Michael R. Mundrane

Personal Data

Education

Ph.D.	Rutgers, the State University of New Jersey Mechanical and Aerospace Engineering	1995
M.S.	Rutgers, the State University of New Jersey Mechanical and Aerospace Engineering	1992
B.S.	Rutgers, the State University of New Jersey Mechanical and Aerospace Engineering	1985

Employment

Associate Chief Information Officer for Research

University of California at Berkeley (UCB) March 2012 – Jan 2013

Dual reporting to the Vice Chancellor for Research and the Acting Associate Vice Chancellor for Information Technology and Chief Information Officer.

Leader of the Research Information Technology business unit. The mission of research technologies is to develop, implement, operate, support and evolve technology solutions that will enable the University of California, Berkeley researcher community to pursue cutting edge research that is key to the success of the university mission of teaching, research and service. This business unit is responsible for providing technology and technical support for museum archives and collections, research data and content management, coordinating central support for high end computing and understanding, organizing and supporting campus position on research data life cycles.

Represent campus research technology and infrastructure needs on national bodies such as NSF supported working groups and Educause working groups.

Deputy Chief Information Officer

University of California at Berkeley (UCB) January 2009 – March 2012

Reporting to the Associate Vice Chancellor and Chief Information Officer.

Leader of Information Services and Technology (IST) business unit. IST was the university business unit responsible for the design, implementation, operation, maintenance and evolution of central IT facilities and services supporting the university community. It was a $70M annual operation with approximately 375 full time staff in four major functional areas: Application Services, Client Services, Data Services and Infrastructure Services. Within these functional areas resided university wide responsibility for voice, video and data network infrastructure, central administrative computing systems and operations, student systems, application and service development and management, and university wide analysis and support for the protection of sensitive data residing within respective business units. IST served as a central asset, developing and providing key systems and services, to allow for the success of business units across the institution as well as a consultative role model, adopting industry best practices, to assist business units in their own systems and operations

Responsible for the long-term strategic direction of central IT organization. This included the selection of appropriate operating structures and balancing competing and contradictory needs, analyzing and understanding the organizational relationship with campus business units and aligning activity and outcomes to university priorities. Inspired and motivated staff to improve the quality of overall operations and mentored leadership team to improve organizational management. Restructured existing lines of business based on demographics and impact. This included aligning development efforts in support of administration serving and student serving units. Refocused support for major infrastructure and established additional services for researchers.

Managed the response to 21% across the board university budget cut. This included restructuring costing within the organization, prioritizing programmatic reductions and adapting existing operations to function effectively with reduced resources. Position reductions were aligned with organizational long term strategic direction by applying a skills based selection process.

Develop and implement a university wide Data Network Recharge (DNR) business model to support primary telecommunications infrastructure. Perform business modeling to establish demographic applicability and long-term sustainability for the university data network. Establish a network governance council to oversee DNR business activity and provide advice on university needs.

Member of University Campus Technology Council (CTC), a consolidated campus IT governance structure responsible for identifying and prioritizing campus wide information technology needs and opportunities in support of the university mission. Work with other members of council to review and prioritize IT proposals submitted during annual campus budget process. Make recommendations for consideration by the campus CIO and the university Cabinet.

Member of the university CalPlanning executive steering committee. CalPlanning is a centrally supported university project that provides direct line of sight into financial plans and results at all levels of the institution in order to enable multi-year, strategic decision-making within and across campus constituents. CalPlanning is a one-stop shop for financial planning, budgeting, and forecasting. It provides reports and analytic tools that reduce manual work and increase decision-making ability. CalPlanning users are able to create multi-year plans and forecasts, and answer specific financial questions through ad hoc queries and analysis.

Member of University of California Cloud Computing Task Force (CCTF). This was an ad hoc working group created by the University of California Information Technology Leadership Council (ITLC) to assess cloud computing and its applicability within the University of California. Membership of the CCTF was drawn from major subcommittees of the ITLC and other University of California staff. The role of this CCTF was to analyze and form a working definition and description of cloud computing, assess its potential for applicability in pursuit of university missions, evaluate relevant facets of deployment and make recommendations to the ITLC for deployment and further study. Was lead author on the task force white paper outlining legal and contractual risks associated with cloud services.

