

## ASSURANCES - CONSTRUCTION PROGRAMS

OMB Approval No. 4040-0009  
Expiration Date 07/30/2010

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.


**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progress reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-1 33, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

*SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	*TITLE KINBER, Board of Directors
*APPLICANT ORGANIZATION KINBER	*DATE SUBMITTED 08-11-2009

***Michael Cherewka***  
**624 North Front Street**  
**Wormleysburg, Pennsylvania 17043**  
**(717) 232-4701**  
**(717) 901-3770**  
**Fax (717) 232-4774**

August 10, 2009

Administrator  
Rural Utilities Service  
U. S. Department of Agriculture  
Washington, D.C. 20250-1500

Assistant Secretary  
National Telecommunications and Information Administration  
Washington, D.C. 20230

Re: Keystone Initiative for Network Based Education & Research  
Our File No.: 2850.00

Dear Sir:

We are legal counsel for Keystone Initiative for Network Based Education & Research (KINBER), (the "Applicant"). In such capacity, we acted as counsel to the Applicant in connection with its ability to apply to the Broadband Initiatives Program and the Broadband Technology Opportunities Program and in the review of the grant agreement, as referenced in the Notice of Funds Availability.

We are of the opinion that:

(a) the Applicant is a duly organized and existing nonprofit corporation under the laws of the Commonwealth of Pennsylvania.

(b) the Applicant has corporate power: (1) to execute and deliver the grant agreement; and (2) to perform all acts required to be done by it under said agreement.

(c) no legal proceedings have been instituted or are pending against the Applicant, the outcome of which would adversely affect the Applicant's ability to perform the duties under the grant agreement, and there are no judgments against the Applicant which would adversely affect the Applicant's ability to perform the duties under the grant agreement.

Administrator  
Rural Utilities Service  
August 10, 2009  
Page 2

(d) The applicant has the power to own its property and carry out its business as now conducted.

Very truly yours,

  
Michael Cherewka

MC/dh

**Q 41 Government and Other Key Partnerships - PennREN**

<b>Organization</b>	<b>Name</b>	<b>Contact Information</b>	<b>Title</b>	<b>Role</b>
3ROX	Huntoon, Wendy	huntoon@psc.edu	Executive Director	Board Member Contractor Customer
Association of Independent Colleges and Universities of PA	Alexander, Tim	Tim.alexander@aicup.org	Vice President of Finance and Administration	Board Member Customer
Bucknell University	Myers, David	myers@bucknell.edu	Chief of Staff to the President	Board Member Customer
Carnegie Mellon University	Smith, Joel M.	412-268-2638	Vice Provost and Chief Information Officer	Board Member
Ciena Government Solutions	Peed, David L.	800-921-1144	Vice President and Managing Director	Partner Vendor, Equipment
Clarion University	Latour, Terry S.	tlatour@clarion.edu; 814-393-1931	Dean of University Libraries	Customer
Drexel University	Bielec, John A.	jbielec@drexel.edu	Vice President and Chief Information Officer	Board Member Customer
FiberTech	Hurley, Michael	585-697-5104	Vice President, Sales and Marketing	Partner Technical Support
eiNetwork	Williams, Ernest	412-622-6503	Manager of Technology Planning	Customer
The Hospital & Healthsystem Association of	Scanlan, Carolyn F.	cscanlan@haponline.org	President and Chief Executive Officer	Board Member Customer

Pennsylvania				
Lehigh University	Taggart, Bruce	Bmt2@lehigh.edu	Vice Provost, Library and Technology Services	Board Member Customer
MAGPI (Mid-Atlantic Gigapop in Philadelphia for Internet2)	Palmer, Gregory D.	gpalmer@magpi.net	Executive Director	Board Member Contractor Customer
MIND (mediaIndependence)	Blumenthal, Howard	215-483-3900 x220; hblumenthal@mindtv.org	CEO	Customer
PA Commission for Community Colleges	Heintzleman, Lisa	Lheintzleman@pacommunitycolleges.org	Director of Education and Development	Board Member Customer
Penn State Milton S. Hershey Medical Center	Abendroth, Thomas W.	717-531-8561	Chief Information Officer	Potential Customer
Pennsylvania Economic Development Association (PEDA)	Blair, Robert	Tcdc1@ptd.net	President and CEO	Potential Customer
Pennsylvania eHealth Initiative	Ciccocioppo, Martin	martinc@haponline.org	Board Chair	Potential Customer
Pennsylvania Mountains Healthcare Alliance	Snyder, Gregory W.	814-372-2355 x260; gsnyder@pmhalliance.org	Vice President for Technology	Potential Customer
Pennsylvania State System of Higher Education (PASSHE)	Stephens, Art	astephens@passhe.edu	Special Assistant to the Chancellor	Board Member Customer

The Pennsylvania State University	Kuhns, Jeffrey  Morooney, Kevin M.	<a href="mailto:Jck1@psu.edu">Jck1@psu.edu</a>  814-863-3746	Associate Vice Provost for Information Technology; Representative of Office of the President  Vice Provost for Information Technology	Board Member Customer Technical Support
The University of Pennsylvania	Palladino, Michael A.	mikep@isc.upenn.edu	Associate Vice President, Networking and Telecommunications	Board Member Customer
The University of Pittsburgh	Walton, Jim	412-624-6100	Director, Computing Services and Systems Development	Board Member Customer
Wall Street West	Ryan, Jim	jryan@nep.benfranklin.org	Director Outreach and Network Development	Board Member Customer
WHYY	Marrazzo, William J.	215-351-1200	President and CEO	Board Member Customer
WITF, Inc.	Pavelko, Kathleen A.	717-704-3000	President and CEO	Board Member Customer
WPSU Penn State Public Broadcasting	Krichels, Ted	814-865-3333	General Manager, Associate Vice President for Public Engagement	Board Member Customer
WQLN Public Media	Miller, Dwight J.	814-864-3001	President and General Manager	Board Member Customer



Dear PennREN Planning Team:

3ROX, the networking group of the Pittsburgh Supercomputing Center (PSC), is the regional hub in western Pennsylvania and northern West Virginia for the Internet2 and National LambdaRail research and education networks. We support the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intend to use the services this network will offer to facilitate the 3ROX mission of expanding access to research applications and educational opportunities through the facilities offered by the network.

The facilities-based network proposed by PennREN will allow 3ROX to enhance our current relationships with laboratories operated by the US Department of Energy and the National Oceanographic and Atmospheric Administration, as well as improve access for Pennsylvania researchers to PSC's NSF-funded computational infrastructure.

The services PennREN will offer include a shared network connecting member sites as well as Internet services available from a number of providers, both commodity and research and education. Interested entities will be able to provision private networks on this infrastructure using a variety of technological options.

We recognize that deployment of this network is contingent upon the award of funding from the NTIA BTOP program.

This network will empower 3ROX and our peer institutions with the ability to extend national and international research and education applications and facilities to every portion of the commonwealth, eliminating the bandwidth-related barriers which have existed hitherto. We believe this network will significantly enhance the services available to Pennsylvanians and will help move the commonwealth into a leadership role in the national networking landscape.

Sincerely,

Gwendolyn L. Huntoon  
Executive Director, 3ROX  
Director of Networking, PSC





Association of  
**Independent Colleges & Universities**  
of Pennsylvania

101 North Front Street • Harrisburg, Pennsylvania 17101-1405

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August 7, 2009

Dear PennREN Planning Team:

The Association of Independent Colleges and Universities of Pennsylvania supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our members in a cost effective manner.

Sincerely,

Don L. Francis  
President, AICUP

C: Tim Alexander  
VP Finance and Administration



**Bucknell**  
UNIVERSITY

Office of the Chief Information Officer  
Library and Information Technology  
Bucknell University  
Lewisburg, Pennsylvania 17837

Phone: 570-577-1557  
Fax: 570-577-3313  
[www.bucknell.edu](http://www.bucknell.edu)

August 7, 2009

Dear PennREN Planning Team :

Bucknell University supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities based network running on optical fiber and offering high-bandwidth/low latency. The services it will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for Bucknell University to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our faculty, students, and staff in a cost effective manner.

Sincerely,

Param Bedi  
Chief Information Officer

August 6, 2009

Dear PennREN Planning Team:

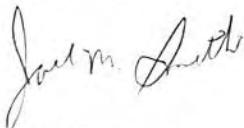
Carnegie Mellon University supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high bandwidth/low latency. The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, or utilize an entire wave, channel, or strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for Carnegie Mellon to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe PennREN will significantly enhance the services we can provide to our students and faculty in a cost effective manner.

Sincerely,



Joel M. Smith  
Vice Provost and Chief Information Officer  
Carnegie Mellon University



1201 Winterson Road  
Linthicum, Maryland 21090

800 921 1144 phone  
410 694 5750 fax  
www.ciena.com

August 13, 2009

To Whom it May Concern:

Ciena is very pleased to offer its support to the Pennsylvania R&E Network proposal submitted by the PennREN consortium. Ciena is willing to be a significant participant in this proposal from both an intellectual, technological and financial perspective. We at Ciena feel that this application, if awarded, will result in creation of a network that will serve as an ideal foundation in meeting the full range of PennREN networking requirements, supporting the network transport needs of the Pennsylvania State University system, the State System of Higher Education, and other institutions of research and higher education throughout the state.

In contribution to this effort, Ciena has worked closely with technical members of the proposal team on network design. We believe that the network as planned will serve current network requirements of Pennsylvania research and higher education institutions with an approach that will support both large capacity needs of research centers while extending the network to locations that today are underserved by high performance bandwidth. Additionally the network is designed to support new connectivity demands in the future with minimal incremental capital expenditure.

As a corporation headquartered in region in the state of Maryland and with numerous employees residing in Pennsylvania, we at Ciena look forward to working with PennREN to create a flagship network for the academic institutions of Pennsylvania. We fully support this initiative.

Sincerely,

David L. Peed  
Vice President and Managing Director  
Ciena Government Solutions





Office of Information Resources and Technology

August 9, 2009

Dear PennREN Planning Team:

Drexel University enthusiastically endorses the Pennsylvania Research and Education Network (PennREN) proposal for Broadband Technology Opportunity Program funding via the National Telecommunications and Information Administration. The university anticipates using several of the services expected to be offered on this new Commonwealth-wide network.

PennREN could offer Drexel's faculty and students researchers low latencies and high bandwidths via its optical fiber network with economically accessible connecting points. Through PennREN, Drexel will be able to dynamically initiate new pathways for collaborative research, not currently possible entirely within Pennsylvania. Further, the facilities-based PennREN network may allow Drexel to expand its academic administration initiative to help smaller struggling colleges take advantage of cutting-edge, Pennsylvania-based services to streamline administrative overhead and help contain the rising cost of education.

