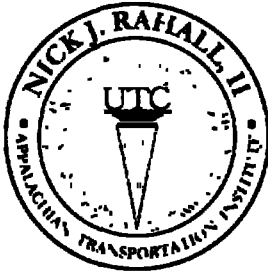


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Nick J. Rahall, II Appalachian Transportation Institute
Building Jobs Through Transportation

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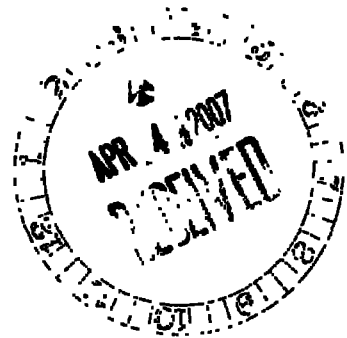
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April 3, 2007

Mr. Joseph Dettmar, Deputy Director
Surface Transportation Board
395 E Street, S.W.
Washington, DV 20024



Dear Mr. Dettmar,

Please accept the enclosed written version of the oral testimony to be given at the April 11th proceedings concerning *Rail Capacity and Infrastructure Requirements* (Docket Number: EP_671_0).

I thank you for your time and efforts in this matter. Please do not hesitate to contact me if you have questions or concerns.

Sincerely,

Robert H. Plymale, Director
Nick J. Rahall, II Appalachian Transportation
Institute at Marshall University

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"I, Kimberley S. Baker, C.P.M., declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this pleading. Executed on April 3, 2007."

Kimberley S. Baker C.P.M.

The Nick J. Rahall, II Appalachian Transportation Institute (RTI)



The Nick J. Rahall, II Appalachian Transportation Institute (RTI), located in Huntington, West Virginia, was established at Marshall University through a 12 million dollar grant by the US Congress in the Transportation Equity Act for the 21st Century on June 8, 1998, largely through the efforts of WV Congressman Nick J. Rahall, II. This grant is funded through the Research and Innovative Technology Administration (RITA), formerly, Research and Special Program Administration (RSPA) of the United States Department of Transportation as a University Transportation Center (UTC). Through its designation as a University Transportation Center (UTC), RTI is empowered to focus on a comprehensive, broadly-based, multidisciplinary research, educational and technology transfer program on the region's transportation and transportation-related economic development challenges.

RTI is just one of 10 nationally recognized University Transportation Centers and is the only center with a rail component that receives Federal Railroad Administration funding. These activities, combined with our National Maritime Enhancement Institute, make RTI a truly multi-modal research center covering the full realm of transportation endeavors. RTI and Marshall University played a central role in helping to develop the proposed Heartland Corridor project, and in the process set a prime example of public/private partnership and coordination.

RTI Research/Education Faculty and Professional Associates include members of:

- Marshall University College of Business
- Marshall University College of Information Technology and Engineering
- Marshall University College of Science
- Marshall Community and Technical College
- The Joan C. Edwards School of Medicine
- The Environmental and Geotechnical Center

Socio-Economical/Political

- Commodity Flows and Transportation Infrastructure Assessments
- Transportation Planning, Financing and Public Policies
- Rural, Intermodal/Public Transportation Issues
- Land Use Planning
- Tourism and Recreational Travel
- Rural Transportation Safety

Geotechnical/Environmental

- Wetland Mitigation
- Endangered Species Assessments
- Rock Cut/Slope Stability
- Inventories and Health Risk

- Assessments from Abandoned Tires
- Tunnel Expansions
- Rail Track and Road Bed Stability

Technology/Transportation

- Geographical Information Systems/
- Mapping Technologies
- Automatic Vehicle Tracking in Rural Settings
- Integration of Remote Sensing Technologies
- Optimizing Recoverable Materials in Transportation Components
- Intelligent Highway Signage with Improved Visibility and Energy Savings

