board of Directors of the Midpeninsula Community Media Ctr and a Volunteer root nameserver operator at the Internet Systems consortium (ISC).
9:00am – 10:30am	**DT-8: Wireshark in a Multi-Core Environment Using Hardware Acceleration**	**Instructor: Pete Sanders, Manager, Field Application Engineering, NapaTech**
	During this session we will explore using hardware acceleration and load balancing technology in a WireShark environment. Hardware based load distribution based on IP flow(s) and or network protocol(s) will be presented. Also, the use of hardware acceleration to deliver line rate traffic to multiple CPU cores with extremely low CPU utilization will be examined. Other topics including frame decoding, protocol filtering, and payload removal will also be covered. Included in this session will be a llive demonstration showing how Napatech's programmable network adapters can load balance traffic from highly utilized networks using LibPCAP and multiple WireShark instances running on separate CPU cores.	Pete Sanders has over 20 years experience in hardware design, system engineering, embedded software development, and application engineering in the Satcom, Datacom, Telecom, and Semiconductor markets. Pete holds a BSEE from the University of Massachusetts Lowell where he studied digital hardware design, communications system theory, and computer engineering.
10:45am – 12:15pm	**DT-9: Adding Additional Functionality to the Wireshark GUI with GTK+**	**Presenter: Stephen Fisher, Wireshark Core Developer**
	This session will introduce attendees to the basics of the GTK+ GUI toolkit and how to use it to extend Wireshark's functionality by improving existing code as well as introducing entirely new features. We will review each step taken to implement Wireshark's Export Objects HTTP feature along with the behind the scenes hooks into the HTTP dissector as the main example.	Stephen Fisher has 14 years of experience as a network engineer in both enterprise and Internet Service Provider networks, including 5 years of work in Silicon Valley. Stephen has held the Cisco Certified Internetwork Expert (CCIE) certification. Stephen has used Wireshark/Ethereal for many years and became a core developer in 2006.
1:30pm – 3:00pm	**DT-10: Writing Your Own Capture Tool with WinPcap & AirPcap**	**Presenter: Gianluca Varenni, Senior Engineer, CACE Technologies**
	This session, as the title states, will demonstrate how to use both the WinPcap and AirPcap drivers to write your own packet capture tool from scratch. Anyone who would like to have expert instruction and reduce the lead time for the development process should attend.	Gianluca Varenni has worked for CACE Technologies as a lead development engineer since the company's inception. When he's not punishing his body on the ski slopes, Gianluca is managing the WinPcap development project, writing reams of code, creating new products, and solving all driver-related support issues for the company.
3:15pm – 4:45pm	**RT-3: The Open Source Experts Roundtable: The Future of Open Source**	**Participants: Fyodor, Mike Kershaw, Gerald Combs, Gianluca Varenni, Loris Degioanni**
	Gerald Combs will lead a distinguished panel of industry experts in a lively discussion of the future of open source applications vs. commercial IP.	

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	Dr. Shustek will take you on a journey to discover what computing was like before PCs. His slide show presentation will augment his amusing stories about computers starting with the first one, never built, by Charles Babbage.	Len Shustek is chairman of the board of trustees of the Computer History Museum. In 1979, he co-founded Nestar Systems Inc., an early producer of networked client-server computer systems. In 1986, he co-founded Network General Corporation, a manufacturer of network analysis tools, notably The Sniffer™. The company became Network Associates Inc. after merging with McAfee Associates and PGP. He now teaches occasionally as a consulting professor at Stanford University, and is a partner at VenCraft, a small "angel financing" venture capital fund. He is also a trustee of Polytechnic University.
9:00am – 10:30am	**BU-1: Wireshark Saves the WLAN! - A WLAN Case Study**	**Instructor: Joe Bardwell, Founder ad CEO, Connect802, Inc.**
	It was 11:00 pm and all 15 network engineers were gathered to see the results of the Wireshark WLAN analysis that revealed the problem they had been struggling with all day... In this session, you'll see how practical troubleshooting techniques are applied to the protocol analysis process.	Mr. Bardwell is President and Chief Scientist at Connect802 Corporation, a national wireless system solution provider founded in 1994 and based in San Ramon, California. Mr. Bardwell was the founding engineer and program manager for the Certified Network Expert (CNX) professional certification program for which he was recognized as one of the top 25 innovators in the computer services industry. His professional career, which spans over 30 years, includes technical management and executive positions with a number of computer network industry leaders including WildPackets and Network General.
