

SURA/ViDe 5th Annual Digital Video Workshop



GCATT
Atlanta, Georgia
March 24-26, 2003



The SURA/ViDe workshop is supported in part by the NCSA Alliance PACS (Partner for Advanced Computational Services) program to promote the exchange of information on the latest technology advances in networking.

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Workshop Schedule and Themes

MONDAY MARCH 24 – Metadata Pre-Conference Workshop

MONDAY EVENING MARCH 24 -- Reception

Reception at the Four Seasons Hotel (6:00-8:00 PM)

- **6:00 PM H'ors d'oeuvres**
- **6:50 PM Keynote Speaker - Gordon Castle (CNN): "Building an Integrated Production Environment"**

Gordon Castle is CNN Senior Vice President of CNN Technology. Mr. Castle is responsible for the analysis, acquisition and implementation of the technology that CNN employs for the gathering, production and distribution of news, and is a leading executive behind the creation of an all-digital production environment at CNN. This multi-year, multi-million-dollar digital project is a cornerstone of CNN's technology plan.

Prior to this position, Castle managed the technical start-up of CNN en Espanol, CNN's twenty-four hour digital non-linear Spanish-language network. Castle has played a role in all of the new network start-ups, including CNN/Sports Illustrated and CNNfn.

Castle previously served as a vice president for CNN Headline News. In this role, Castle assumed operational management duties for CNN Headline News and CNNRadio, CNN Airport Network and CNN's affiliate news service, CNN Newsource. He was responsible for all technical operations and implementation of all new technology, budgeting, training and daily operations. Castle coordinated the transition of CNN Headline News to a digital non-linear production facility.

In 1992, Castle served as production director for CNN Graphics, in which he was responsible for the daily operations of the department and the coordination of the department's move to a new D1 digital facility. Castle began his career at CNN Headline News as a video journalist at the network in 1986

- **7:30 PM Q&A**

TUESDAY MARCH 25

- **7:00 AM - 6:00 PM Exhibit Floor Open**
- **7:00 - 8:00 AM Breakfast**
- **7:30 - 7:45 AM Speaker Technical Briefing (Main Podium)**

◦ **8:00 - 8:30 AM Doug Pearson, ViDe Chair (Indiana University) & Tyler Miller Johnson (University of North Carolina at Chapel Hill): Introduction and Welcoming Remarks**

Digital Video: Applications and Adventures - Part I (8:30 AM - Noon)

◦ **8:30 - 9:00 AM Bob Middleton (University of Alabama at Huntsville) & Rick Bagwell (Alabama Research and Education Network): "Experiences with Unicast/Multicast Tutorials and International Classes at the University of Alabama in Huntsville"**

The University of Alabama in Huntsville was asked last fall by the National Children's Advocacy Center to record and deliver, at pre-selected times, three Tutorials related to "Child Abuse" issues over the Internet and Internet2. The Tutorials were pre-recorded in our conventional streaming video format, and some with synchronized PowerPoint slides, and delivered over the Internet and Internet2 at pre-scheduled times. We also incorporated a live streaming video answer session at the end of each lecture, receiving questions from the remote audience sites via phone and email. The large number of potential receiving sites for these tutorials forced us to simultaneously use both conventional Unicast as well as Multicast delivery modes. The procedure to Multicast the synchronized streaming video and PowerPoint slide material may be a new approach. Another new approach was the experimental inclusion of scrolling text of the audio portion to comply with Federal requirements for access by handicapped individuals.

Our annual UAH Engineering class with a French school is now underway and used the above technology (except Multicast) this year. A summary and update of this effort will also be given.

◦ **9:00 - 9:30 AM Glenn Davis (University of South Alabama): "Trial Use of SIP Client Software for Telemedicine"**

Emerging Health Technologies is committed to finding tools and solutions that assist the health care provider in their practice. The goal of this project is to demonstrate a cost effective method to assist the rural and urban community in quality medical care to patients throughout southwest Alabama and beyond. We will describe and demonstrate our use of a SIP Client software solution called "Session" which can be utilized anywhere broadband access is available, either by DSL or cable modem as well as other methods of TCP/IP network connection. We have found that Session also contains the sharing tools that potentially make an excellent Doctor-to-Doctor collaboration tool as well.