Member of University Campus Information Security and Privacy Committee (CISPC), a standing body providing input and prioritization of UC Berkeley information security and privacy programs. The was responsible for identifying campus requirements, providing input to policy issues, and reviewing proposed standards. CISPC advises Systems and Network Security (SNS) group programs, priorities, and budgets. The Committee reviews requests for exception to campus security policies and provides input to campus leadership for the purpose of granting policy exceptions.

Analyze key IT issues, concerns and tends by participating in campus, system, state and national bodies, performing research and assessment, applying relevant rules, regulations and procedures, drawing conclusions and making recommendations. Present key technology related issues, concerns and trends to the university community. Communicate key issues, concerns, trends and other information to relevant stakeholders both orally and in writing. An example would be the presentation of key aspects of the communications network Funding model to the Chancellor's cabinet. This included a detailed assessment of the advantages as well as full disclosure of all caveats or disadvantages.

University Director of Enterprise Systems and Services

Rutgers, the State University of New Jersey July 2004 – December 2008

Reporting to the Vice President of Information Technology and Chief Information Officer.

The Enterprise Systems and Services (ESS) Division was the university business unit responsible for the design, implementation, operation, maintenance and evolution of central Information Technology (IT) facilities and services supporting the university community. It was a $25M annual operation with approximately 175 full time staff in four major functional areas: Telecommunications, Systems and Operations, Application Services, and Information Protection and Security. Within those functional areas resided university wide responsibility for voice, video and data network infrastructure, central administrative computing systems and operations, application and service development and management, and university wide analysis and support for the protection of sensitive data residing within respective business units.

Member of university wide Information Technology Strategic Planning Committee (ITSPC). The two university Executive Vice Presidents charged the ITSPC with developing a university-wide strategic plan for information technology. Worked in concert with the external chair of the Administrative Systems subcommittee to organize participation, analyze information and formulate best IT approaches. The output of this process was far reaching, but key elements included the recommendation to implement contemporary integrated administrative systems by leveraging an existing investment in primary vendors and to enhance support for online instruction.

Responsible for OIT analysis and university response to technology driven compliance questions. Examples include Gramm-Leach-Bliley (GLBA), Communication Assistance for Law Enforcement (CALEA), Payment Card Industry (PCI), Health Insurance Portability and Accountability Act (HIPAA), Family Educations Rights and Privacy Act (FERPA), and NJ Identity Theft Protection laws. These all pertain to the legal obligations and requirements incurred when possessing specific forms of data. Applied knowledge of computer and data security. Developed technical requirements associated with external policy and compliance. Drafted university policies, standards and guidelines to assist the university community achieve and maintain compliance with applicable laws. This included formal specification of software maintenance and patching, the implementation of standardized backup and recovery of university central systems, formal separation of responsibilities for application development and deployment, the application of quality control assessments to ensure data integrity and data access standards for both central and distributed use of university data.

Developed the overall process and structure for success of the Information Technology Project Governance Committee. This committee, with external chairs, provides key priority setting information for scheduling and resource allocation within ESS. The

decomposition of the leadership function from the management function allowed competing business partners to resolve priority conflicts between their respective units. Internal allocation of project assets was then managed consistent with committee priorities.

Directed and maintained the university Continuity of Operations (COOP) plan for institutional disaster recovery of all student and administrative systems. This included operational responsibility for quality assurance or robustness of operations associated with primary infrastructure (network, backup, etc) and university administrative applications (student, financial, etc). Maintained and evolved university disaster recovery plan for local and offsite recovery of administrative applications and services. Coordinated these capabilities with client business units to facilitate their business continuity strategies.

Member of OIT upper management and participant on committee to redesign IT pay structures to better respond to external competition. Designed the assignment process applied across the organization, developed a transition strategy to move all staff from the old pay structure to the new pay structure using a fixed allocation pool, validated the approach with university HR and an external consultant, and led implementation activities. Designed and implemented a compensation process consistent with university pay for performance guidelines that promoted broad equity goals and managed aggregate pay gaps over time. This process, unique at the university, entails building an abstract normalized pay model independent of available resources and allocating salary increases subject to global fitness constraints.

Developed a risk allocation model by applying a uniform cost of risk over time to a planned long-term budget. The fundamental planning principal was that information utilized for budget creation becomes increasingly stale over time. The designed model was solvable as either a bounded total risk or bounded rate of growth. This model was fundamental to the central administration analysis of subsequent ERP phases.