10:45am – 12:15pm	**BU-2: How Protocols Work**	**Instructor: Mike Pennacchi. Consultant**
	Capturing packets can be easy, but interpreting the results of the capture and determining why things are broken can be difficult. In this session Mike Pennacchi, an expert in network analysis and troubleshooting, will take you through a number of popular protocols and show how they operate under normal and not so normal conditions. A combination of standards and real life examples will be used to help you get on your way to quickly resolving network problems.	Mike Pennacchi is the owner and Executive Network Analyst for Network ProtocolSpecialists, LLC in Seattle, WA. He has over 10 years experience as a full-time troubleshooting consultant and trainer, and uses Wireshark extensively in his work. At Interop 2005 Las Vegas, Mike led the team of networking professionals responsible for patching and troubleshooting the event network.
1:30pm – 3:00pm	**BU-3: Fundamentals of Passive Monitoring Access**	**Instructor: Bob Shaw, President and CEO, Net Optics, Inc.**
	The explosion in network security and monitoring solutions has created challenges for operators who need secure, passive access to network traffic in order to enable security and monitoring assets. Network architects and administrators, as well as security and compliance officers, are looking for ways they can obtain high-visibility access to network traffic without affecting the security and integrity of their enterprise networks. This session explores the capabilities of Tap technology to provide passive monitoring access solutions that maintain link uptime, prevent packet loss and latency, avoid new points of failure, and provide the flexibility and scalability is critical to successful network security and monitoring.	Bob Shaw is the President and CEO of Net Optics, Inc. Since March of 2001, Bob has been implementing the company vision and strategy, and motivating the executive team to stay focused on helping Net Optics customers win in their markets. Under his leadership, Net Optics has achieved consistent double-digit growth, launching more than 25 new products, acquiring in excess of 700 new customers, and expanding Net Optics' global presence.
3:15pm – 4:45pm	**BU-4: I've Just Downloaded Wireshark…Now What Do I Do?**	**Instructor: Betty DuBois, President, DuBois Training & Consulting**
	This introductory course is the perfect course to obtain the foundation in Wireshark analysis functionality. Betty will show you how to define tap-in points and methods, and covers capture options and capture filters used to reduce the amount of traffic to review when analyzing or troubleshooting your network with Wireshark. An overview of key Wireshark areas including the Summary Information, Protocol Hierarchy, Conversations/Endpoints, and TCP reassembly, and basic display filtering will also be covered. Don't miss this class if you're new to Wireshark!	With over 10 years of experience in protocol analysis both as a Consultant and an Instructor, Betty has performed fault isolations, application profiles, and network baselines for a wide variety of clients. As an Instructor for Wireshark University, she is known for her ability to make a dry, complex subject fun and interesting by using both humor and real-world examples. She has presented at Networld + Interop and is an experienced courseware developer and marketing collateral writer. She holds a BBA with Distinction from the University of Michigan-Flint, and her industry certifications include Sniffer Certified Expert SCE, Certified Novell Instructor, Novell's CNE, and Certified Network Expert CNX.

WEDNESDAY, June 17th		
	KEYNOTE: Internet Evolution	**Dr. Larry Roberts, PhD, CEO, Anagran, Inc. and Co-Founder of the Internet**
8:00am – 8:50am	The Internet of today owes its beginning to ARPANET, the first nationwide packet switching network which was deployed 40 years ago. While technology and user needs have evolved substantially since then, the basic design has remained unchanged. As a result, the current Internet has inherited a design which is inherently sub-optimal. Tradeoffs between memory, processing, and communication now suggest a different design better suited to the demands of video, voice, and interactive gaming applications. This rich traffic mix has greatly increased the need for QoS and priority in the network. In addition, Cyberwar has become a serious threat and network security must be addressed. With all these changes, a new evolutionary approach to the ongoing design of the Internet will be discussed.	Dr. Roberts is currently Founder, Chairman and Chief Architect of Anagran Inc. which manufactures flow rate management network equipment, the first major improvement in packet network technology in the 40 years since Dr. Roberts designed and managed the first packet network, the ARPANET (now the Internet). In 1967, Dr. Roberts became the Chief Scientist of ARPA, taking on the task of designing, funding, and managing a radically new communications network concept (packet switching) to interconnect computers worldwide. The first 4 nodes of the ARPANET were installed in 1969 and, by 1973, when Dr. Roberts left ARPA to become CEO of Telenet (now part of Sprint), the concept of packet switching had been well proven to the world and the ARPANET had grown to 52 computers including a packet radio subnet and a satellite extension to Europe.