Drexel recognizes the PennREN network cannot be created without the award of NTIA funds. The BTOP program offers a rare opportunity to take giant strides forward beneficially, economically, and quickly.

Drexel University is eager to expand our access to and collaboration with a range of educational, medical, and cultural institutions across Pennsylvania, throughout the country, and around the world. We believe it will significantly enhance the services we can provide to our students, faculty, and the greater Philadelphia area.

Sincerely,

John A. Bielec, Ph.D.  
Vice President and  
Chief Information Officer

**LETTER OF INTENT ("LOI")**

This Letter of Intent ("LOI") is made as of the 10th day of August, 2009 (the "Effective Date") by and between FIBER TECHNOLOGIES NETWORKS, L.L.C. ("Vendor"), a New York limited liability company, having its principal office at 300 Meridian Centre, Rochester, New York 14618, and Keystone Initiative for Network Based Education and Research ("KINBER"), a 501(c), having its principal office at 401 Old Main, University Park, PA 16802-1505 ("Customer") (collectively, "Parties").

This LOI serves to provide an understanding between the Parties for an intent to enter into agreement for an IRU for 48 fiber strands throughout the State of Pennsylvania, provided that the project receives grant funding under the American Recovery & Reinvestment Act of 2009 ("ARRA"). For clarity of doubt, this agreement is not an order. In the event Customer receives Federal grant funding, then the Customer shall have the option of signing a separate Master Facilities Agreement ("MFA") with Vendor, which will include the following terms and conditions:

- Market = Pennsylvania, with map depicted in Schedule 1.
- Match = Fibertech agrees to provide a 20% match for the federal funds (as outlined in grant application guidelines) in recognition of the on-going value that Fibertech believes the network will enable.
- Term = 20-Year IRU
- At the end of the 20-Year IRU Term, Vendor and Customer shall have the option of renewing for two subsequent 5-year terms, or more as mutually agreed.
- Customer/Vendor will define payment terms, within the guidelines of the ARRA as they are released, with an effort to minimize cash outlay and financing requirements for both Parties.
- Vendor certifies that the Dark Fiber stands will adhere to the technical specifications listed in Schedule 1

This Letter of Agreement shall be effective for a one hundred and twenty (120) day period, and shall be superceded in the event that both Parties agree to enter into a Master Facilities Agreement.

**FIBER TECHNOLOGIES NETWORKS, L.L.C.**

By: Michael C. Hurley  
Print Name: Michael C Hurley  
Title: Vice President  
Date: August 14, 2009

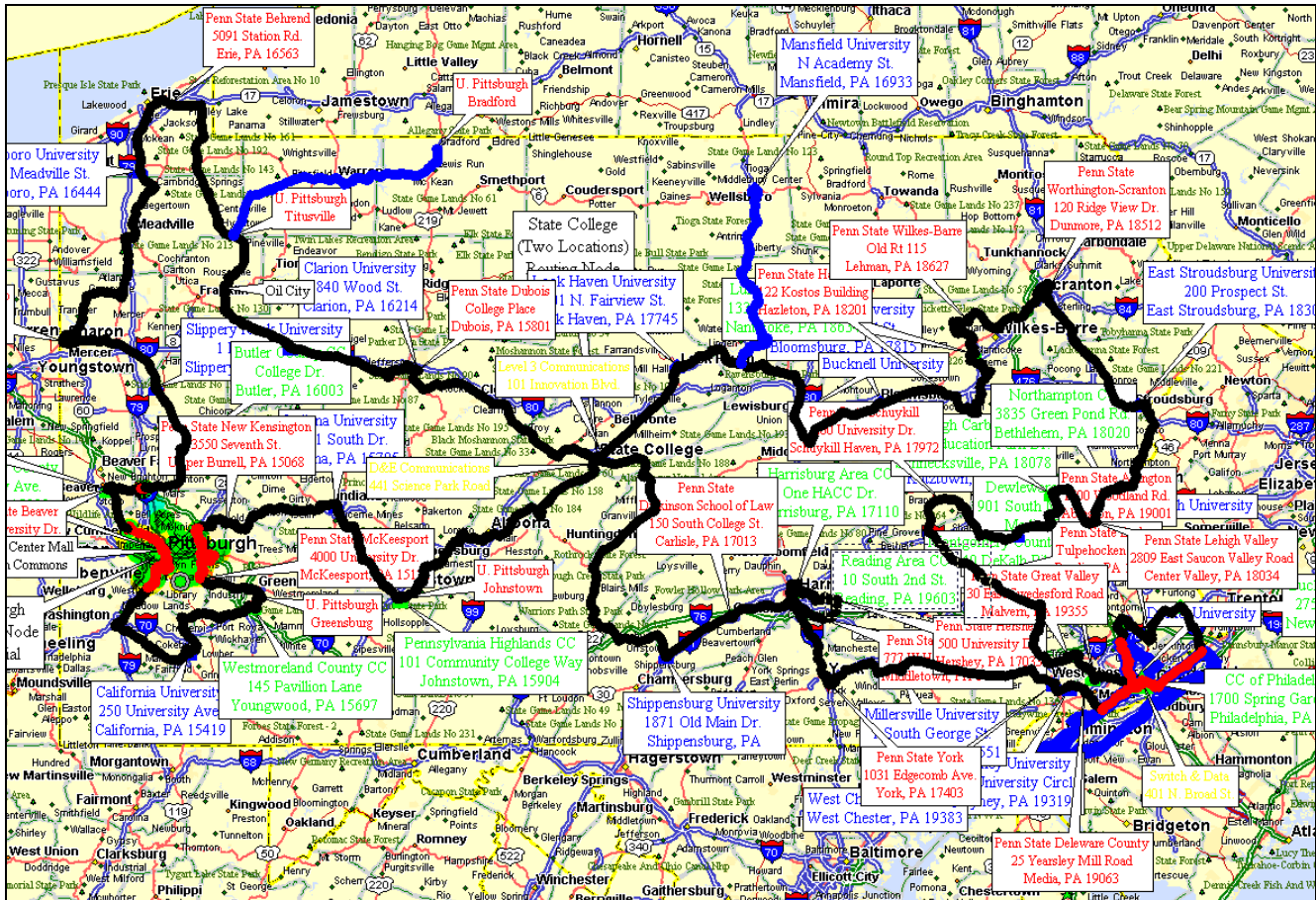
**CUSTOMER**

By: Arthur C. Stephen  
Print Name: ARTHUR C STEPHEN  
Title: BOARD MEMBER  
Date: 8/10/2009



## SCHEDULE 1 DARK FIBER ROUTE MAP AND ROUTE DESCRIPTION

Map:



**Route Description:** Vendor shall perform, or cause to be performed, such work, if any, at its expense, as may be required for placement of the Cable on or in the Routes as set forth in this Schedule 1.

**Cable Parameters:**

<p><b>Fiber type:</b></p> <p><b>Glass Type:</b></p> <p><b>Buffer:</b></p> <p><b>Operating Wavelength:</b></p> <p><b>Maximum Attenuation:</b></p>	<p>Single Mode (SMF-28) - Matched Clad</p> <p>8/125 microns</p> <p>Loose Buffer Tube Single Fibers or Loose Buffer Tube Ribbon Fibers Gel Filled and/or Dry Block</p> <p>1310/1550nm</p> <p>0.35 dB/km for 1310 wavelength</p> <p>0.25 dB/km for 1550 wavelength</p>
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**LETTER OF INTENT (“LOI”)**

This LOI is effective as of the \_\_\_<sup>th</sup> day of August, 2009 (the “Effective Date”) by and between Force10 Networks, INC (“Force10”), having its principal office at 350 Holger Way, San Jose California, and Pennsylvania Research and Education Network (“PennREN”), having its principal office at 401 Old Main, University Park, PA 16802-1505 (collectively, “Parties”). This Letter of Intent (LOI) is a non-binding agreement and neither party shall be legally obligated to the other by reason of this letter or negotiations to date.

This LOI serves to memorialize an understanding between the Parties regarding their intent to enter into an agreement for PennREN’s purchase C-Series switch/router products from Force10 provided that PennREN’s Pittsburgh Supercomputing project receives grant funding under the American Recovery & Reinvestment Act of 2009 (“ARRA”). PennREN is contemplating purchase of thirteen Force10 C-Series chassis (the “Products”), the final configurations of which will be mutually agreed upon by the parties subsequent to PennREN’s receipt of the anticipated ARRA funding.

**Firm Product Pricing:** If the final configuration of the Products ordered remains the same as set forth in the attached Force10 quote No. Q-31054 (the “Quote”), PennREN’s purchase price for the Products will not be greater than \$54,887.00. Services, including technical support and/or installation, integration and training services are not included in the preceding purchase price. This Product pricing will remain firm for the quoted configuration until expiration of this LOI.

For avoidance of doubt, this LOI is not an order. In the event PennREN receives funding pursuant to ARRA, then the Parties will enter into negotiations to agree upon terms and conditions of a separate Master Purchase Agreement the terms and conditions of which will govern purchase of the Products (“MPA”). In the event that the Parties enter into an MPA, this LOI will terminate upon execution of the MPA and will supersede this LOI in its entirety. Nothing in this LOI will be interpreted to commit PennREN to purchase Products at the price referenced above.

This Letter of Agreement will expire one hundred and twenty (120) days from the Effective Date.