Introduced business analysis to identify performance throughput pathologies in campus desktop support unit. The dominant failure modes consisted of staff specific correlated results and capacity performance degradation due to head of line blocking in serialized response processes. Solutions consisted of standardization of response processes and tiered problem queues with defined throughput.

NJEdge Board of Directors

New Jersey Research and Education Network 1999 – 2008

NJEDge.Net supports its members in their institutional missions by providing collaborative resources and networked information services in support of teaching and learning; research and development; outreach and public service; as well as economic development throughout the state of New Jersey. In providing a broadband statewide network, NJEDge.Net establishes standards for interoperability, achieves economies of

scale and supports new and emerging technologies to foster and support productive use of technology across the academic enterprise.

Serve as a member of the NJEDge.net Network Advisory Board. Provided oversight to the NJEDge.net organization to ensure that evolution and operation of service and facilities met the needs of the education community in New Jersey. Held offices of Vice Chair and Chair.

Served on the New Jersey Higher Education Network bid evaluation group. Subsequent to award, continued to work with the state, the newly formed NJEDge.net organization, and the vendor to develop the final contract.

Designed the cost allocation and business model for NJEDge.net, the New Jersey Higher Education Network. Identified all fixed and variable costs and recommended a non-linear allocation strategy for fixed central costs that allowed for cost shifting from small institutions with small circuits to larger institutions with larger circuits. This funding and cost allocation methodology allows for NJEDge.net to function and facilitates full participation by all institutions of higher education in New Jersey, regardless of size.

Chair and lead engineer of the NJEDge.net Network Architecture Group, New Jersey Higher Education Network. Represented higher education institutions in New Jersey and worked directly with NJEDge.net, Verizon, and Cisco Systems to ensure that the statewide higher education network would provide state of the industry performance and services.

Director of Telecommunications

Rutgers, the State University of New Jersey — Oct 1999 – June 2004

Reporting to the University Director of Telecommunications, was responsible for all aspect of telecommunications systems and services, including the physical infrastructure, data operations, voice operations, and telecommunications project management.

Lead data network architect for the Rutgers Regional Network. This project is the next logical network layer to provide robust, high-speed connectivity between the university three major campus regions. Originally pursued as a dark fiber solution, this design was modified in recognition of competitive industry pressures and their corresponding impact on service costs. The current form of the Rutgers Regional Network consists of a managed Synchronous Optical Networking (SONET) facility that was competitively bid. Rutgers led the team that completed final network design and took full responsibility and oversight for the integration of this facility into existing topology.

Designed an infrastructure sustainment model for telecommunications. Unlike competing models that typify technology organizations (large unjustified flat charge, bounded loss) this model was based on true marginal cost allocation for projected mean

use. As a simple industrial engineering projection, aggregate deployment costs over time were recovered through marginal charges applied to individual customer projects.

Designed and deployed university border network security infrastructure. This included the first deployment of university wide firewall facilities for the purpose of providing state based traffic management, incorporation of network intrusion detection facilities for both historical and real time assessment of threats, the incorporation of network segment specific security postures and the deployment of a university DMZ network segment for the deployment of systems and services that required direct Internet connectivity.

Designed and deployed university internal security infrastructure. This included the incorporation of RFC1918 address space for internal network infrastructure, a university wide network address translation policy and infrastructure to promote low tech security improvements at the LAN level, the implementation of client controlled custom access control list on departmental LANs, and the deployment of a data center out of band network for administrative access to core university infrastructure.

Designed and was responsible for the implementation of the university response to Peer-to-Peer (P2P) traffic. Activity was managed through the application of an engineering and accounting model. Post facto data analysis and response permitted the automated traffic shaping of residential networking in the aggregate and direct monitoring and oversight of academic locations. The university approach was application insensitive and was based on gross data transfer characteristics and not content. This approach kept the growth in Internet connectivity to modest levels and was presented and was well received at an EDUCAUSE regional conference.

Lead data network architect for Internet2 facility at Rutgers University. Designed and implemented critical network structures and processes to ensure that faculty and research associated with Internet2 applications or application development would receive full access to Internet2 class bandwidth. Managed the deployment of Internet2 concurrent with the RUNet project to ensure that there would be no overlap or sunk deployment. Responsible for the extension of Internet2 bandwidth to all of higher education in New Jersey through the Internet2 Sponsored Education Group Participants program. Rutgers University, through a connection to NJEDge.net, delivered Internet2 connectivity to higher education in New Jersey.