	BU-5: Analysing WLANs with Wireshark and AirPcap	**Instructor: Rolf Leutert, Leutert Network Services**
9:00am – 10:30am	If you want to do full 7-layer WLAN analysis with Wireshark in the Windows world, you need AirPcap. Mr. Leutert is an expert at troubleshooting wireless LANS with this tool combination, and will instruct you in the ins-and-outs of 802.11 a/b/g/n analysis in this session.	Rolf Leutert, a native of Switzerland, founded Leutert NetServices to provide network training, network troubleshooting, and consulting in 1988. Since then, the company has delivered hundreds of trainings for Sniffer University and other training organizations, and Rolf has attained both Certified Network Expert (CNX) and Sniffer Certified Master status.
	BU-6: Testing and Monitoring Networked Applications	**Instructor: Charles "Chip" Webb**
10:45am – 12:15pm	This presentation will review the best processes for testing, monitoring, and troubleshooting networks and applications through the use of Network Visibility tools. You will learn more about key techniques for optimizing network coverage and monitoring tool utilization including: aggregation, multicasting, and advanced filtering. Mr. Webb will also provide an overview of how network emulation should be used to test new technology before deployment, and how you can accelerate troubleshooting of post-deployment incidents to improve productivity for IT operations staff.	Charles was most recently Distinguished Member of Technical Staff in the Advanced Video and Data Networking Department at Lucent Technologies. He has 14 years of experience in ASIC and board level design for video and high-speed data networking equipment. He was a member of the Emmy Award winning team that developed the first ATSC HDTV system and subsequently led the development of the first all-digital 8-VSB demodulator IC for HDTV broadcast. More recently, Mr. Webb led the development of several successful ASICs for Sonet/SDH and G.709 applications.
	BU-7: The Reality of 10G Analysis	**Instructor: Sam Battaglia, Technical Manager, Network Critical**
1:30pm – 3:00pm	10Gb speeds are quickly becoming a reality in many datacenter environments, but is it realistic and cost effective to believe that 10Gb of data can be properly analyzed? Do you really need to analyze all of the traffic coming through your 10Gb network? Is it more sensible and economical to filter traffic down to 1Gb for analysis with Wireshark? In this session, we will debate these topics and demonstrate how you can filter your 10Gb traffic down to the essential 1Gb for Wireshark analysis.	Sam has experience working in computing, database administration, end-user support, networking and telephony systems. He has Network+ and A+ certifications and is currently the Technical Manager at Network Critical. Active in the engineering and design process for new product development at Network Critical, Sam also supports customers who need assistance installing access solutions into their networks.
	RT-2: Network Consultants Roundtable	**Moderator: Kevin Boland, Bentley Systems**
3:15pm – 4:45pm	In this user round table, we will discuss the technical aspects of using WireShark and Pilot in enterprise networks. We will explore best practices for using these tools to optimize time and resources. We'll also step through case studies that demonstrate effective troubleshooting, network traffic analysis and application utilization, and explore other aspects of using these tools in a group environment. Collectively, we will share our experiences using WireShark and/or Pilot in our own unique ways.	Kevin Boland, is a Senior Consultant for the Professional Services Group at Bentley Systems, Inc. Bentley is dedicated to providing comprehensive software solutions for the infrastructure lifecycle. Kevin's broad background covers N-Tier applications in enterprise networks with a focus on networking and security. He has found that his knowledge of troubleshooting and infrastructure design often gives him a unique perspective on utilizing various networking and security tools to complete tasks in an effective manner.