**FORCE10 NETWORKS, INC.**

**PENNREN**

By: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_





Force10 Networks, Inc  
 350 Holger Way  
 San Jose, CA 95134 USA

408-571-3500 Phone

**Sales Quote (Draft)**

<b>Quote/Project Name</b>	PSC- PA State Project C300	<b>Quote Number</b>	Q-31054 Rev: 0
<b>Customer Name</b>	Pittsburgh Super Computing	<b>Contact Phone</b>	
<b>Contact Name</b>		<b>Contact Email</b>	
<b>Force10 Sales Contact Name</b>	Stillman, David	<b>Force10 Sales Ph/Fax</b>	917-447-7428 408-571-3696 (PO Fax)

**Hardware and Software**

Qty	Product Number	Description	Qty
1	CH-C300-BNA2	C300 8-slot chassis with backplane (CH-C300), fan subsystem (CC-C300-FAN), 2 AC power supply(CC-C-1200W-AC), 1 Switch and Route Processor Module (LC-CB-RPM)	1
2	CC-C-BLNK-LC	C-Series Line Card Blank Panel	6
3	CC-C-BLNK-PWR	C-Series Power Module Blank Panel	5
4	SW-CB-LATEST	C-Series Force10 Operating System Software Latest Version (for SRM series CB)	1
5	CB-C-AC-12-US	C-Series 4-Pack AC Power Cord for 1200W AC Power Supply CC-C-1200W-AC ,plug N5-15 (2.5m or 8ft)	1
6	LC-CB-10GE-8P	C300/C150 8 port 10Gigabit Ethernet line-card, XFP optics required (series CB)	1
7	LC-CB-RPM	C-Series Route Processor module (series CB)	1
8	CC-C-1200W-AC	C-Series 1200W Power Supply Module	1
9	LC-CB-GE-48P	C300/C150 48 port 1Gigabit Ethernet line-card, SFP optics required (series CB)	1
10	GP-XFP-1L	Qualified 10G XFP optics module - LR/LW (10KM)	8
11	GP-SFP2-1S	Qualified Gigabit Ethernet SFP optics module SX	1
12	GP-SFP2-1Y	Qualified Gigabit Ethernet SFP optics module LX	1
13	GP-SFP2-1T	Qualified Gigabit Ethernet SFP module 1000Base-T	1
<b>Hardware and Software</b>			<b>USD54,886.25</b>

**Maintenance and Support**

Qty	Product Number	Description	Qty
14	SV-CHC300-3	STARSUPPORT 24*7*365* TAC, HW Next Business Day, CH-C300 [For 1 Year]	1
<b>Maintenance and Support</b>			<b>USD2,570.79</b>
<b>Default Total</b>			<b>USD57,457.04</b>
<b>Total</b>			<b>USD57,457.04</b>

Quote requires approval

Quote Q-31054 Rev: 0 valid until 10-Sep-2009



THE HOSPITAL & HEALTHSYSTEM ASSOCIATION OF PENNSYLVANIA

**Carolyn F. Scanlan**  
President and Chief Executive Officer

August 11, 2009

RE: Letter of Support for PennREN's BTOP Funding Application

Dear PennREN Planning Team:

The Hospital & Healthsystem Association of Pennsylvania (HAP) supports the proposal of the Pennsylvania Research and Education Network (PennREN) for the Department of Commerce's National Telecommunications Information Administration (NTIA) funding available through the Broadband Technology Opportunity Program. HAP is a 501(c)(6) membership organization, representing nearly 250 Pennsylvania hospitals and health systems. HAP intends to encourage its members, as well as Pennsylvania health care stakeholders, to use the broadband services PennREN will offer.

PennREN represents an exciting opportunity for Pennsylvania health care stakeholders to more effectively share vital clinical information and provide telemedicine services. PennREN will eventually serve as the conduit to interoperability between health care providers and the Pennsylvania Health Information Exchange (PHIX), and the Nationwide Health Information Network (NHIN). We believe PennREN will significantly enhance the availability and the quality of health care services to all Pennsylvanians in a cost effective manner.

We understand that PennREN will be a facilities-based network running on optical fiber offering high-bandwidth and low latency. The services they will offer include a shared network, connecting many sites across Pennsylvania, as well as Internet services available from a variety of providers. Interested parties also will be able to create private networks for their exclusive use through an entire wave or channel, or an entire strand(s) of fiber. We recognize that the creation of this network is contingent upon the award of NTIA funds.

We are confident that PennREN's focus on supporting research and education with high-bandwidth and connectivity can be leveraged to effectively support health information exchange throughout Pennsylvania, particularly in rural areas.

Sincerely,

A handwritten signature in black ink that reads 'Carolyn F. Scanlan'.

CAROLYN F. SCANLAN  
President and Chief Executive Officer

4750 Lindle Road  
P.O. Box 8600  
Harrisburg, PA 17105-8600  
717.564.9200 Phone  
717.561.5334 Fax  
escanlan@haponline.org



Ted Krichels  
Associate Vice President, Public Engagement  
General Manager, Penn State Public Broadcasting  
238H Outreach Building  
University Park, PA 16802-7012

August 11, 2009

Dear PennREN Planning Team:

Independence Media / WYBE supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

As we understand the project, PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. Apparently, the services to be offered include a shared network connecting member sites, as well as Internet services available from a variety of providers. We're intrigued by the potential for parties will also be able to create private networks for their exclusive fiber--this significant customization is a major step forward in the distribution of digital media. For public broadcasters in Pennsylvania, PennRen presents an opportunity to re-establish some lost functionality previously provided by a statewide fiber network (dismantled in 2009 due to state funding cutbacks).

This is an exciting opportunity for our organization--and other organizations-- to distribute educational content throughout the state. PennRen could significantly enhance the services we can provide to the public in a cost effective manner. We are strong believers in the widespread dissemination of learning materials through television, the internet, and other means, and we understand that this new project will further enhance these capabilities in several significant ways.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

Sincerely,

A handwritten signature in black ink, appearing to read "Howard Blumenthal". The signature is fluid and cursive, with a long horizontal stroke at the end.

Howard Blumenthal  
CEO, Independence Media

215-483-3900 x220  
hblumenthal@mindtv.org



LEHIGH  
UNIVERSITY.

Library and Technology Services  
E.W. Fairchild-Martindale Library  
and Computing Center  
8A East Packer Avenue  
Bethlehem, PA 18015-3170  
(610) 758-3025 Fax (610) 758-3004  
<http://www.lehigh.edu/lts>

August 3, 2009

Dear PennREN Planning Team:

Lehigh University supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities based network running on optical fiber and offering high-bandwidth/low latency. The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for Lehigh University to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our students, faculty, and staff in a cost effective manner.

Sincerely,

Bruce M. Taggart  
Vice Provost for  
Library and Technology Services



MAGPI

Dear PennREN Planning Team:

MAGPI is one of 23 Connectors in the United States that provides access to Internet2 across Pennsylvania, New Jersey and Delaware. We support the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intend to use the services they will offer to enable the MAGPI mission objectives of expanding research applications and education through technology.

The PennREN facilities based network, running on optical fiber and offering high bandwidth/low latency is completely compatible with our standards for advanced networking that we use with the U.S. Department of Energy and NOAA research facilities.

The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This network will empower MAGPI with the ability to extend global research and educational applications to every portion of the state, eliminating previous barriers from limited bandwidth capabilities. We believe it will significantly enhance the services we can provide to the communities of Pennsylvania.

Sincerely,

Gregory D. Palmer  
MAGPI Executive Director



# PENNSYLVANIA COMMISSION FOR COMMUNITY COLLEGES

800 North Third Street, Suite 405 • Harrisburg, Pennsylvania 17102  
phone (717) 232-7584 • fax (717) 233-4723 • [www.pacommunitycolleges.org](http://www.pacommunitycolleges.org)

August 10, 2009

Dear PennREN Planning Team:

The Pennsylvania Commission for Community Colleges supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program. The 14 PA Community Colleges look forward to the benefits and services to be offered within this network.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services they will include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use with the opportunity to utilize an entire wave or channel or an entire strand of fiber.

This is an exciting opportunity for the Pennsylvania Commission for Community Colleges and its 14 PA Community Colleges to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our students, faculty, and administration in a cost effective manner.

We encourage NTIA to support funding for the creation of the Pennsylvania Research and Education Network.

Sincerely,

A handwritten signature in cursive script, appearing to read "Diane C. Bosak".

Diane C. Bosak  
Executive Director





August 7, 2009

RE: Letter of Support for PennREN's BTOP Funding Application

Dear PennREN Planning Team:

The Pennsylvania eHealth Initiative (PAeHI) supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program. PAeHI is a 501(c)(3) public-private broad-based coalition committed to improving healthcare quality and efficiency through the effective use of information technology. PAeHI intends to encourage Pennsylvania healthcare stakeholders use the broadband services PennREN will offer.

We understand that PennREN will be a facilities-based network running on optical fiber offering high-bandwidth and low latency. The services they will offer include a shared network, connecting many sites across Pennsylvania, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use through the opportunity to utilize an entire wave or channel or an entire strand(s) of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

PennREN represents an exciting opportunity for Pennsylvania healthcare stakeholders to more effectively share vital clinical information and provide telemedicine services. PennREN will eventually serve as the conduit to interoperability between healthcare providers and the Pennsylvania Health Information Exchange (PHIX), and the Nationwide Health Information Network (NHIN). We believe PennREN will significantly enhance the availability and the quality of healthcare services to all Pennsylvanians in a cost effective manner.

We are confident that PennREN's focus on supporting research and education with high-bandwidth and connectivity can be leveraged to effectively support health information exchange throughout Pennsylvania, particularly in rural areas.

Best regards,

A handwritten signature in black ink, appearing to read "Martin J. Ciccocioppo". The signature is written in a cursive style with a large initial "M".

Martin J. Ciccocioppo  
Board Chair, Pennsylvania eHealth Initiative

[www.paehi.org](http://www.paehi.org)



To Whom It May Concern:

The Council of PAIUnet, the governance body of a statewide broadband network linking Pennsylvania's intermediate units and school districts, supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency which will offer services to organizations such as the PAIUnet.

The services will include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for enhancing the services and programs PAIUnet can provide to our member intermediate units, school districts and their students.

Sincerely,

A handwritten signature in blue ink that reads 'Lawrence J. O'Shea'. The signature is written in a cursive style.

Lawrence J. O'Shea, Ph.D.  
Council President  
PAIUnet





Office of the Chancellor | Dixon University Center | 2986 North Second Street | Harrisburg, PA 17110-1201  
717-720-4000 | www.passhe.edu

August 11, 2009

To the PennREN Planning Team:

On behalf of the Pennsylvania State System of Higher Education (PASSHE), I strongly endorse the creation of the Pennsylvania Higher Education and Research Network (PennREN).

PASSHE's 14 state-owned universities and their branch campuses are located in every region of the Commonwealth, primarily in smaller towns and boroughs. Several are in unserved or underserved locations. The universities are anchor institutions in their communities, providing stability, and economic and workforce development opportunities. More than 70 percent of our graduates take their first job in the Commonwealth. Approximately 40 percent of our students are first generation students and nearly half are from households with \$50,000 income or less. Providing affordable access to higher education is a core element of our mission.

Each of our campuses will be able to take advantage of enhanced broadband capacity as soon as it is available. The PennREN network represents the greatest opportunity for that to happen in the near future. Additionally, PennREN will produce unlimited possibilities to create a preK-20 continuum of learning as it links our preK-12 networks with a higher education network.

Unlike most states, Pennsylvania is without a higher education and research network linking the world-class capabilities of our education, research and health care institutions, placing us considerably behind our peers. The PennREN consortium is an unprecedented partnership, brought together to create the foundation for a new telecommunication infrastructure.

I strongly support this initiative and thank the NTIA for recognizing the value of broadband and the importance of higher education to serve as anchor institutions to raise the capabilities of the surrounding area.