Associate Director Network Operations

Rutgers, the State University of New Jersey Aug 1998 - Sep 1999

Reporting to the Director of Telecommunications, was responsible for all aspects of network operations, including design, deployment, and management of the university data network. Was responsible for all aspects of network administration, including structuring of budgets and management of contracts, prioritizing and directing the immediate work effort of network specialists, developing both short term and long term

plans and overseeing all aspects of design, staging, implementation and operational activities both operational and project related.

Lead data network architect for RUNet project. This capital investment project was a $100M data network project that represented a comprehensive design and construction of new university voice, video and data network. The data network design and deployment portion represented 20% of the project and was completed entirely by university staff. The fundamental design paradigm employed was the concept of geographic independence. Network performance and data pathways were suitable and similar regardless of location. This accommodated the university community independent of campus location or building.

Responsible specification, acquisition, configuration, deployment, maintenance and upgrading of all hubs, switches, routers and other network devices associated with the wide area network (WAN) connectivity, core, distribution and access layers (LAN) of the university data network infrastructure. Operations included understanding and assessment of network protocols and traffic patterns, responding to network outages or other problems, maintaining network software through installation, fixes and upgrades, and providing connectivity to the university community locally and remotely.

Assistant Director Network Operations

Rutgers, the State University of New Jersey June 1998 – Jul 1998

Reporting to the Associate Director of Network Operations, was responsible for all aspects of network operations, including design, deployment, and management of the university data network.

Manager of Information Technology

Rutgers, the State University of New Jersey, College of Engineering May 1996 – May 1998

Reporting to the Department of Mechanical and Aerospace Engineering, was responsible for systems and infrastructure in the College of Engineering. This included direct budget and management oversight of the Supercomputer Remote Access Center, the Center for Computational Design, the college data network, and college centralized IT services.

Hired both full time professional and part time student IT staff. Was responsible establishing performance standards, performing timely and accurate staff evaluations, setting staff short term and long term priorities, directing work effort, monitoring schedules and ensuring the successful completion of both operational and project related activities.

Worked closely with school community to ensure that systems and services were aligned with stakeholder needs. Developed or obtained training and other information materials

to ensure access and use broadly within the school community. Established controlled facilities at multiple locations to provide physical layer security for infrastructure that was either directly or collaboratively managed. Incorporated global patching and configuration management infrastructure to ensure consistent system performance and security status.

Systems Administrator

Rutgers, the State University of New Jersey, College of Engineering Jun 1995 – Apr 1996

Reporting to the Manager of the Supercomputer Remote Access Center, was responsible for the management of central college networking, operation of central servers, and delivery of central services such as compute, storage and email. Applied knowledge of industry best practices with respect to operations, security, automation and technology trends.

Analyzed system capacity, availability and robustness. Maintained system security through the application of both physical and software based controls. Monitored status of software patching and implemented timely corrections. Reviewed system logs for anomalous behavior. Initiated corrective action through hardware upgrades (disk, memory, etc), configuration changes and other systems changes to ensure the highest practical level of performance.

Was responsible for planning and coordinating projects for school IT systems which included the design, acquisition, staging, configuration, deployment and upgrade of hardware, software and associated building facilities.

Mechanical Engineer

Navel Air Engineering Center (NAEC) Jul 1985 – Aug 1989

Department of Defense (DoD) position culminating at the GS12 level with secret security level clearance..

Reporting to the manager of Support Equipment Engineering Department (SEED) was the lead engineer in support of maintenance hoists and cranes in support of Marine and Navy operations. Duties included oversight of contracts and evaluation of engineering proposals and implementation to correct problems, improve capability, or reduce costs.

Reporting to the manager of the Systems Engineering and Standardization Department (SESD) was responsible for the modernization of a major fleet wide program to track a specific class of system failures. Developed database infrastructure for failure analysis to identify trends and focus response.

Consulting

Performed operations analysis pertaining to all aspects of IT operations and support for the Center for Advanced Internet Processing.

Developed custom contract management and tracking tools for PM/DCATS, Fort Monmouth, New Jersey.

Acted as a technical liaison for the CFG/HT Laboratory at Rutgers, the State University of New Jersey.

Conducted research and provided technical recommendations to the Laboratory for Extraterrestrial Structures Research, Rutgers, the State University of New Jersey.