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	Stephen Stuart, Principal Engineer at Google will be talking about the Google Measurement Lab (M-Lab). The M-Lab is a distributed server platform for Internet researchers to deploy Internet measurement tools. The goal of M-Lab is to advance network research and empower the public with useful and viable information about their broadband connections; this goal will be achieved by enhancing Internet transparency through the M-Lab. The M-Lab is focused on sustaining a healthy, innovative Internet for the future. Stephen will describe the research tools that are and will be available as well as the goals of the lab. He will also do a live demo, if possible, showing some of the power of Google's M-Lab.	Stephen Stuart, Principal Engineer for Google since 2003, is currently focused on the M-Lab and working with Vint Cerf on Google's latest internet solution site. The M-Lab is a collaborative effort between Google, New America Foundation's Open Technology Institute, the PlanetLab Consortium, and several academic researchers. Soon, Google will have 36 servers in 12 locations in the US and Europe for developers to create usage applications and for users to test their connection viability. More info on M-Lab is available at http://www.measurementlab.net/about.html. Stephen is also on the Board of Directors of the Midpeninsula Community Media Ctr and a Volunteer root nameserver operator at the Internet Systems consortium (ISC).
9:00am – 10:30am	**BU-8: Adding Ease, Depth and Dimension to Wireshark WLAN Analysis with CACE Pilot and Wi-Spy**	**Instructors: Loris Degioanni, CTO and Co-Founder, CACE Technologies & Ryan Woodings, Chief Geek, MetaGeek, LLC**
	Ever wished for more visual representations of packets collected by Wireshark? Ever wanted more immediate gratification when attempting to open a large .pcap file with Wireshark? Ever pined for the ability to generate professional-looking reports within Wireshark? How about historical play-back of saved trace files with deep drill down capabilities? Or distributed Wireshark with centralized access? CACE Pilot is a higher-layer analyzer that integrates completely with Wireshark, providing it with all of these capabilities and more. Come to this session and learn how CACE' nextgen analyzer can enrich your Wireshark experience and complete your network toolkit.	Loris Degioanni is Co-Founder and CTO of CACE Technologies, the company that sponsors and supports the Wireshark and WinPcap development projects. He is also the creator and main developer of AirPcap and CACE Pilot. Ryan Woodings is Chief Geek and Founder of MetaGeek, LLC, the creators of the first truly affordable spectrum analyzer, Wi-Spy. As MetaGeek has grown, Ryan has worn a variety of hats. These days he spends most of his time managing the business and software development. To relieve his stress Ryan enjoys running... a lot. When he's not training for a half marathon he's training for a full marathon. In the summer Ryan cruises to work on his Honda Shadow (65 mpg), mountain bikes in the Boise foothills and attempts to jump with his wakeboard.
10:45am – 12:15pm	**BU-9 Wireshark Charts and I/O Graphs**	**Instructor: Ray Tompkins, Founder & CEO, Gearbit**
	In this session, we will review the effective use of I/O Graphs, TCP Streams Graphs and Flow Graphs. Wireshark provides numerous graphs that assist in bringing out the details of the network traffic. I'll share how to use the graphs to drill-down into the problems and then report the finding. With actual case studies we will approach problems, weed through the issues in the trace files and come to a conclusion. Then present the finding in a graphical presentation that can be shared with all levels of your organization.	Ray is a Senior Network Specialist with over 28 years experience in troubleshooting, design, and implementation. His background includes 911 emergency consulting, and identifying the root cause of critical network problems. His knowledge of network protocols (LAN, WAN, WLAN, VoIP) and how they work within the enterprise networks are the key in providing customer service though knowledge transfer and education.
1:30pm – 3:00pm	**BU-10: Wireshark Saves the WLAN! A WLAN Case Study**	**Instructor: Joe Bardwell, President, Connect802, Inc.**
	It was 11:00 pm and all 15 network engineers were gathered to see the results of the Wireshark WLAN analysis that revealed the problem they had been struggling with all day... In this session, you'll see how practical troubleshooting techniques are applied to the protocol analysis process.	Mr. Bardwell is President and Chief Scientist at Connect802 Corporation, a national wireless system solution provider founded in 1994 and based in San Ramon, California. Mr. Bardwell was the founding engineer and program manager for the Certified Network Expert (CNX) professional certification program for which he was recognized as one of the top 25 innovators in the computer services industry. His professional career, which spans over 30 years, includes technical management and executive positions with a number of computer network industry leaders including WildPackets and Network General.