Sincerely,

John C. Cavanaugh, Ph.D.  
Chancellor



August 5, 2009

Dear PennREN Planning Team:

The Pennsylvania Economic Development Association (PEDA), the premiere statewide economic development association comprised of nearly 400 economic development professionals whose primary mission is to promote and implement economic development in the Commonwealth of Pennsylvania, supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

Broadband access is critical for the economic development process for our businesses and our communities to be competitive in a global market. This is particularly true in our rural areas. In addition to “middle mile” service, we hope you will extend service to the “last mile” of the rural areas of the Commonwealth which are truly underserved.

PEDA understands PennREN will be a facility based network running on optical fiber and offering high-bandwidth/low latency which will offer services to organizations such as the Members of PEDA throughout Pennsylvania.

The services will include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds. This is an exciting opportunity for enhancing the services and programs we can provide to PEDA Members.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Blair", is positioned below the word "Sincerely,".

Robert J. Blair  
President



# University of Pittsburgh

*Computing Services and Systems Development*  
*Office of the Director*

728 Cathedral of Learning  
4200 Fifth Avenue  
Pittsburgh, PA 15260  
412-624-6100  
Fax: 412-624-3850

August 6, 2009

Dear PennREN Planning Team:

The **University of Pittsburgh** supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities based network running on optical fiber and offering high-bandwidth/low latency. The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for the University of Pittsburgh to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our students, faculty, and staff in a cost effective manner.

Sincerely,

A handwritten signature in black ink, appearing to read "Jinx Walton".

Jinx Walton, Director

Computing Services and Systems Development



## PENNSYLVANIA MOUNTAINS HEALTHCARE ALLIANCE

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August 12, 2009

RE: Letter of Support for PennREN BTOP Grant Application

To Whom It May Concern:

The Pennsylvania Mountains Healthcare Alliance (PMHA) supports the proposal of the Pennsylvania Research, and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program. PMHA is comprised of 18 rural, independent hospitals in central and western Pennsylvania. PMHA is actively engaged in developing Tele-Medicine and Hospital shared services for its member hospitals in an effort to improve patient outcomes, improve operational performance and reduce cost.

PMHA has carefully considered all of the regional proposals that it is aware of and has sent letters of support to only those which we believe will have a direct impact to our hospitals operations. The PennREN proposal is one of those that we believe will have direct operational improvements for the PMHA hospitals.

We understand that PennREN will be a facilities-based network running on optical fiber offering high-bandwidth and low latency. The services they will offer include a shared network, connecting many sites across Pennsylvania, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use through the opportunity to utilize an entire wave or channel or an entire strand(s) of fiber. We recognize that the creation of this network is contingent upon the award of NTIA funds.

We are confident that PennREN's focus on supporting research and education with high bandwidth and connectivity can be leveraged to effectively support health information exchange throughout Pennsylvania, particularly in rural areas.

Gregory W. Snyder

VP Technology

Pennsylvania Mountains Healthcare Alliance (PMHA)

150 McCracken Run Road

DuBois, PA 15801

814-372-2355 x260

[gsnyder@pmhalliance.org](mailto:gsnyder@pmhalliance.org)

August 6, 2009

Jeff Kuhns, Associate Vice Provost, Information Technology  
The Pennsylvania State University  
401 Old Main  
University Park, PA 16802

Dear Mr. Kuhns:

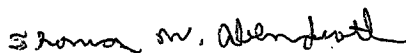
As you are aware, Penn State Hershey received an FCC Rural Health Care Pilot Program award (WC Docket No. 02-60) of approximately \$900K. This grant, *Enhancing Access to Discovery: Linking Rural Hospitals to Advanced Academic Medicine through IT Connectivity*, includes three specific objectives:

1. To link the Penn State Hershey Medical Center to partner hospitals to facilitate continuing medical education that advances the level of patient care at each hospital.
2. To develop an IT infrastructure that enables the rapid exchange of clinical information for consultation between academic medical center-based physicians and community-based providers.
3. To develop an IT infrastructure that facilitates remote monitoring and management of patients in rural communities by tertiary and quaternary care providers.

While the thrust of this grant is to advance healthcare in rural Pennsylvanian communities, the potential opportunities for education and research are significant. The ready availability of high quality local continuing education (e.g., via remote participation in medical grand rounds or tumor review boards) is especially important when a provider's absence from the rural community creates a deficit in the healthcare services available in that community. Similarly, an increased ability to accrue rural and underserved patients to clinical trials would help to address a well recognized research need.

Currently, we are working to identify the specific clinical programs that will be advanced by the improved telecommunications infrastructure to be funded through the FCC grant. Once we determine these clinical programs, I look forward to working with you to identify opportunities to connect this infrastructure to PennREN.

Sincerely,



Thomas W. Abendroth, MD  
Chief Information Officer, Penn State Hershey Medical Center and College of Medicine







August 5, 2009

Dear PennREN Planning Team:

The Pennsylvania State University supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program and intends to use the services they will offer.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services it will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

This is an exciting opportunity for Penn State to network not only with educational and health care systems in Pennsylvania, but also those throughout the country and the world. We believe it will significantly enhance the services we can provide to our faculty students, and staff in a cost effective manner.

Sincerely,

A handwritten signature in blue ink that reads 'Kevin M. Morooney'. The signature is fluid and cursive, with a large loop at the end.

Kevin M. Morooney  
Vice Provost for Information Technology



University Libraries

Clarion University of Pennsylvania  
Rena M. Carlson Library  
840 Wood Street  
Clarion, PA 16214-1232  
814-393-1931

July 23, 2009

Mr. Art Stephens  
Special Assistant for Information Strategy  
Office of the Chancellor  
Pennsylvania State System of Higher Education  
2986 North Second Ave.  
Harrisburg, PA 17110-1201

Mr. Stephens:

Robust Internet bandwidth is critically important for academic libraries to provide access to information and instructional services. As the complexity and volume of these services have increased, bandwidth capacity in some areas of Pennsylvania has been a limiting factor in the quality of services that libraries can provide in support of education and research. It constrains our ability to support the increasing demand for distance education in rural areas, as well as our capacity to support rural schools and public libraries. Access to unique resources, such as institutional repositories, are limited by the lack of Internet bandwidth in many areas of the State. The Pennsylvania Research and Education Network proposal to enhance the broadband infrastructure in Pennsylvania will help to expand educational opportunities and improve the quality of instruction and learning. It will improve broadband access to underserved areas of the State, stimulate economic development, and aid workforce training.

The State System of Higher Education Library Council reviewed the Pennsylvania Research and Education Network proposal to enhance the broadband infrastructure in Pennsylvania. We voted to endorse the proposal and to provide assistance and support with the effort as appropriate. We believe that this project will help us to better achieve our goals of providing equitable access to information resources and services. We encourage PENNREN to proceed with this effort and request that those individuals and bodies charged with reviewing the proposal favorably recommend its funding and implementation.

Sincerely,

*Terry S. Latour*

Terry S. Latour, Ph.D.  
Dean of University Libraries  
Keystone Library Network Chair on behalf of the  
State System of Higher Education Library Council



Information Systems and Computing  
Networking and Telecommunications  
Penn Video Networking Student Telephone Services

August 12, 2009

Dear PennREN Planning Team:

The University of Pennsylvania supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the broadband Technology Opportunity Program.

We understand that PennREN will be a facilities based network, running on optical fiber and offering high bandwidth/low latency. The services they will offer include a shared network connecting member sites as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks (educational, government, economic development, public television, etc.) for their exclusive use, the opportunity to utilize an entire wave or channel or an entire strand of fiber. We recognize that the creation of this network is contingent upon the award of NTIA funds.

This network will provide exciting opportunities in many areas for the University of Pennsylvania, most notably in continuing medical education, global research collaboration and in the economic development in Pennsylvania.

Sincerely,

A handwritten signature in black ink that reads "Michael A. Palladino".

Michael A Palladino  
Associate Vice President, Networking and Telecommunications



Wall Street West Executive Committee  
U.S. Department of Labor WIRED Grantee  
125 Goodman Drive  
Bethlehem, PA 18015

August 11, 2009

**RE: Letter of Recommendation for Pennsylvania Research and Education Network (PennREN)  
National Telecommunications and Information Administration (NTIA) Application**

To: National Telecommunications and Information Administration,

We have become aware of the Pennsylvania Research and Education Network (PennREN) application for a National Telecommunications and Information Administration (NTIA) grant as part of the Broadband Technology Opportunity Program (BTOP) to support their plan for an extensive state-wide fiber infrastructure build spanning Pennsylvania. This project will connect a number of the twenty-six colleges and universities in the ten county Northeastern Pennsylvania Wall Street West region. Vast portions of this ten county footprint are considered to be either unserved or underserved with respect to broadband penetration. Such a project would enhance the fiber optic network in support of the Wall Street West workforce development, education and economic development goals of our program.

Wall Street West is a not-for-profit partnership in Northeastern Pennsylvania that is enhancing the financial services, information technology, healthcare and related industries in the commonwealth of Pennsylvania through strategic workforce development and state-of-the-art economic development. Wall Street West is a collaborative effort of economic development agencies; technology investment groups; workforce development organizations; education and research institutions; and private sector companies across the region. This partnership is a first generation recipient of a \$15 million Workforce Innovation in Regional Economic Development (WIRED) grant from the U.S. Department of Labor for education and job training. Over the past several years this collaborative effort has invested more than \$11 million of these grant funds in 55 strategic workforce and education programs, and has leveraged an additional \$9 million of funds. More than 113,000 students, teachers, and incumbent workers have been trained, while 36 educational certificates, degrees, or curricula have been developed. In addition, 25 academic and workforce models have been developed and implemented. As demonstrated by these specific metrics of success, the commonwealth of Pennsylvania knows how to put federal funds to work and achieve significant results.

In addition to the workforce and education enhancement goals of Wall Street West, an advanced, redundant fiber infrastructure build connecting the region to the New York financial services industry was envisioned. Unfortunately, due to the economic upheaval of the past eighteen months, this aspect of the program is yet to be fulfilled. However, implementation of the PennREN fiber build in conjunction with private sector telecommunications partners could provide excess capacity for commercial applications. Such a network spanning Pennsylvania would be a critical factor for financial services, healthcare firms, and related industries as they evaluate locating operations in the commonwealth in the future. It appears that additional capacity in the PennREN fiber build plan could be made available to support these private industry needs, and result in economic stimulus for the region.

On behalf of the fifteen member Wall Street West Executive Committee I want to convey our strong recommendation in support of the PennREN National Telecommunications and Information Administration grant for their research and education fiber infrastructure build.