Teaching Experience

Undergraduate level: Introduction to Computing for Engineers, Mechanical Engineering
Computational analysis and Design, Mechanical Engineering
Measurements Lab.

Grants

Zebib, A. and Mundrane, M., ``Oscillatory thermocapillary convection," NASA microgravity science, 1993.

Zebib, A. and Mundrane, M., ``Buoyant thermocapillary flows," PSC, 85 CPU hours, 1992.

Zebib, A. and Mundrane, M., ``Three-dimensional buoyant-thermocapillary convection," PSC, 150 CPU hours, 1990.

Academic Work

Ph.D. dissertation, “Character and stability of two dimensional thermocapillary convection and buoyant thermocapillary convection in differentially heated cavities,” Mechanical and Aerospace Engineering, Rutgers, the State University of New Jersey, May 1995.

M.S. thesis, “Three-dimensional buoyant thermocapillary convection in a cavity,” Mechanical and Aerospace Engineering, Rutgers, the State University of New Jersey, January 1992.

Professional Organizations

EDUCAUSE.

Association for Telecommunications Professionals in Higher Education, ACUTA.

Papers Published

Mundrane, M., "RUNet 2000 Design and Implementatin," **ACUTA Journal of Telecommunications in Higher Education**, **4** (4), 12-17, Winter 2000.

Mundrane, M. and Xu, J. and Zebib, A., "Thermocapillary convection in a rectangular cavity with a deformable interface," **Advances in Space Research**, **16** (7), 741-753, 1995.

Mundrane, M. and Zebib, A., "Oscillatory buoyant thermocapillary flow," **Physics of Fluids A**, (6), 3294-3304, October 1994.

Mundrane, M. and Zebib, A., "Steady and oscillatory buoyant thermocapillary convection," **Computational Mechanics**, **5** (14), 411-419, August 1994.

Mundrane, M. and Zebib, A., "Two and three-dimensional buoyant/thermocapillary convection," **Physics of Fluids A**, (4), 810-818, April 1993.

Reports

Almes, G., Mundrane, M. et al., "What's Next for Campus Cyberinfrastructure. ACTI Responds to the NSF ACCI Reports," EDUCAUSE Advance Core Technologies Initiative Campus Cyberinfrastructure (ACTI-CCI) working group, July 2012.

Stewart, Almes, Bottom, Mundrane, et al., "National Science Foundation Advisory Committee for Cyberinfrastructure Task Force on Campus Bridging," Final Report, March 2011.

Dreher, Ahalt, Almes, Mundrane, Pepin, and Stewart, "Campus Bridging: Campus Leadership Engagement in Building a Coherent Campus Cyberinfrastructure Workshop Report, Anaheim, California, October 11-12, 2010.

White Papers

Abrams, S., Cruse, P., Kunze, J., and Mundrane, M, "Total Cost of Preservation (TCP): Cost Modeling for Sustainable Services," Rev. 0.16, April, 2012.

Mundrane, M., "Proving an Upper and Lower Bound on the Overhead Ratio for Arbitrarily Complex Systems of Services," **University of California, Berkeley**, May 2010.

Mundrane, M. and Walker, D., "Potential Legal and Contractual Issues Associated with Cloud Computing," **University of California**, June 2009.

Mundrane, M., "Bounded Risk Assignment Based on Simple Rate of Growth for Preliminary Modeling of Long Term Projects," **Rutgers University**, March 2007.

Mundrane, M., "Application of Equity Theory to Compensation Decisions within a Conforming Raise Program," **Rutgers University**, January 2007.

Mundrane, M., "Identification and Application of Global Constraints to Promote Equity within a Conforming Bonus Program," **Rutgers University**, January 2007.

Mundrane, M., "L2/L3 inside plant design standard," **Rutgers University**, September 2000.

Mundrane, M., "Virtual Local Area Network design standard," **Rutgers University**, August 2000.

Hayes, T., Jackson, E., and Mundrane, M., "An IP Addressing Solution for RUNet," **Rutgers University**, March 1999.

Mundrane, M. and Perino, M., ``Compute Server Hierarchy," **Rutgers University**, March 1999.

Hayes, T. and Mundrane, M., "RUNet 2000 access: Connected vs. Compliant," **Rutgers University**, March 1999.

Mundrane, M., "Operational evaluation of layer 3 switching," **Rutgers University**, November 1998.

Mundrane, M. and Storer, M., "RUNet 2000 as a distinct network," **Rutgers University**, November 1998.