3:15pm – 4:45pm	**BU-11: SPAN/Mirror/Monitor vs. Taps: When should I use what, and why should I care?**	**Instructor: Betty DuBois, President, DuBois Training & Consulting**
	This course discusses when it is best to use a SPAN/Mirror/Monitor (S/M/M) port and when a tap would better suit your needs. Pros, cons and caveats for each method of getting the data from the network and into the analyzer will be covered, including change control issues. Example scenarios will cover VoIP, database, and CIFS protocol issues with corresponding network diagrams.	Betty DuBois is president of DuBois Training & Consulting, LLC. With over 10 years of experience in protocol analysis both as a Consultant and an Instructor, Betty has performed fault isolations, application profiles, and network baselines for a wide variety of clients. As an Instructor for Wireshark University, she is known for her ability to make a dry, complex subject fun and interesting by using both humor and real-world examples. She has presented at Networld + Interop and is an experienced courseware developer and marketing collateral writer. She holds a BBA with Distinction from the University of Michigan-Flint, and her industry certifications include Sniffer Certified Expert SCE, Certified Novell Instructor, Novell's CNE, and Certified Network Expert CNX.

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7:50 - 8:05am	CONFERENCE WELCOME	Gerald Combs, John Bruno, Loris Degioanni, Laura Chappell
8:05 - 8:50am	**Keynote: A Romp Through the History of Computing Technology: the Computer History Museum Perspective** Dr. Shustek will take you on a journey to discover what computing was like before PCs. His slide show presentation will augment his amusing stories about computers starting with the first one, never built, by Charles Babbage.	**Len Shustek, Chairman of the Board of Trustees, Computer History Museum and Co-Founder, Network General Corporation** Len Shustek is chairman of the board of trustees of the Computer History Museum. In 1979, he co-founded Nestar Systems Inc., an early producer of networked client-server computer systems. In 1986, he co-founded Network General Corporation, a manufacturer of network analysis tools, notably The Sniffer™. The company became Network Associates Inc. after merging with McAfee Associates and PGP. He now teaches occasionally as a consulting professor at Stanford University, and is a partner at VenCraft, a small "angel financing" venture capital fund. He is also a trustee of Polytechnic University.
9:00am – 10:30am	**AU-1: Wireless Network Optimization with Wireshark (GSM, EGPRS, UMTS, HSPA)** The focus of this presentation is on the illustration of use cases of Wireshark in the wireless network environment. In that respect, there are two major topics: 1. Using Wireshark on standalone laptops for on-site troubleshooting and network analysis and 2. Using Wireshark to analyze log files originating from probes which are installed at network nodes and which continuously gather data throughout a wireless network. In both cases, network engineers apply standard and tailored Wireshark tools to filter and search for events and parameters. The presentation starts out with an illustration of the most important WLAN standards like GSM/EGPRS, UMTS, HSPA, and LTE/SAE, the introduction of their protocol suites and typical key performance indicators. The next parts are dedicated to typical use cases and problme scenarios in wireless networks and how they can be analyzed through Wireshark.	**Instructor: Gunnar Heine, Founder, Inacon GmbH** Gunnar Heine is head of INACON GmbH, a German-based consulting and training form servicing leading mobile communications equipment manufacturers. Prior to founding Inacon in 1999, he spent 7 years at ALCATEL where he received special honors for various technical and managerial improvements. From early 1996 until the end of 1998, Gunnar expatriated to Washington, DC and Raleigh, NC, where he was one of ALCATEL's Directors for mobile switching. Gunnar has authored several bestselling books about GSM, GPRS, UMTS, WiMAX and SIP. For two years, Gunnar has also held the position of guest professor at the University of Applied Science in Wilhelmshaven in Germany. His major technical interest is in the area of next generation access networks and the underlying physics.