◦ **9:30 - 10:00 AM Break**

◦ **10:00 - 10:30 AM Dan Monster (UNI-C / Forskningsnett): "TF-NETCAST and other streaming media activities in Europe"**

TF-NETCAST is a newly formed TERENA task force in the area of streaming media. TF-NETCAST topics include metadata for live streaming events and video-on-demand, live streaming announcement portals, stream splitting and content delivery infrastructures, and promotion of high quality content. Several national research networks have already deployed streaming media portals or are in the process of doing so. An overview of selected activities covering video-on-demand portals and live streaming announcement portals will be given.

◦ **10:30 - 11:00 AM Tom Snook (New World Symphony): "Music Instruction and Collaboration using Advanced Internet2 Technologies"**

Introduction and overview of what the New World Symphony is and how it is applying interactive audio/video for music masterclasses, collaborations and teaching over high bandwidth networking; musical crossroads video presentation; plans for the future; Q&A

◦ **11:00 - 11:45 AM Kenneth Tanner (Louisiana State University Health Sciences Center) and Doug Pearson (Indiana University): "Streaming and Recording Videoconferences"**

A variety of methods are available to record and stream videoconferences for live and on-demand viewing. The methods are useful not only for traditional videoconferences, but can also be used to easily record and stream classes, lectures, meetings and essentially any event where a videoconferencing endpoint is present. We'll explore the methods of recording and streaming videoconferences, illustrate the appropriate uses, pros and cons of each, and will give an in-depth examination of the systems employed at Louisiana State University Health Sciences Center and at Indiana University.

◦ **11:45 AM - 1:10 PM Lunch**

Digital Video: Enabling Technologies and Emerging Visions (1:15-5:00 PM)

◦ **1:10 - 1:40 PM Roger Zimmerman (Integrated Media Systems Center, University of Southern California): "The Remote Media Immersion System"**

The research activities at the University of Southern California's Integrated Media Systems Center (IMSC) over the past few years have resulted in the design and implementation of the Remote Media Immersion (RMI) system. The ultimate goal of the RMI is to reproduce the complete aural and visual ambiance of an environment that includes people and other real and virtual elements. Our current system is based on the Yima streaming media architecture and delivers high-definition quality video at up to 45 Mb/s in combination with 16 channels of uncompressed immersive audio over IP networks.

◦ **1:40 - 2:10 PM Grace Agnew (Rutgers University): "Metadata for Video Overview"**

Presentation on metadata for digital video--the needs and requirements as well as the ViDe AP for Dublin Core and MPEG7. This AP maps between the two schemas and can be used as either MPEG7 or Dublin Core. The presentation highlights the differences between the two schemas to help digital video content managers determine when to use which schema.

◦ **2:10 - 2:40 PM Tim Poe (University of North Carolina at Chapel Hill): "How to Use the ViDeNet Site"**

ViDeNet provides a suite of tools for managing h.323 assets. For the end user, these tools include a global h.323 dialing directory, a listing of an organization's resources, a system for requesting and managing accounts, etc. For an organization's gatekeeper administrator, ViDeNet provides tools to: create and maintain a web presence, process account requests, position an organization within the GDS hierarchy, etc.

This session will provide information on how to take full advantage of the ViDeNet tools, for both end users and h.323 gatekeeper administrators. A full overview of the tools will be presented, along with details on how to fully utilize ViDeNet's recently refined help documents.

◦ **2:40 - 3:10 PM Break**

◦ **3:10 - 3:30 PM Jill Gemmill (University of Alabama at Birmingham): "Secure Videoconferencing"**

VidMid is a working group formed by the Internet2 Middleware Initiative and ViDe, the Video Development Initiative. Jill is Principal Investigator of an NSF-funded ViDeNet project "Middleware for Scalable Video Services for Research and Higher Education". The multi-institutional project focuses on a novel integration of video conferencing clients and services with NMI Middleware standards, functions and services. The outcome will be a videoconferencing application directory enabling secure, inter-domain authentication for calls that transit institutional organizational boundaries. This talk will introduce the status of secure videoconferencing in the market today, applications requiring secure videoconferencing, and VidMid's progress to date.

◦ **3:30 - 3:50 PM Tarun Ghanshyam Abhichandani (Claremont Graduate University): "Design, Development & Deployment of a SIP Video Client"**

In this talk, Tarun will discuss the design and architecture of the CGU SIP video-conferencing client. He will cover a brief overview of how SIP works, and explain the security / authentication aspects of the CGU client. He will also discuss the directory services integration of the Client with CommObjects. Some experiences with the recent deployment and interoperability testing will be presented.