Sincerely,



Matthew J. Connell, Ph.D.  
Chairman, Wall Street West Executive Committee



## Wall Street West / WIRED Executive Committee

Matthew J. Connell, Ph.D.  
Committee Chairman;  
Dean, Monroe Campus  
Northampton Community College

Ed McCann  
Committee Vice Chairman;  
COO,  
Berks County Workforce  
Investment Board

R. Chadwick Paul, Jr.  
President and CEO,  
Ben Franklin Technology  
Partners of Northeastern  
Pennsylvania

Christopher J. Haran  
President and CEO,  
Northeastern Pennsylvania  
Technology Institute

Vito Gallo  
Assistant Vice President,  
State Relations,  
Lehigh University

Lawrence Newman  
Vice President,  
Community & Economic  
Development, Greater  
Wilkes-Barre Chamber of  
Business and Industry

Nancy Dischinat  
Executive Director,  
Lehigh Valley Workforce  
Investment Board, Inc.

Gerald Ephault  
Regional Manager,  
Pocono Northeast,  
Ben Franklin Technology  
Partners of Northeastern  
Pennsylvania

John Casella  
CareerLink Administrator,  
PA CareerLink of Monroe County

Jeffrey Box  
President and CEO,  
NEPA Alliance

Philip Mitman  
President and CEO,  
Lehigh Valley Economic  
Development Corporation

Penny Cannella  
President,  
Penn's Northeast

Scott Byers  
President and CEO,  
Diversified Information Technologies

### ***Ex-Officio Members***

Fred Dedrick  
Deputy Secretary,  
Workforce Development,  
Pennsylvania Department  
of Labor & Industry

Paul Opiyo  
Executive Policy Specialist,  
Pennsylvania Department  
of Community and  
Economic Development



August 12, 2009

Dear PennREN Planning Team :

William J. Marrazzo  
President and  
Chief Executive Officer

WHYY supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services to be offered include a shared network connecting member sites, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber. For public broadcasters in Pennsylvania, PennRen presents an opportunity to recreate functionality lost when their statewide fiber network was dismantled in 2009 due to state funding cutbacks.

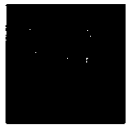
This is an exciting opportunity for WHYY to distribute educational content throughout the state. PennRen could significantly enhance the services we can provide to the public in a cost effective manner.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Marrazzo".

William J. Marrazzo  
President and CEO



WITF, Inc.

HOME FOR CURIOSITY.

August 10, 2009

Dear PennREN Planning Team:

As President and CEO of WITF, Inc., the public media organization serving south-central Pennsylvania, I am writing in support of the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

As proposed, PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services to be offered include a shared network connecting member sites, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber. For public broadcasters in Pennsylvania, PennREN presents an opportunity to recreate functionality lost when their statewide fiber network was dismantled in 2009 due to state funding cutbacks.

This is an exciting opportunity for WITF to distribute educational content throughout the state. PennREN could significantly enhance the services we can provide to the public in a cost effective manner.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

Sincerely,

Kathleen A. Pavelko  
President and CEO

WPSU-TV  
WPSU-FM  
CREATIVE SERVICES  
EDUCATIONAL  
SERVICES  
MEDIA SALES



August 7, 2009

Dear PennREN Planning Team :

Penn State Public Broadcasting supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

We understand that PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services it will offer include a shared network connecting member sites, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber. For public broadcasters in Pennsylvania, PennRen presents an opportunity to create an enhanced version of their statewide fiber network that was dismantled in 2009 due to state funding cutbacks.

This is an exciting opportunity for Penn State Public Broadcasting to distribute educational content throughout the state, and particularly to underserved rural areas in our broadcast coverage area. We believe that PennRen could significantly enhance the services we can provide to the public in a cost effective manner.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

Sincerely,

A handwritten signature in black ink, appearing to read "Ted Krichels".

Ted Krichels  
General Manager, Penn State Public Broadcasting  
Associate Vice President for Public Engagement, Penn State



PENN STATE PUBLIC BROADCASTING  
120 OUTREACH BUILDING  
UNIVERSITY PARK, PA 16802

814-865-3333  
FAX: 814-865-3145  
wpsu.org

August 10, 2009

Dear PennREN Planning Team :

WQLN Public Media supports the proposal of the Pennsylvania Research and Education Network (PennREN) for NTIA funding available through the Broadband Technology Opportunity Program.

PennREN will be a facilities-based network running on optical fiber and offering high-bandwidth/low latency. The services to be offered include a shared network connecting member sites, as well as Internet services available from a variety of providers. Interested parties will also be able to create private networks for their exclusive use, the opportunity to utilize an entire wave or channel, or an entire strand of fiber. For public broadcasters in Pennsylvania, PennRen presents an opportunity to recreate functionality lost when their statewide fiber network was dismantled in 2009 due to state funding cutbacks. This new network will also allow WQLN to provide expanded distance learning opportunities to the region's teachers for Act 48 and Graduate credits.

This is an exciting opportunity for WQLN to distribute educational content throughout the state. PennRen could significantly enhance the services we can provide to the public in a cost effective manner.

We recognize that the creation of this network is contingent upon the award of NTIA funds.