10:45am – 12:15pm	**AU-2: SSL Troubleshooting with Wireshark & tshark** SSL plays an important role in ensuring confidentiality, integrity and authentication of communication over a public network like the Internet. It is used for securing (web)applications as well as in implementing a public key infrastructure (PKI). A good understanding of the SSL protocol will help solve issues in setting up secure communication based on SSL. Sake will review the SSL protocol and show you how Wireshark (and also tshark) can be used to analyze the different handshake messages, troubleshoot common problems in the SSL session setup and successfully decrypt SSL traffic for further analysis of the transported data."	**Instructor: Sake Blok, Wireshark Core Developer** Sake Blok, a Wireshark/Ethereal devotee since 1999, works as a Research & Development Engineer for ion-ip in the Netherlands. His company provides solutions to customers who want to deliver their applications to users in a fast, secure, efficient and scalable manner. Sake's main focus is to take new products for a spin in their test environment, design custom solutions for customers and troubleshoot the problems customers might encounter while using ion-ip solutions. Two years ago, Sake started to add the functionality he was missing to Wireshark. He also started to fix Wireshark-bugs that were reported on Bugzilla. This work on Wireshark resulted in an invitation from Gerald Combs to join the Core Development Team.
1:30pm – 3:00pm	**AU-3: CACE Pilot + AirPcap + Wireshark Integrated Analysis** In this session, you will learn about the latest enhancements to Pilot through a live demonstration of the analyzer's features including Views, graphs, reporting, and drill down for deep packet analysis with Wireshark.	**Instructor: Loris Degioanni, CACE Technologies CTO** Loris Degioanni is Co-Founder and CTO of CACE Technologies, the company that sponsors and supports the Wireshark and WinPcap development projects. He is also the creator and main developer of AirPcap and CACE Pilot.
3:15pm – 4:45pm	**AU-4: Complex Trace File Analysis - a Corporate Insiders View** In this session, Hansang Bae will step you through his approach to complex trace file analysis and demonstrate effective methods for taking cuts at, and deciphering, packet information to get to the information needed.	**Instructor: Hansang Bae, CitiGroup Network/Application Engineering Team Lead** Hansang Bae currently leads the Network/Application Performance Engineering Team for Citi. His roles and responsibilities include: certifying network analyzers for Citi, performing application profiling, proving network simulation studies, and assisting network operations/engineering with troubleshooting. He brings a unique perspective due to his experience with server and network design as well as his broad knowledge of protocol analysis in a complex enterprise infrastructure.

WEDNESDAY, June 17th		
8:00am - 8:50am	**KEYNOTE: Internet Evolution**	**Dr. Larry Roberts, PhD, CEO, Anagran, Inc. and Co-Founder of the Internet**
	The Internet of today owes its beginning to ARPANET, the first nationwide packet switching network which was deployed 40 years ago. While technology and user needs have evolved substantially since then, the basic design has remained unchanged. As a result, the current Internet has inherited a design which is inherently sub-optimal. Tradeoffs between memory, processing, and communication now suggest a different design better suited to the demands of video, voice, and interactive gaming applications. This rich traffic mix has greatly increased the need for QoS and priority in the network. In addition, Cyberwar has become a serious threat and network security must be addressed. With all these changes a new evolutionary approach to the ongoing design of the Internet will be discussed.	In 1967, Dr. Roberts became the Chief Scientist of ARPA, taking on the task of designing, funding, and managing a radically new communications network concept (packet switching) to interconnect computers worldwide. The first four nodes of the ARPANET were installed in 1969. By 1973, when Dr. Roberts left ARPA to become CEO of Telenet (now part of Sprint), the concept of packet switching had been well proven, and the ARPANET had grown to 52 computers, including a packet radio subnet and a satellite extension to Europe. Dr. Roberts has BS, MS, and Ph.D. Degrees from MIT, and has received numerous awards for his work, including: the Secretary of Defense Meritorious Service Medal, the L.M. Ericsson prize for research in data communications, the W. Wallace McDowell Award, the ACM SIGCOMM Award, the IEEE Internet Award, the National Academy of Engineering Draper Award, the Principe de Asturias Award, and the NEC Computer and Communication Award. Dr. Roberts is currently Founder, Chairman, and Chief Architect of Anagran Inc., which manufactures flow rate management network equipment, the first major improvement in packet network technology in the 40 years since Dr. Roberts designed and managed the ARPANET (now the Internet).