◦ **3:50 - 4:10 PM Robert Olson (Argonne National Laboratory): "Access Grid Update"**

In the years since we released the first Access Grid specifications and software, we have learned a great deal about how one might use this technology to enhance collaboration. With the 2.0 release of the AG software, we apply this knowledge to produce a system that is much more capable of enhancing collaboration between groups of people and the tools they use. In this talk I discuss what is new with the AG 2.0 software release and how its capabilities may be applied.

◦ **4:10 - 4:30 PM Kun Wei (California Institute of Technology): "Using VRVS as a Personal Access Grid Node"**

Connect to Access Grid Virtual Venues through VRVS from Anywhere World-Wide!

The Virtual Room Videoconferencing System (<http://www.vrvs.org>) provides a low cost, bandwidth-efficient, extensible means of videoconferencing and remote collaboration over various academic & research networks. VRVS provides the versatile collaboration tools: MBone (vic/rat), H.323 (Polycom, NetMeeting, etc.), QuickTime, SIP, JMF, MPEG2, Desktop/Application sharing and Chat on various platforms (Windows, Linux, Mac).

With VRVS AG Bridge, users can participate the AG sessions with fully supported features through unicast network. Since the launch of the VRVS-AG Bridge, many world-wide users have used it to connect to Access Grid conferences such as NSF Workshop, SC02 and GGF. Recently VRVS 3.0 release made big improvements on various aspects related to VRVS AG Bridge, including flexible video modes based on user's local hardware/network condition, audio transcoder, better H.323 switching, Mac OSX support, etc. Following will be a live demo connecting to AG virtual venues.

◦ **4:30 - 5:00 PM Bob Dixon (Ohio State University, Ohio Academic Resources Network (OARNet)): "Internet-To-Go: A Small Mobile Satellite System for Internet Access Anywhere"**

We have mounted a small satellite dish on a small trailer, and added all the necessary additional equipment needed to make a fully self-contained mobile high-speed Internet access system. It provides completely transparent access for all Internet (both I and II) applications, and generally a user cannot tell the difference between access via the trailer and access via a ground T1 line. It includes a generator and batteries for power, wired and wireless (through walls and up to 20 miles outdoors) networking for connection to local computers and LANs, and environmental protection for all the equipment. This system has been used in many diverse applications and locations. The system is at the conference for demonstration and tire-kicking. It will be used to demonstrate live video conferencing for the audience, and to provide wireless Internet access to people with laptop computers.

◦ **5:00 - 6:00 PM Reception**

WEDNESDAY MARCH 26

◦ **7:00 AM - 6:00 PM Exhibit Floor Open**

◦ **7:00 - 8:00 AM Breakfast**

◦ **7:30 - 7:45 AM Speaker Technical Briefing (Main Podium)**

Breakout Sessions: Parallel tracks offering additional depth on specific topics (8-11:30 AM)

Breakout Track A: H.323 OPERATIONS

◦ **8:00 - 9:00 AM Susan Bowers (California State University): "Purchasing an MCU"** (panel discussion)

This will be a panel discussion from a variety of support perspectives on what to consider when purchasing a Multipoint Conference Unit (MCU) and how different organizations support video conferencing via an MCU. Presenters will discuss why they choose the MCU that they purchased (or plan to purchase), how they decided what configuration to purchase based on expected usage and how many MCUs were purchased. They will also cover parameters such as whether or not a scheduler came with the MCU or if third party scheduling is required, how far in advance conferences are scheduled, support for adhoc conferencing, and other factors related to how and how often their MCUs are used.

Panel:

- Pat Hunt, MOREnet Video Services Manager
- Lisa Stephens, Associate Director Distance Education & Videoconference Operations, University at Buffalo

◦ **9:00 - 9:30 AM Ed Stockey (IHETS)**

Ed Stockey will be describing the deployment of IP Video in the State of Indiana. He will dial plan, codecs, mcu, gatekeeper, QoS, and directory service. In addition, he will discuss lessons learned. This deployment involved higher ed, K-12 schools, libraries and government agencies.