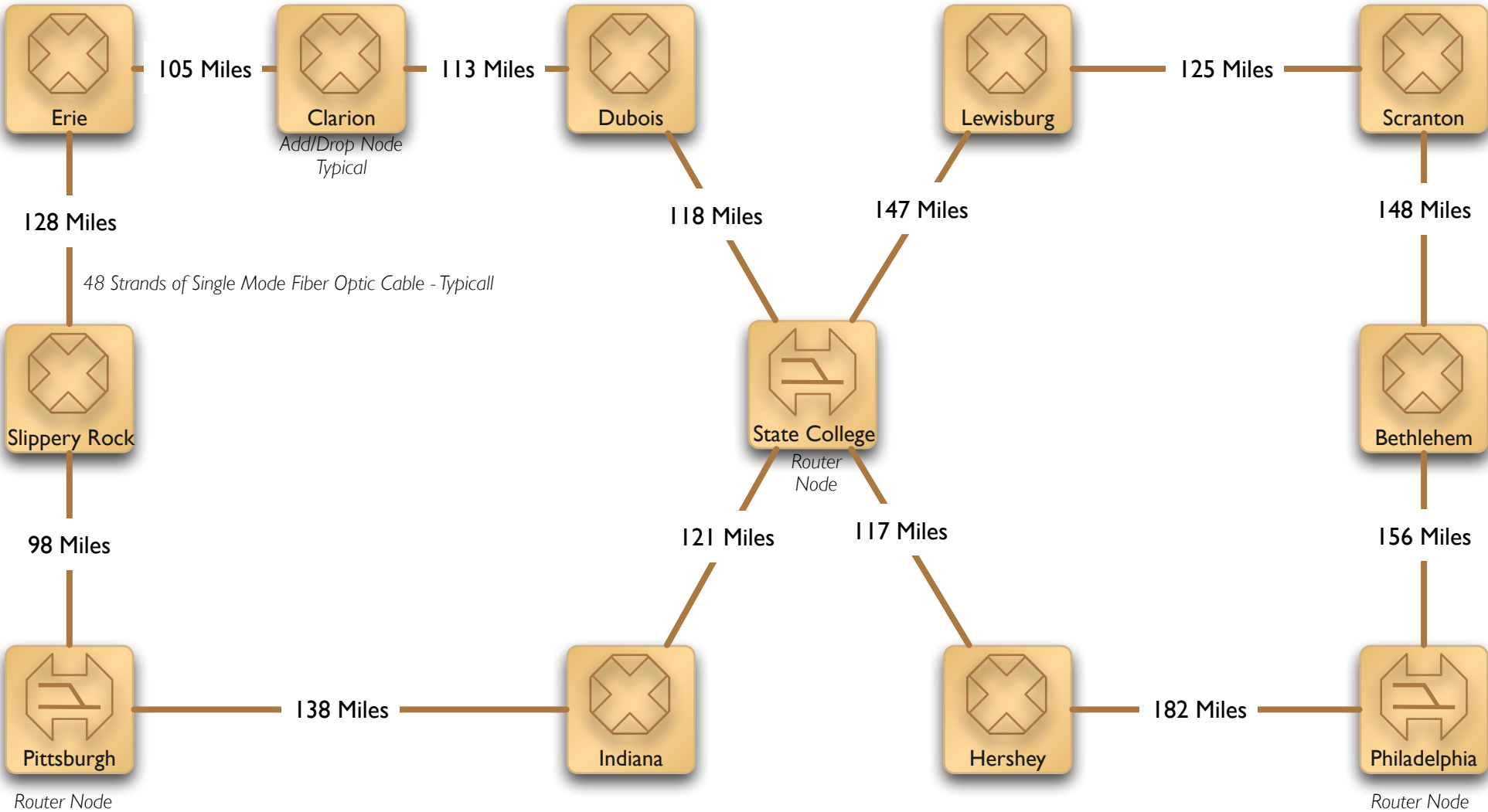
Sincerely,



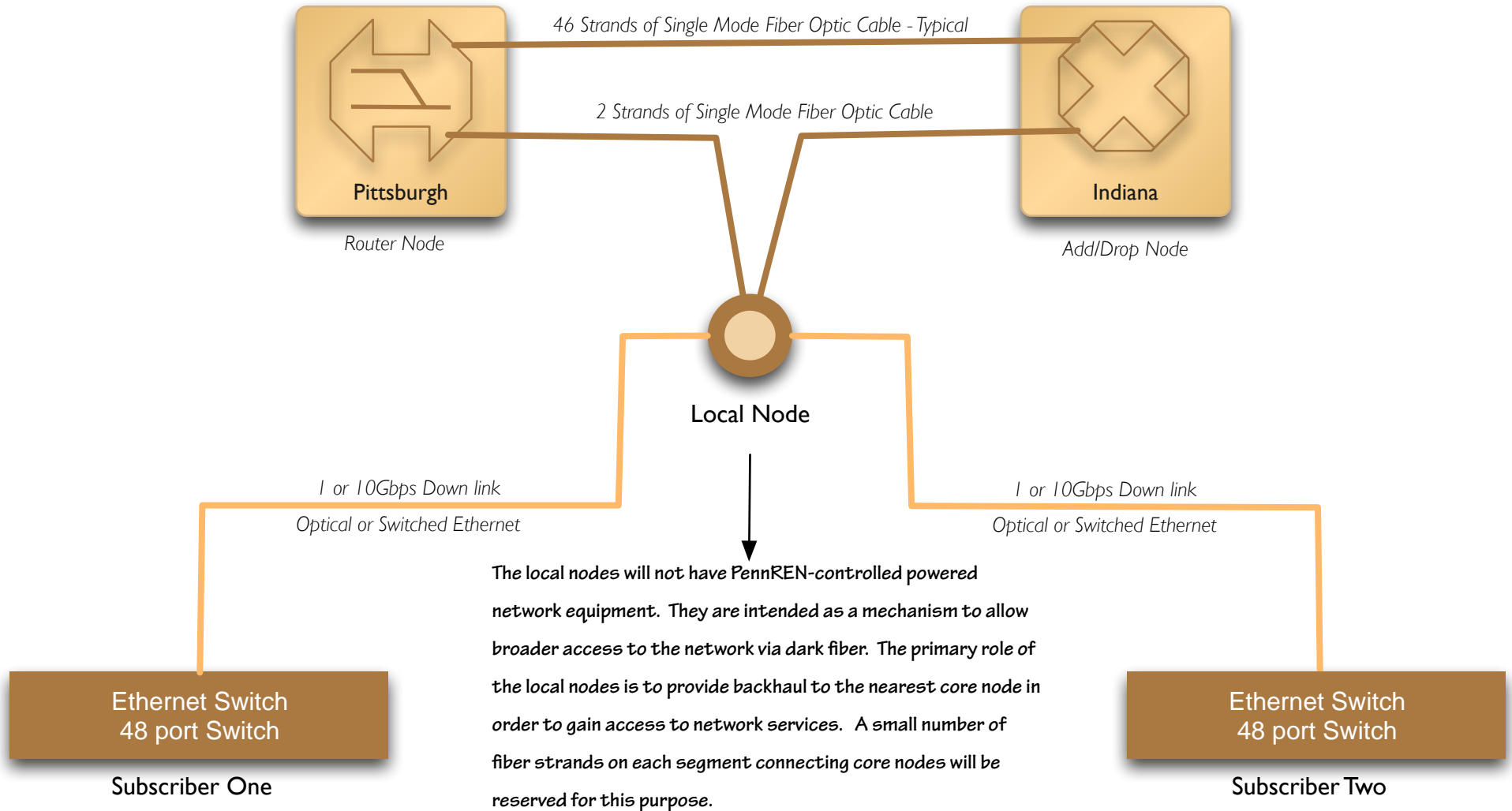
Dwight J. Miller  
President & General Manager

DJM

Logical Illustration of the Network Backbone

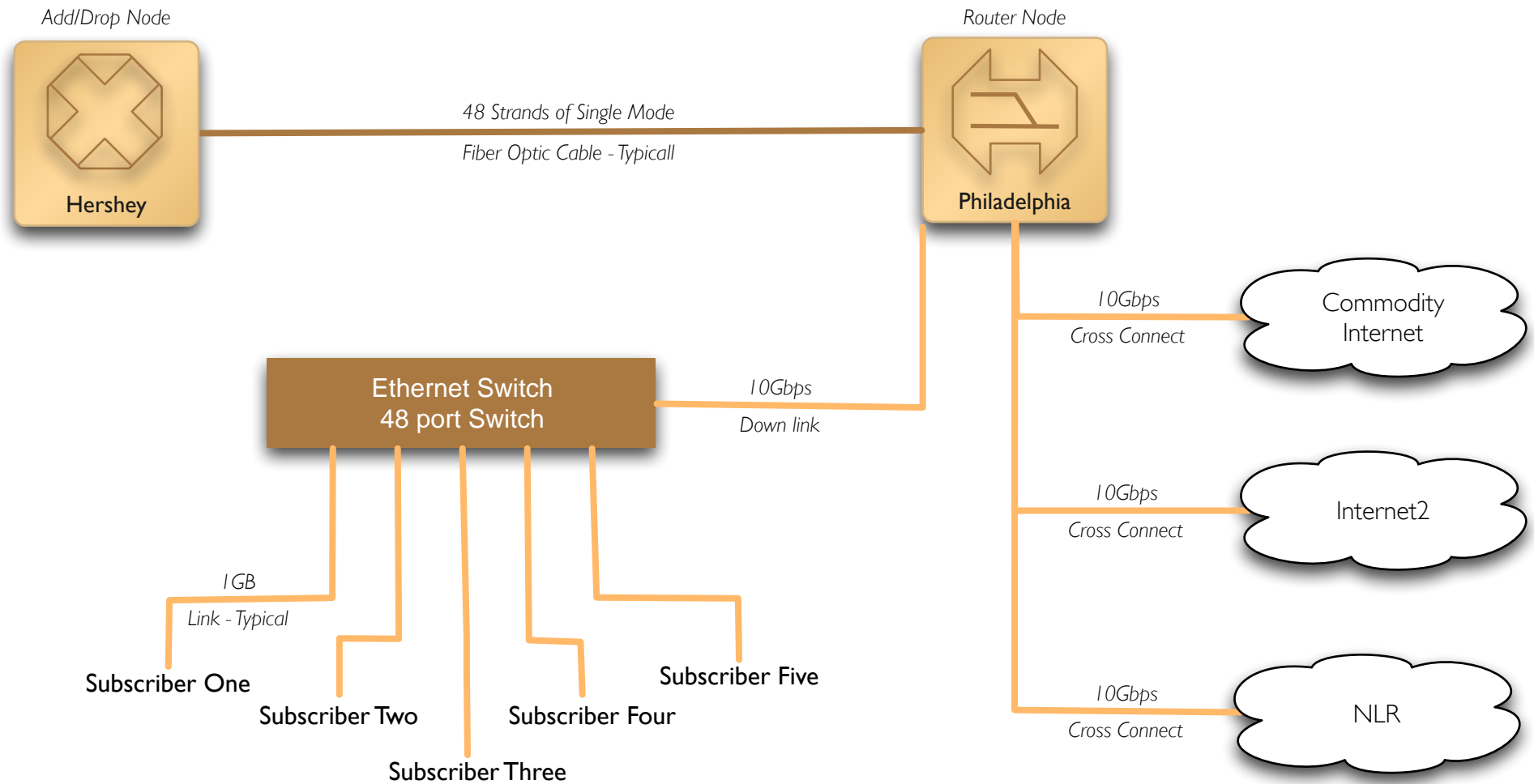


# Logical Illustration of Core Node w/Local Node Connection





# Logical Illustration of Core Node w/Local Ethernet Connection



Question 37:

The KINBER organization represents an unparalleled partnership of Pennsylvania's higher education and health care entities. The members consist of Bucknell, Carnegie Mellon, Drexel, Lehigh, PASSHE, Penn, Penn State, Pittsburgh, the Commission for Community Colleges, the Association of Independent Colleges and Universities and the Hospital Association of PA. The organizations committed to the KINBER Board have all appointed key senior technology or business leaders to direct and implement the network design. Examples of resumes from these member organizations are included to highlight our commitment and experience. Unfortunately due to the page limitations, we are not able to provide resumes for all stakeholders.

Although this group of institutions has not partnered together on a previous project of this size, most have implemented large independent networks to meet the needs of their respective organizations. Penn State and PASSHE have both implemented managed services networks that have linked their respective locations. Penn, through its affiliate Magpi, has been providing network and Internet2 services to over 600 customers for more than 10 years including several community colleges and school districts. These services include over 120 education programs to the K-12 community across the commonwealth. Pittsburgh and Carnegie Mellon have partnered to provide access to National Lambda Rail and other services to nearly a dozen customers for over 10 years through their affiliate Three Rocks. This association also provides access to the Pittsburgh Super Computer Connection. The Association of Independent Colleges and Universities of Pennsylvania has organized a series of managed services regional networks for its members.

The leadership team that has been meeting weekly since March has created the KINBER 501(c)3 organization and has worked out a sustainable, network design that meets the needs of its members while providing services to organizations that also meet its non-profit mission.

These efforts have also created a network of additional organizations that support the PennREN project including the University of Pittsburgh Medical Center, the Hershey Medical Center, the PA Electronic Health initiative, the PA Intermediary Units, public television stations, internet service providers, Wall Street West and the Pennsylvania Economic Development Association. KINBER's leadership has committed to work with the Commonwealth in a complimentary manner with their project to provide high speed services to the entire northern tier of PA - we will seek to eliminate redundancies and leverage their infrastructure when practical and offer our fiber resources to help them meet their objectives.

In summary, the KINBER organization is committed to the goals of the BTOP and is anxious to create a statewide mid-mile network that provides services to hospitals, higher education institutions, state and local government agencies, non-profits, economic development entities, libraries and other entities that meet the mission of KINBER. We believe that this network can be the basis for broadband infrastructure across the Commonwealth for the next several decades.

# Martin Joseph Ciccocioppo

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## Experience

January 1998 to Present

The Hospital & Healthsystem Association of Pennsylvania

### Vice President, Research

- Responsible for research and data initiatives in support of HAP's representation and advocacy agenda.
- Represents HAP on the Board of the Pennsylvania eHealth Initiative (PAeHI); Board Chair since November 2005.
- Represents HAP on the Pennsylvania Health Information Exchange (PHIX) Advisory Council.

January 1995 to Dec. 1998

The Hospital & Healthsystem Association of Pennsylvania

### Director, Policy Development and Regional Services

- Represented HAP on the Pennsylvania Information Highway Consortium Board and work groups.
- Developed association policy on key strategic planning and public policy issues and prepare for membership consideration.
- Insurance Commissioner hospital representative appointee to the PA Medical Liability Joint Underwriting Association.

June 1987 to December 1994

The Hospital Association of Pennsylvania

### Progressively more responsible positions within HAP's Research Division

- Project manager for development and implementation of HAP's Data Analysis Support System (DASS)
- Principal staff to multi-disciplinary membership Systems Technology Work Group dealing with health care technology issues.
- Developed software programs and computer systems in support of research and analytical projects

## Education

The Pennsylvania State University

Master of Health Administration, 1998

The Pennsylvania State University

Master of Business Administration, 1987

- Master's Paper: "Hospital Information Systems: An Empirical Case Analysis."

The Pennsylvania State University

Bachelor of Business Administration, 1986

- High Distinction
- Health Care Management major
- Information Systems major

# Lisa Heintzelman

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## Experience

June 2006 – Present

Pennsylvania Commission for Community Colleges

### Director of Education and Development

- Coordinate Workforce Development – Coordination Team Member for the Dept. of Economic Development's Workforce Leadership Grant
- Coordinate Grant Development – Project Manager for Wall Street West Grant for Financial Services Industry
- Coordinate Distance Learning

April 2000 – Present

Illuminations Consulting

### Educational Consultant (Owner)

- Professional Development
- Technical Assistance
- Program Development

## Education

Temple University

Master's degree in Educational Administration, December 1995

Elizabethtown College

Bachelor's degree in Elementary and Early Childhood Education, May 1993

- Cum Laude

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Harrisburg Area Community College

Associate's degree in Early Childhood Education

- Dean's List

# Peter J. Heverin

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## Experience

2006 – Present

MAGPI

### Subscriber Liaison

- Work with new and upcoming subscribers to get them connected to the MAGPI network. Subscribers include; K-12 schools, Intermediate Units, higher education, medical and research institutions in the Mid-Atlantic area.
- In-depth knowledge of all the operational aspects of K-12 schools and Higher Education institutions is required.
- Understanding of the public bid process, proposal writing, technical specification writing and IT and construction project management.