9:00am – 10:30am	**AU-5: Advanced TCP Analysis & Troubleshooting in Enterprise Networks**	**Instructor: Hansang Bae, CitiGroup Network/Application Engineering Team Lead**
	Learn to be a Packet Whisperer! Reading trace files is still more art than science. In this session, interesting real world problems seen in a Fortune 10 company - and solved using Wireshark - will be discussed in great detail. Seemingly mundane trace files will be examined, exposing complex interactions if you know where to look. After attending the session, you will be better prepared to develop an attack plan and troubleshooting methodologies that can be used to ferret out root cause issues in the real world.	Hansang Bae currently leads the Network/Application Performance Engineering Team for Citi. His roles and responsibilities include: certifying network analyzers for Citi, performing application profiling, proving network simulation studies, and assisting network operations/engineering with troubleshooting. He brings a unique perspective due to his experience with server and network design as well as his broad knowledge of protocol analysis in a complex enterprise infrastructure.
10:45am – 12:15pm	**AU-6: Successful Ways to Use NetFlow and IPA SLA: Jitter**	**Instructor: Michael Patterson, President & CEO, Plixer Int'l.**
	This session is an overview of when to use NetFlow & sFlow over packet analysis and how to use it for narrowing in on problems fast. It briefly covers what Flow technology is and how to enable it. Network Behavior Analysis: identifying abnormal traffic patterns with NetFlow is explained as well. The second half covers Cisco's IP SLA technology for measuring Jitter, Latency, Packet Loss and MOS. A collaborative use of IP SLA with NetFlow data is demonstrated. The session will exhibit several free products and end with a cacophony of screams and a massive fireworks explosion.	Michael Patterson has been the President and CEO of Plixer since its inception in 1999. He and Co-founder Marc Bilodeau have grown the company to over 2000 customers in over 30 countries. Prior to starting Plixer, Michael was the Director of the Network Operations Center at Cabletron Systems. He has a bachelor's degree from the University of Maine at Orono and a Master of Science degree in Computer Information Systems focusing in relational database design from Southern New Hampshire University.
1:30pm – 3:00pm	**AU-7: The Role of Wireshark and T-Shark in Industrial Ethernet**	**Instructor: Mike Hinz, CEO YR20**
	This session will cover the deployment of Wireshark and T-shark as viable tools to commission the networks and telecoms on a sophisticated offshore oil support vessel. In-depth descriptions of the vessel, networks, and telecoms will be given. Specific examples of commissioning with Wireshark and T-shark - what worked and what didn't - will also be included in the presentation.	YR20 consists of a team of highly-experienced network and communication consulting engineers, each with a minimum of 20 years experience in design, commissioning, verification and troubleshooting the critical networks and communication links for Petro-Chemical, Oil (both onshore and offshore) and Industrial Ethernet production networks. Their expertise covers Satellite, Data, RF, Ethernet, Control, and Application Systems.
3:15pm – 4:45pm	**AU-8: Finding the Latency**	**Instructor: Mike Pennacchi, Consultant**
	No one has ever called to say that an application was running too fast. Mike Pennacchi, expert network consultant, will show you how to go through a trace file and find why transactions are taking a long time to complete and how to determine the cause of the delay. In addition to learning what can go wrong, we will look at how to eliminate those things that are working correctly. A number of case studies will be used in this session to illustrate the process of finding the latency.	Mike Pennacchi is the owner and Executive Network Analyst for Network Protocol Specialists, LLC in Seattle, WA. He has over 10 years experience as a full-time troubleshooting consultant and trainer, and uses Wireshark extensively in his work. At Interop 2005 Las Vegas, Mike led the team of networking professionals responsible for patching and troubleshooting the event network.

THURSDAY,June 18th		
8:00am – 8:50am	**KEYNOTE: The Google Measurement Lab**	**Stephen Stuart, Principal Engineer, Google**
	Stephen Stuart, Principal Engineer at Google will be talking about the Google Measurement Lab (M-Lab). The M-Lab is a distributed server platform for Internet researchers to deploy Internet measurement tools. The goal of M-Lab is to advance network research and empower the public with useful and viable information about their broadband connections; this goal will be achieved by enhancing Internet transparency through the M-Lab. The M-Lab is focused on sustaining a healthy, innovative Internet for the future. Stephen will describe the research tools that are and will be available as well as the goals of the lab. He will also do a live demo, if possible, showing some of the power of Google's M-Lab.	Stephen Stuart, Principal Engineer for Google since 2003, is currently focused on the M-Lab and working with Vint Cerf on Google's latest internet solution site. The M-Lab is a collaborative effort between Google, New America Foundation's Open Technology Institute, the PlanetLab Consortium, and several academic researchers. Soon, Google will have 36 servers in 12 locations in the US and Europe for developers to create usage applications and for users to test their connection viability. More info on M-Lab is available at http://www.measurementlab.net/about.html. Stephen is also on the Board of Directors of the Midpeninsula Community Media Ctr and a Volunteer root nameserver operator at the Internet Systems consortium (ISC).