° 9:30 - 10:00 AM Break

° 10:00 - 10:30 AM Rick Bagwell (Alabama Research and Education Network): "Practical Experiences Overcoming Firewalls and Limited Bandwidth for H.323"

As video teleconferencing and other distance learning initiatives are implemented by schools and businesses, there is a growing need for the ability to support such applications on existing networks with limited bandwidth and limited funds for network expansion. This session will cover practical, real-world implementations of H.323 and other protocols requiring Quality of Service (QoS) over limited Bandwidth connections and through legacy firewalls. A few specific implementations will be discussed where school systems with DS1 (T1) point to point networks were able to effectively use video teleconferencing over their existing networks.

° 10:30 - 11:00 AM Larry Amiot (Northwestern University): "Scheduling Videoconferences on an MCU"

There are several issues to consider in deciding whether or not to schedule videoconferences on an MCU. Should sessions be scheduled on the MCU or should it be run in the ad hoc mode? If it is desired to schedule an MCU, should commercial scheduling software be purchased, or should university written scheduling software be used? Should the users do the scheduling, or should the MCU administrative staff do the scheduling? How should the users communicate their need for a videoconference session? How and who controls the videoconferencing session? Does scheduling provide a measure of security to the videoconference? How do you make changes in scheduled conferences?

This talk will try to answer some of these questions and describe a system that is in place and operating with a Radvision ViaIP enterprise videoconferencing system at Northwestern University. The scheduling system includes Northwestern written Web pages and an associated Java application that schedules the MCU using an API on the Radvision MCU. A description of the XML interface to the API and the interface to the Java code will be presented.

° 11:00 - 11:30 AM BOF, "Scheduling Software"

Now that you've built your ip video network, how do you ensure users can easily access and use it? The scheduling software you choose serves as the front door to your system. What style will your door be - steel reinforced? french with leaded glass? a simple archway? Schedulers can manage everything from endpoints, rooms and coffeemakers. Share with us what led you to your choice or what process you're going through now as you make a choice. Join Susan Bowers from csu.net and Stacey Donahue from Merit Network as they moderate this discussion and offer up their own experiences in navigating the selection process. Ed Stockey will share IHETS experience using "Click to Meet".

Breakout Track B: STREAMING VIDEO / VIDEO-ON-DEMAND

° 8:00 - 9:00 AM Dan Hague and Alan McCord (University of Michigan): "Architectures: From Video Storage to Campus Rich Media Services"

Individual campus video projects can easily require many Gigabytes of storage for even a short ten-minute asset. Once stored, those assets need to be cataloged, streamed and otherwise re-purposed. The University of Michigan is evaluating IP-based SANS to fill a niche that has not been addressed by traditional storage solutions. Disk Attached Storage (DAS) is inexpensive, but has neither the speed nor scalability required for managing video assets in a large organization.

Traditional SANS are islands of storage that can be incompatible with highly decentralized organizations. IP-based storage using iSCSI standards may be the answer that gives our campus the speed, scalability, and economics we need to manage our video assets.

Once we can make digital video assets available to the broad university community using an economical mass storage system, what are the other architecture and service components needed to insure that these video assets are in fact used? We will discuss some of the architectural components under review at the University of Michigan, including authentication and access control, content capture, digital asset management systems, linkages to course management systems and library cataloging systems, digital rights management, and student portfolios.

◦ 9:00 - 9:30 AM Julian Koh (Northwestern University): "NUTV - Television via Multicast Internet Video to Undergraduate Residence Halls"

Twenty entertainment television channels are being delivered to students in Northwestern University's undergraduate residence halls via the University's IP multicast-enabled data network. Service is delivered to 4300 users, with over 1000 users per day tuning in.

Channel Guide, and station listing have both been incorporated into a single user interface. Students access the service via a web browser that provides a portal to the thin client and support pages. There is no need to download, set up, or maintain a client resident tool.

NUIT will discuss the technical implementation, issues in deployment and support aspects of delivering this new service.

◦ 9:30 - 10:00 AM Break

◦ 10:00 - 10:30 AM Charles E. Branch, Ph.D., John Pruitt, James R. Barnes, Ed.D, and Eva Sartin, D.V.M. (Auburn University): "Low-Bandwidth Video Conferencing for Media-Intensive Distance Learning and Telemedicine"

Live video conferencing using high bandwidth videoconferencing can meet many educational needs for those fortunate enough to have Internet2 connections. But even H.323 videoconferencing using Internet2 does not give the quality of resolution and frame rate needed for some applications. Quality is even more elusive for those limited to low-bandwidth connections.