2005 - 2006

Enterprise Cable Group

### Program Director, Corporate Enterprise Projects

2003 - 2005

TekConnect, Inc.

### National Practice Manager, Infrastructure Consulting

- Primary duties include: feasibility studies, cost estimates, client presentations, designs of premises cabling systems, and the design and implementation of private fiber optic wide area networks infrastructure for educational institutions in K-12 and higher education markets

2003 - 2005

TekConnect, Inc.

### National Practice Manager, Educational Technology Consultant

- Primary duties included: development of a framework to assist the district in the assessment of the use of educational technology throughout the district and outlining the steps necessary to improve the effectiveness of the technology in the classroom and administratively.

1998 - 2002

Sunesys, Inc. / Blair Park Services, Inc. / Teranet,LLC

### Sales Engineer / Marketing Manager

- Primary duties included: feasibility studies, cost estimates, route maps, client presentations, the design of wide area network infrastructure for education, corporate and healthcare organizations, writing press releases, managing and creating direct mail pieces targeted at vertical market segments, creating client profiles, writing success stories and designing the creative elements and writing the content for marketing collateral.

# Gwendolyn L. Huntoon

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## Experience

September 1989 - Present

Pittsburgh Supercomputing Center / Carnegie Mellon University

### Director, Networking (June 2005 - Present)

- Responsible for the strategic and financial planning, funding and operations of the Networking Group.
- Director for the Three Rivers Optical Exchange (3ROX), including managing and operating a regional network aggregation point for high performance and commodity connectivity.

### Assistant Director, Networking (July 1999 - May 2005)

- Manage network staff for the production and research networks at the Pittsburgh Supercomputing Center.
- Director, NLANR Engineering Services. Lead Principle Investigator for three year, \$2.7M National Science Foundation funded project to provide advance network engineering services to Academic sites connected to Next Generation Internet backbones such as vBNS and Abilene.
- Manage, direct and support research in high performance networking services and technologies. Areas of focus include enhancements to TCP protocol, network measurement and network monitoring.

### Manager, Networking (January 1995 - June 1999)

- Responsible for strategic planning for all network activities ranging from project coordination and prioritization, budget planning and management, resource allocation, grant administration; and personnel recruitment.
- Expanded networking group from 5 network engineers funded internally to over 11 network engineers and support staff with external funding from a combination of NSF research grants and network partnerships.

### Coordinator Networking (August 1992 - December 1998)

- Responsible for coordinating all technical activities associated with PSC's internal and external network infrastructure.
- Technical Project Manager, Common Knowledge: Pittsburgh (CK:P), a \$2M NSF funded project for integrating network connectivity and user devices into the curriculum of the Pittsburgh Public School system.

### Acting Manager, Networking and Hardware (August 1991 - July 1992)

- Responsible for all activities associated with PSC's production network and hardware groups, including planning, acquisition and support for production, staff and office systems to supporting specific hardware development projects.

### Network Engineer (September 1989 - July 1991)

- Software support for all networking activities.
- Provided software development and project management for PSC's heterogeneous supercomputing environment.
- Software and system support for PSC's high speed experimental and production networks.

September 2005 - August 2009

National LambdaRail / Carnegie Mellon University

### Interim Chief Technology Officer (July 2009 - August 2009)

- Provide oversight on technology projects associated with National LambdaRail.

### Director of Operations, Interim Chief Technology Officer (July - August 2009)

- Responsible for the operations and technical strategy for National LambdaRail, a fiber-optic based national network.
- Technical oversight for all technical projects ranging from Layer1 optical based services up to strategic applications such as Telepresence.
- Provided managerial and technical oversight the installation, operations and support for a dense wave division multiplex (DWDM) optical network. Including the installation of the optical infrastructure along the southern path (2005) and the upgrade of the northern path (2008).

## Education

Northeastern University

### Master of Science, Electrical Engineering (1985)

- Concentration in Communications and Signal Processing

Bowdoin College

### Bachelor of Arts in Mathematics and History, Magna Cum Laude (1983)

- High Honors, History
- James Bowdoin Scholar

# Jeffrey C. Kuhns

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## Experience

October 2006 – Present

The Pennsylvania State University

### Associate Vice Provost, IT

- Developed 5 year IT strategic plan.
- Completed long term data center study and recommendations.
- Initiated IPv6 planning team.
- Vice-Chair, Educause Network Policy Council.

June 2002 – September 2006

The Pennsylvania State University

### Senior Director Consulting and Support Services

- Presented testimony to US Senate on net neutrality.
- Acquired private fiber connecting State College to Pittsburgh for campus and internet traffic.
- Created new organization to provide IT consulting and support service to the University community.
- Developed bulk buy for desktop computing saving \$1.7M.
- Negotiated unique software contract with Microsoft.

July 1990 – June 2002

The Pennsylvania State University

### Associate Senior Director, Office of Telecommunications

- Created a sustainable budget model for networking and network security.
- Developed a long range plan for University cellular service and campus cellular sites.
- Created student long distance program reducing student cost by 50%.

## Education

The Pennsylvania State University

### Masters in Telecommunications Policy (1996)

- Thesis studied the value of a university becoming a community telecommunications service provider.

Indiana University of Pennsylvania

### BS Business Management (1974)



# Michael H Lambert

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## Experience

July 2006-Present

Pittsburgh Supercomputing Center

### GigaPoP Coordinator and Principal Network Engineer

- Liaison and outreach to current and potential GigaPoP members
- Architectural responsibilities for 3ROX network
- Continuing engineering and operational responsibilities for PSC and 3ROX networks
- Participation in national networking meetings on behalf of 3ROX

April 1994-July 2006

Pittsburgh Supercomputing Center

### Network Engineer

- Engineering and operational responsibilities for PSC and 3ROX networks
- Co-chair, Internet2 IPv6 working group (1999-present)
- Member, Abilene (now Internet2) Technical Advisory Committee (2000-present)

December 1988-April 1994

Pittsburgh Supercomputing Center

### Scientific Specialist

- Responsible for escalated support of scientific applications software for PSC's user community
- Performed one of first application ports to Cray's T3D massively-parallel architecture

## Education

University of Pittsburgh

### Post-Doctoral Research Associate, Biophysics (1988)

- Area of research: Chaotic behavior in cellular calcium ion transport

Indiana University

### PhD, Theoretical Nuclear Physics (1988)

- Thesis: *A study of Gamow-Teller mixing: Coupling to  $\Delta(1232)$  and isobaric analogue resonances*

Wabash College

### AB, Mathematics and Physics (1980), Minor in German

- Graduated *Magna cum Laude*
- Recipient of Harold Q Fuller Prize in Physics

# Gregory D. Palmer

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## Experience

November 1999 – current

University of Pennsylvania

### MAGPI Executive Director

- Built a regional high performance network in PA, NJ, and DE for research and education with 600+ connections
- Built an optical network in support of Princeton University, NOAA and DOE/ESNet research facilities
- Produced and delivered 120 education and professional Development programs for K-20 institutions in 2008-09
- Chairman – Internet2 Emerging African Research & Education Networks Interest Group
- Board Member – PA Council for International Education
- Advisory Council – Asian Studies Collaborative

August 1998 – November 1999

Christian Dalloz, Inc., Paris, France

### Director of Global IT Operations

- Global infrastructure development for 42 sites worldwide
- SAP integration in Europe and the U.S.
- Distributed backbone built for 6 countries

March 1987 – August 1998

Drexel University

### Title: Director of Campus Computing

- Awarded VbNS grant from NSF
- Complete campus re-wiring to cat 5
- First wireless pilot program
- Retired mainframe Prime system for server farm

## Education

LaSalle University

### Bachelor of Science(1988), Minor in Operations Management

- Co-authored, Statistical Analysis of Small Business Behavior
- Cum Laude graduate
- All Night School

# Arthur C. Stephens

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## Experience

October 2008 to present

Pennsylvania State System of Higher Education

### Special Assistant to the Chancellor for Information Management and Strategy

- Responsible for establishing the information technology strategy for a 14 university system coordinating technology priorities across the universities. The strategy defines how to better serve Pennsylvania's students by applying technology to enhance learning, improve efficiency and align Pennsylvania graduates with key opportunities across the Commonwealth.
- Serving as the Program Manager for a project to implement student information systems across the 14 campuses.
- Coordinating emergency preparedness and COOP planning for the System. Responsible for establishing System Strategic Telecommunications strategy.

June 2005 – October 2008

Commonwealth of Pennsylvania, Office of the Governor

### Deputy Chief of Staff

- Served as a member of the Governor's senior staff focusing on public safety, technology, transportation and telecommunications.
- Facilitated telecommunications concepts including classrooms of the future and broadband outreach and aggregation.
- Acted as the chief liaison for the Governor to cabinet agencies including the State Police, the Department of Corrections, the Pennsylvania Emergency Management Agency, the Office of Homeland Security, the Pennsylvania National Guard, the Commission on Crime and Delinquency, the Board of Probation and Parole, PennDOT, and the Office of Administration on a variety of issues.
- Created the Public Safety Strategic Plan, the Homeland Security and Emergency Preparedness framework, the Public Safety Cabinet, and the Homeland Security Executive Cabinet.
- Re-established continuity of government and pandemic planning for all agencies under the Governor's jurisdiction.
- Participated in numerous emergency response activities including the 7/7/2005 London subway bombings, Hurricanes Katrina, Rita and Wilma, energy shortage concerns, the 2006 Pennsylvania floods, the Nickel Mines shootings, inhalation anthrax, and growing concerns for a potential pandemic resulting from avian influenza.