9:00am – 10:30am	**AU-9: VoIP Troubleshooting with Wireshark**	**Instructor: Sean Wahlberg, Wireshark Core Developer**
	In this session, you will learn how to use Wireshark to analyze Voice over IP traffic. You will learn how to use Wireshark to dig into your voice traffic, and how to use the advanced voice analysis features to further look for problems across a large packet capture. This talk will also cover strategies for using Wireshark optimally in a VoIP environment.	Sean Walberg is a network engineer from Winnipeg, Canada. He has been working in the networking field for 10 years. Prior to that, he was a UNIX developer and systems administrator. Sean has been using Wireshark for several years when he discovered the voice features and learned over a period of tme to optimize use of those features. He has also written about voice topics for Linux Journal and O'Reilly.
10:45am – 12:15pm	**AU-10: Network Forensics: Wireshark as Evidence Collector**	**Instructor: Laura Chappell, Wireshark U**
	Once you have the legal standing to listen in on network traffic, what type of evidence can be collected to identify a suspect or confirm a compromised host? What do you do with the trace file evidence once you've collected it? In this session, Laura cites numerous case studies where network forensics aided in the identification of attackers, compromised methods and illegal activity.	Laura Chappell is the founder of the Protocol Analysis Institute (www.packet-level.com), co-founder, along with CACE Technologies, of Wireshark University (www.wiresharkU.com), as well as a highly-energetic speaker and author of numerous industry titles on network communications, analysis and security.
1:30pm – 3:00pm	**AU-11: SCTP Support in Wireshark**	**Instructor: Michael Tuexen, Wireshark Core Developer**
	The Signalling Transport (SIGTRAN) working group of the Internet Engineering Task Force (IETF) developed the SIGTRAN protocol suite and the Stream Control Transmission Protocol (SCTP), a general purpose transport protocol, for transporting SS7 signalling information over IP-based networks. SCTP is now included in all Linux 2.6 kernels, FreeBSD 7, and Solaris 10 and provides several unique features like support of: * multihoming * partial reliability * multiple streams * dynamic address reconfiguration This presentation will give an overview of SCTP and its support in Wireshark through analysis of trace files.	Michael Tuexen, born in Oldenburg, Germany, studied mathematics at the University of Goettingen and received the Dipl. Math. degree in 1993 and the Dr. rer. nat. degree in 1996. In 1997 he joined the Systems Engineering group of ICN WN CS of the Siemens AG in Munich. Since 2003, he has been a Professor at the Department of Electrical Engineering and Computer Science of the Muenster University of Applied Sciences. At the Internet Engineering Task Force (IETF), he participates in the Working Groups Signalling Transport (SIGTRAN), Reliable Server Pooling (RSerPool), and Transport Area Working Group (TSVWG). His research interests include innovative transport protocols, IP-based networks and high available systems.
3:15pm – 4:45pm	**AU-12: Tips & Tricks: Hands-on Lab with Real-World Enterprise Case Studies through Packet Trace Dissection**	**Instructor: Laura Chappell, Wireshark University Founder**
	Laura's back with more of her "show-and-tell" case studies about life in the network analysis trenches. Laura spends her working life steeped in packets, and has many real-world tales to tell about network breaches and how to staunch them. Come join her for what is sure to be another enlightening and engaging packet dissection journey. No one can make a packet trace more interesting than Ms. Chappell!	Laura Chappell is the founder of the Protocol Analysis Institute (www.packet-level.com), co-founder, along with CACE Technologies, of Wireshark University (www.wiresharkU.com), as well as a highly-energetic speaker and author of numerous industry titles on network communications, analysis and security.