The need for two different approaches for solving this problem arose in projects involving instructional uses of digital video. Our faculty have been able to use high-resolution and high-quality MPEG2 video across our local Intranet in both classrooms and laboratories for some time. These applications need high quality in order to illustrate subtle abnormalities in neurological function, illustrate details of procedures, and illustrate necropsy examinations. The two applications resulted from a desire to use comparable quality videos with instruction and conferences over low bandwidth connections using the commodity Internet.

◦ 10:30 - 11:00 AM Chris Hodge (University of Tennessee) and Mike Estler (Georgia Institute of Technology): "The ViDe Streaming Media Cookbook"

Members of the Streaming Media Cookbook's editorial group will report on the Cookbook's progress, which is due to be released later this year. The editorial group will discuss in some detail several sections of the Cookbook -- Creating Digital Objects, Managing Digital Repositories, Digital Rights Management, Accessibility Issues, and Emerging Technologies.

◦ 11:00 - 11:30 AM BOF, "Streaming Topics"

The BOF topics will be played by ear, according to interests of the group. At minimum, we'll provide opportunity for the Streaming Cookbook editors to spend some time together; have an in-depth discussion about videoconference-to-streaming gateway technologies; and learn more about the stream and presentation recording being performed at the Workshop by Virage.

Breakout Track C: NEW TRENDS FROM THE DEVELOPER COMMUNITY

◦ **8:00 - 9:00 AM Larry Amiot (Northwestern University/Argonne National Laboratory): Session Initiation Protocol (SIP)** (panel discussion)

The Session Initiation Protocol (SIP) and its extensions have the promise of providing a new framework for interconnecting telecommunications devices. A session might be a simple telephone call or a multi-media, multi-point conference call that includes media such as telephones, instant messaging, audio/video conferencing, data sharing, file transfer, and FAX. "Presence" is the ability to manage the willingness and ability of users and their devices to communicate with other users on the network and is a key component of emerging SIP technologies. This session will provide short presentations from three different points of view: a vision from an Internet2 working group, a vision from a videoconferencing system vender, and a view from Microsoft. At the end of the short presentations, there will be an opportunity to ask questions of the panel on their perspective of the future of SIP and its impact on emerging technologies.

Panel:

- Ben Teitelbaum (Internet2)
- Todd Needham (Microsoft)
- Orit Levin (Radvision)

◦ **9:00 - 9:30 AM Dr. Chitra Dorai (IBM T.J. Watson Research Center): "Shareable Rich Media Learning Object Repositories and Management for e-Learning"**

This presentation describes Saras, a project to develop new technologies and middleware tools to enable databases and content management products for standards-based e-learning and for supporting shareable and searchable learning object repositories, rich with media. Automated content indexing and annotation capabilities that provide standards-compliant metadata for media and other learning objects to facilitate easy location, browsing, and reuse are crucial in fostering informal and just-in-time learning modes that are a necessary part of life-long and continual education and training in many organizations. The technologies presented are standards-compliant with respect to both rich media and e-learning aspects, and include extraction of MPEG-7 compliant metadata for media content and SCORM-compliant learning object metadata for archival, search, and retrieval of learning content. The media analysis research for this work was founded upon the principles of Computational Media Aesthetics which enables algorithms for automated, multi-granular and consistent content annotation, facilitates sharing and access of learning content objects. The speaker will discuss new value-added services provided by automated media analysis in deriving reusable media LOs, and locating and browsing rich media content at multiple description levels as supported by MPEG-7 and SCORM.

◦ **9:30 - 10:00 AM Break**

◦ **10:00 - 10:30 AM Jill Gemmill (University of Alabama at Birmingham): "Is Videoconferencing Ready for HIPAA?"**

A Q&A format panel discussion with developers of various videoconferencing applications regarding their plans for security and encryption. Videoconferencing users are increasingly concerned with security and privacy, whether insuring that their meetings are as private as they believe or simply owning and operating equipment that is secure from outside tampering. Recent finalization of federal HIPAA requirements - the Health Insurance Portability and Accountability Act of 1996 (HIPAA), applying to health information created or maintained by health care providers who engage in certain electronic transactions, health plans, and health care clearinghouses -- also directly impacts videoconferencing applications such as telemedicine (dermatology, psychiatry) and creates a need for expanded understanding of privacy and security across videoconferencing media.