March 2003 – June 2005

Commonwealth of Pennsylvania

### Chief Information Officer

- Responsible for providing technology solutions and infrastructure to more than 40 state boards, commissions, agencies, and departments in hundreds of locations across Pennsylvania and the world, including a state-wide network connecting all state agencies and locations.
- Directly managed a staff of 300, indirectly managed a staff of approximately 2,000 employees and oversaw the budget which was \$110 million with overall IT spending in the Commonwealth near \$1 billion.
- Responsible for providing email, telecomm, security and data center services to all Commonwealth Departments, maintaining the State's web portal, the SAP system for HR, Payroll, Travel, Budget and Finance, the Pennsylvania Justice Network, and the Statewide 800 MHz Radio System. In addition, established and enforced technology policy.
- Accomplishments were based on four main priorities: 1) maintaining and improving the security of Commonwealth systems and networks 2) establishing a governance structure that minimizes agency barriers to allow IT solutions to be shared across government through communities of practice 3) ensuring IT solutions are prioritized to meet the most pressing needs of the business and 4) improving the provision of shared services to continue to drive down the costs of providing technology solutions while maintaining existing service levels.

July 1997 – March 2003

Deloitte Consulting

### Senior Manager and Principal

- Responsible for all aspects including sales, HR, public relations, community service, engagement mgmt, and project delivery.
- Performed engagements for the PA Departments of Welfare, Health, Labor & Industry, Insurance, Aging, the State Employee's Retirement System, the Public School Employee's Retirement System, the Commission on Crime and Delinquency, and the Department of Revenue.

July, 1987 – June, 1997

Andersen Consulting (now Accenture)

### Experienced Manager

## Education

Pennsylvania State University

Bachelor of Science in Finance (1987), Minor in Economics

# Bruce M. Taggart

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## Experience

July 2000 – Present

Lehigh University, Bethlehem, Pennsylvania

### Vice Provost, Library and Technology Services

- Responsible for the overall strategic direction, planning, and management of the campus libraries, faculty development, academic and research information technologies, administrative enterprise systems, and graduate level distance education programs. The organizational structure includes eight directors, a 175 FTE professional staff, and a \$23 million operating budget.
- Developed and published two long range plans entitled: "A Strategic Plan for Library and Technology Services, 2001–2005" and "A Strategic Plan for Library & Technology Services, 2006-2010".
- Developed 5-year \$50,000,000 Strategic Campus Network Plan to bring high-speed wireless and gigabit access to the desktop to support enhanced teaching, research, and campus communications.
- Lead seven year \$20 million architectural and construction planning process to renovate and technically transform the historic 1870 Linderman Library into a 21<sup>st</sup> century library, teaching, and learning space.
- Developed and implemented a \$2.8 million plan for expanding and enhancing campus networking and electronic classroom development including high-end multimedia capacity in 85% of all university teaching classrooms.
- Developed and implemented multi-year life cycle methodology for campus network, student computing labs, e-classrooms, enterprise systems, portal, library automation, and central servers.
- Facilitated the development for the first campus high performance computing (HPC) cluster and computer grid for research. Lehigh's current high performance grid includes 400 nodes.
- Developed and implemented co-location facility in central Computer Center to support campus-wide centralization of high performance computing clusters and decentralized high security need servers (HIPPA, FERPA, et al).

June 1994 – June 2000

Portland State University, Portland, Oregon

### Executive Director, Office of Information Technologies

- Responsible for the overall planning, management, and direction of campus academic and administrative computing, networking, telecommunications, and distance learning resources, classroom technology support, and faculty/staff technology development.
- Served on planning and management committee for the Network for Engineering and Research in Oregon (NERO) and Oregon Wide Area Education Network (OWEN).
- Served on executive planning committee which developed the conceptual framework for and later implemented the Portland Research & Education Network (PREN) and gigapop along with Oregon Health Sciences University and the University of Washington.
- Worked with faculty to develop grant proposals for the National Telecommunication & Information Administration (NTIA) and the Telecommunications & Information Infrastructure Assistance Program (TIIAP).
- Developed state-of-the-art 100 megabit campus instruction and research network.
- Proposed and designed the concept of constructing a new \$30,000,000 "Campus Technology Commons" to create a multi-discipline, collaborative, technology/library connected building for teaching and learning.
- Oregon Telecommunication Forum Council (1996-2000) – Appointed to Governor's Lifelong Learning and Education subcommittee tasked with developing state-wide recommendations for expanding access to lifelong education and training in Oregon.
- NorthWestNet, Inc. – Elected in the summer 1995 to NorthWestNet Board of Directors. NorthWestNet was one of the largest Internet providers in the Pacific Northwest started by the Northwest Academic Computing Consortium in the late 1980's.

January 1983 – June 1994

University of Connecticut, Storrs, Connecticut

### Director of Planning and Administration, University Computer Center

University of Connecticut, Storrs, Connecticut

Ph.D. 1993, Higher Education Administration and Public Policy

University of Connecticut, Storrs, Connecticut

Master of Arts 1981, Public Policy

Nichols College, Dudley, Massachusetts

Bachelor of Science 1978, Public Administration

## Education

**General Overall Budget For Joint Applications Only:** Please complete the following table only if you are submitting a joint BIP/BTOP Application. Please use the grid on Project Budget Tab in the online system for the BIP budget and then complete the table below for BTOP.

This attachment was required as an upload by the online system even though this is NOT a Joint Application						
Equipment Category	Grant Request	Equity	Debt	Bonds	Other Funding	Total
Network & Access Equipment (switching, routing, transport, access)	4,240,000	2,039,000				
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)	94,767,078	25,316,770				
Buildings and Land – (new construction, improvements, renovations, lease)		48,000				
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)						
Billing and Operational Support Systems (IT systems, software, etc.)		79,960				
Operating Equipment (vehicles, office equipment, other)		6,000				
Engineering/ Professional Services (engineering design, project management, consulting, etc.)	220,000	1,094,223				
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)	433,600	633,400				
Site Preparation						
Other						
<b>Total Broadband System</b>	<b>99,660,678</b>	<b>29,217,353</b>				

Attachment E- Project Plan (Key Phases and Milestones to Demonstrate Degree of Completion)

Time Proposed	Quarter	List All Relevant Milestones	Support for Reasonableness/Data Points
Year 0		* Sign Letter of Intent with Underlying Fiber Provider • Confirm the Scope of Work	
Year 1	Qtr. 1	* Deliver 10% of Total Route Miles	* Fibertech can leverage existing assets and deliver the On-Net route miles quickly. A significant amount of the work associated with this project (i.e. applications, design, etc) will be in Q1/Q2 of the first year.  * For each site delivered, Fibertech will test the fiber, ensure that it is within specifications, and will tie any backbone fibers into our Network Operations Center (NOC) for on-going proactive maintenance
	Qtr. 2	* Deliver 20% of Total Route Miles	
	Qtr. 3	* Deliver 30% of Total Route Miles	
	Qtr. 4	* Deliver 50% of Total Route Miles	
Year 2	Qtr. 1	* Deliver 70% of Total Route Miles	
	Qtr. 2	* Deliver 80% of Total Route Miles	
	Qtr. 3	* Deliver 90% of Total Route Miles	
	Qtr. 4	* Deliver 100% of Total Route Miles	
Year 3	Qtr. 1		
	Qtr. 2		
	Qtr. 3		
	Qtr. 4		

The table below is an example of a Project Plan, with the various tasks associated with the project. Given the size and scope of this project, the timeframe and deliverables will differ by location. However, Fibertech agrees to deliver sites in accordance to the "Project Plan (Key Phases and Milestones to Demonstrate Degree of Completion)" table attached.



**Fibertech Networks Project Plan - EXAMPLE**

<b>Project Description:</b>	Provide Dark Fibers in CT Under Broadband Stimulus Initiative					
<b>Date:</b>	August 14, 2009					
<b>Market:</b>	Pennsylvania			<b>Projected Delivery Date:</b>		No Later Than Q4, 2010
<b>Customer:</b>				<b>Demark Points:</b>		
<b>Sales:</b>				<b>Fiber Count:</b>		
<b>Engineer:</b>				<b>Contract Executed:</b>		
<b>Fibertech Job #:</b>						
	<b>Time Required</b>	<b>Project Plan Start Date</b>	<b>Project Plan Scheduled Completion Date</b>	<b>Actual Start Date</b>	<b>Actual Completion</b>	<b>Responsible Party</b>
<b>Route Design/Strand Mapping</b>	30 days	Year 1, Q1	Year 1, Q1			FT
<b>Easements to Buildings:</b>	60 days	Year 1, Q1	Year 2, Q4			Customer
<b>Permits (State,County,City)</b>	part of app process					FT
<b>Applications: Pole &amp; Conduit</b>	5 days	Year 1, Q1	Year 1, Q1			FT *14 aerial apps to Verizon,



						PSE&G, CATV* And 3 Conduit apps to Vzn
<b>Surveys - Engineering</b>	30 days	Year 1, Q1	Year 1, Q2			utilities
<b>Make Ready Estimates*</b>	15 days	Year 1, Q1	Year 1, Q2			utilities
<b>- Review &amp; Payment of MR</b>	3 days	Year 1, Q1	Year 1, Q2			FT
<b>Make Ready Work *</b>	90-120 days	Year 1, Q1	Year 2, Q4			utilities
<b>Fibertech Mobilization &amp; Construction** which includes:</b>	21 days	Year 1, Q1	Year 2, Q4			FT
^ Lateral Fiber Construction	distance dependent					FT
-Aerial						
-Underground						
^Splice Plan Design**	1-7 days	Year 1, Q1	Year 2, Q4			FT
^ Outside Splicing	approx 10 days	Year 1, Q1	Year 2, Q4			FT
<b>Testing &amp; Trouble-shooting</b>	5 days	Year 1, Q1	Year 2, Q4			
<b>Notice of Completion</b>	1 day	Year 1, Q1	Year 2, Q4			FT
<b>Customer Acceptance</b>	1-15 days	Year 1, Q1	Year 2, Q4			customer

Notes:

Fibertech will require a customer letter providing and authorizing building access and easement ROWs

The dates shown are not guaranteed. Due dates from the utilities may impact the make-ready process

The utilities are allowed a 45 day interval from Application to submission of the Make-Ready bill to Fibertech

The utilities are allowed a 90-120 day interval from receipt of Make-Ready payment to completion of the Make-Ready work. Maximum interval is typical for pole replacement work.

\*As Estimates are received and paid, utility make-ready work is begun

\*\* The splice plan is designed while construction is in progress

\*\* Construction can begin as utility make-ready work is completed and licensed

**Build-Out Timeline**

	Name:												
	YEAR 0	YEAR 1				YEAR 2				YEAR 3			
		Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Infrastructure Funds Advance (estimate)													
Percentage of Total Funds		15%	20%	15%	10%	10%	10%	10%	10%				
Entities Passed & %													
Household													
Percentage of Total Households													
Businesses													
Percentage of Total Businesses													
Strategic Institutions (Comm. Anchor, Public Safety, etc)													
Percentage of Total Institutions		10	9	9	8	5	5	5	5				