Mundrane, M., "RUNet 2000 design methodology," **Rutgers University**, November 1998.

Mundrane, M. and Hayes, T., "RUNet 2000 design model," **Rutgers University**, November 1998.

Harnaga, D. and Mundrane, M., "RUNet 2000 fiber plant," **Rutgers University**, November 1998.

Mundrane, M., "RUNet 2000 implementation model," **Rutgers University**, November 1998.

Latzko, A., Mundrane, M., and Hayes, T., "The impact of alternate network protocols on the design of RUNet 2000," **Rutgers University**, November 1998.

Technical Notes

Mundrane, M. and Zebib, A., "Low Prandtl number Marangoni convection with a deforming interface," **AIAA J. of Thermophysics and Heat Transfer**, **9** (4), 795-797, 1995.

Papers Presented

Xu, J., Mundrane, M., and Zebib, A., "Nonlinear Stability Analysis of Thermocapillary Convection in a Rectangular Cavity," **48th Annual Meeting of the APS/DFD**, Irvane, CA, 19-21, November 1995.

Mundrane, M. and Zebib, A., "Marangoni convection with a deforming interface," **ASME IMECE**, November 1994.

Mundrane, M. and Zebib, A., "Two-dimensional buoyant thermocapillary flow," **ASME Winter Annual Meeting**, 18 November - 3 December 1993, New Orleans, LA.

Mundrane, M. and Zebib, A., "Two and three-dimensional buoyant/thermocapillary convection," **National Heat Transfer Conference**, 9-12 August 1992, San Diego, CA.

Mundrane, M. and Zebib, A., "Oscillatory thermocapillary convection," **Second Microgravity Fluid Physics Conference**, Cleveland, OH, June 1994.

Mundrane, M. and Zebib, A., "Buoyant/Thermocapillary convective flows," **International Conference on Computational Engineering Science**, Hong Kong, 17-22 December 1992.

Mundrane, M. and Xu, J. and Zebib, A., "Thermocapillary convection in a rectangular cavity with a deformable interface," **COSPAR 1994 G1 Symposium**, Hamburg, Germany, 23-16 July 1994.

Mundrane, M. and Zebib, A., "Oscillatory Buoyant-thermocapillary convection," **45th Annual Meeting of the APS/DFD**, Albuquerque, NM, 21-23 November 1993.

Mundrane, M. and Zebib, A., "Thermocapillary/buoyant convection in a rectangular cavity," **Fourth International Conference for Fluid Mechanics**, Cairo, Egypt, 28-30 April 1992.

Mundrane, M. and Zebib, A., "Three-dimensional buoyant-thermocapillary convection," **International Conference on Industrial and Applied Mathematics**, Washington, DC, 8-12 July 1991.

Mundrane, M. and Zebib, A., "Three-dimensional buoyant-thermocapillary convection," **43rd Annual Meeting of the APS/DFD**, Ithaca, NY, 18-20 November 1990.

Keynotes

Mundrane, M, "On the Edge, the Evolution and Impact of Disruptive Information Technology on Campus," Rutgers Information Technology in Education (RITE) Conference, 12 May 2004

Other Presentations

Mundrane, M, "Poised for Success in a Time of Change," **Cisco DACH CXO Higher Education Summit**, Next Generation Higher Education: How to Initiate and Manage Change, October 2011.

Mundrane, M, "Wireless as a Credible Infrastructure Alternative," **Ruckus Wireless Big Dogs Conference**, October 2009.

McCarthy, J, Mundrane, M, Costa, L, and Khan, S, "New Technologies in the Age of Computing Infrastructure," National Association of Graduate Admissions Professionals (NAGAP) Annual Conference, April 2005.

Mundrane, M, "An infrastructure and accounting response to Peer to Peer Traffic Volume," **EDUCAUSE Mid-Atlantic Regional Conference**, 16 January 2003.

Mundrane, M, "Alternate Careers in Engineering," **Rutgers University Governor's School**, 26 July 2001

Mundrane, M, "Video Over Internet Protocol," Association of **Higher Education Cable Television Administrators (AHECTA)**, 22 June 2001.

Mundrane, M, "Rutgers IT Complex," **EDUCAUSE Mid-Atlantic Regional Conference**, 4 December 2001.

Mundrane, M, "Rutgers Legacy Network Update," **Rutgers/Cisco Technical Conference**, 17 February 2000.