Panel:

- Robert Olson (Argonne National Laboratory)
- Kun Wei (California Institute of Technology)
- Parker Emery (Tandberg)
- Tim Root (Polycom)
- Pierre Hagendorf (RADVision)

◦ **10:30 - 11:00 AM Paul E. Jones, Voice Systems Architect, Cisco Systems; Rapporteur for ITU-T Q.2/16; member H.323 Forum Leadership Team): "ITU H.323 Status/H.323 Forum"**

The first half of this presentation will focus on recent developments within the ITU-T related to H.323, particularly new additions and planned developments for the standard since H.323 v4. This will be followed by a discussion of the founding, purpose, accomplishments and planned activities of the H.323 Forum (<http://www.h323forum.org>). "The H.323 Forum was created under IMTC (with ITU support) to address a growing industry need to promote H.323 protocol awareness. While H.323 solutions are widespread, inaccurate protocol information abounds. The H.323 Forum provides the needed H.323 industry voice and meeting place.

◦ **11:00 - 11:30 AM ViDeNet Munch** Featuring select presentations live from the ViDeNet Munch (<http://www.unc.edu/video/videnet/munch>) on Quality of Service:

- R&E Network Perspective, Tyler Johnson, ViDeNet/UNC and Phil Coolick, Pennsylvania State University
- Standards Perspective, Mike Buckley, ITU-T Rapporteur Q.F/16

Note: The rest of the Munch will available for viewing during lunch for those who are interested.

◦ **11:30 - 1:00 PM Lunch**

Digital Video: Applications and Adventures II (1:00 - 4:00 PM)

◦ **1:00 - 1:30 PM Flowers Braswell (University of Alabama at Birmingham): "Technology as Vertical Teaming: Bridging the High School / College Gap"**

High school students often have difficulty making the transition from secondary to post-secondary education. Their problems have been documented to cause lower grades in college courses and higher dropout rates. However, one cause of the difficulty in transitioning is the discrepancy in expectations of secondary and post-secondary students and teachers. The English Department at the University of Alabama at Birmingham is using technology to bridge this gap.

Braswell's "Eureka!" Project was featured in the Chronicle of Higher Education.

◦ **1:30 - 2:00 PM Jim DeRoest (ResearchChannel): "Digital Asset Management Systems and Application"**

The ability to receive high quality audio and video in classrooms, labs and the home open up new opportunities for learning and research in genres requiring high resolution media such as animation arts, musicology, and life sciences. Building upon foundation work in high resolution media streaming, ResearchChannel is developing a tera-scale on-demand media management and distribution service called "DigitalWell". This service will broaden access to multi-discipline photo, audio and video collections enabling the development of new teaching and learning tools for mining and manipulating content. One such development effort is the Internet2 "Pacific Lighthouse" project, a collaboration between University of Washington and CENIC to aggregate and stream digital content to K20 institutions in Washington and California. The speaker will describe the challenges in developing large digital asset management systems, integration with broadcast systems, and their application for projects like Pacific Lighthouse.

◦ **2:00 - 2:30 PM Break**

◦ **2:30 - 3:00 PM Ed Price (Georgia Institute of Technology): "Moving Image Collections Project"**

The Moving Image Collections is a web portal for moving images that combines an archives

directory database with a union catalog to provide a window to the world's moving image collections for students, researchers, and the general public. In addition, it allows participating archives to collaborate in describing, preserving and digitizing these unique cultural resources. The Moving Image Collections is a collaborative project of the Association of Moving Image Archives (AMIA) and the Library of Congress, which will serve as the permanent host site for the Gateway. An important objective of the Moving Image Gateway is to bring a very flexible but standardized metadata architecture to these diverse resources to integrate moving images into the information mainstream. Underlying the project is the fundamental understanding that society values most what it understands and uses.

This project, funded by the National Science Foundation, also features a portal specifically for science materials that will be a part of the National Science Digital Library. {<http://gondolin.rutgers.edu/MIC/>}

◦ **3:00 - 3:30 PM Doug Pearson (ViDe Chair): Workshop Wrap-up**

◦ **3:30 PM Workshop adjourns**

Post Conference Workshop: Site Coordinator training for Internet2 Commons

Site Coordinator training for Internet2 Commons videoconferencing will be held in conjunction with this spring's SURA/ViDe Digital Video Workshop. Site Coordinator training will immediately follow, March 26 and 27. For details, visit: <http://commons.internet2.edu/train/Mar03.html>