Transportation Research Initiation

- Small start-up grants within the areas above

Representative Sources of RTI Funding Since Grant Inception

- Appalachian Regional Commission - (All 13 State Dept. of Trans.)
- Claude Worthington Benedum Foundation
- British Petroleum
- Business & Industrial Development Corporation
- CSX
- Cabell County Schools
- Federal Railroad Administration
- Hatfield-McCoy Regional Recreation Authority
- Huntington Area Development Council
- KYOVA interstate Planning Commission
- Lincoln County Economic Development
- Mid-Ohio Valley Regional Planning and Development Council
- Norfolk Southern
- Ohio Department of Transportation
- Ohio Rail Development Commission
- Ohio River Valley Water Sanitation Commission (ORSANCO)
- Operation Respond
- Putnam County Development Authority
- Raleigh County
- St. Mary's Hospital
- Tennessee Department of Transportation
- Tennessee Valley Authority
- United States Department of Energy
- Wayne County Commission
- West Virginia Bureau of Employment Programs
- West Virginia Department of Natural Resources
- West Virginia Development Office
- West Virginia Disaster Recovery Board

- **West Virginia Division of Highways**
- **West Virginia Governor's Office**
- **West Virginia Housing Development Fund**
- **West Virginia Public Port Authority**
- **West Virginia Public Service Corporation**
- **West Virginia Statewide Addressing and Mapping Board**
- **West Virginia Trails Coalition**

Statement of

ROBERT H. PLYMALE

Director, Nick J. Rahall, II Appalachian Transportation Institute (RTI)¹
Marshall University
Huntington, West Virginia

In the matter of Surface Transportation Board Ex Parte No. 671

April 11, 2007

1. Introductory Remarks

During the 1970's and 1980's a remarkable generation of railroaders and federal policy-makers worked together to avert a national railroad industry collapse by recasting the ways that rail carriers produce, manage, market, and price transport services. This unarguable success was the direct result of public policy reforms and railroad industry response.²

Today, the nation's transportation policy-makers and freight providers (across all modes) face a set of immediately unfolding challenges that may well be as daunting as those faced by the railroad industry in the closing decades of the 20th century. And, once again, success in meeting these challenges depends on the combined effects of forward-looking public policies and nimble, ever-aggressive, private transportation providers. The public policies governing freight transport over the coming decades must simultaneously protect competition while encouraging innovation and substantial investment by both the public and private sectors. Moreover, while local and state jurisdictions may expect to play an essential role in the formulation and execution of these

¹ A description of the Rahall Transportation Institute and relevant activities is provided here as Appendix A.

² Regulatory Reform began in the 1970's with the enactment of the Railroad Revitalization and Regulatory Reform (4R) Act and culminated, from a statutory perspective, with the passage of the Staggers Rail Act in 1980. While these statutory reforms were essential, the Surface Transportation Board and its predecessor, the Interstate Commerce Commission, have played a pivotal role in implementing and protecting regulatory reforms.

policies, the spatial nature of freight transportation dictates that the necessary policies must be enacted and implemented by the federal government. The remarks offered in the balance of the current document reflect the Rahall Transportation Institute's attempt to provide some amount of guidance as the renewed efforts to enhance railroad capacity continue, as well as our ongoing pledge to assist both the public and private sectors as they seek out additional ways to efficiently meet growing freight transportation demands.

2. History and Current Context

The 20th century saw the nation's freight transportation networks evolve to the point of apparent maturity. The extent of railroad trackage, as well as the rail industry's transportation dominance, peaked early in the century. Soon, however, motor carriage began to emerge as a powerful new transport asset. Over the first half of the century, the nation's roadway system was expanded and this system was largely completed with the development of the Interstate highway system in the decades following the Second World War. During the same time period, albeit with less visibility, the locks, dams, and other physical facilities that support commercial navigation were added, completing work that began in the mid 1930's. Indeed the completion of these networks and the transport cost reductions that resulted may be credited with fostering the truly *national* US economy that erased many of the regional boundaries during the latter half of the century.

For most of the 20th century, needs for new incremental freight transportation capacity were routinely met by placing bigger and faster vehicles on expanded and more robust networks. Toward the end of the century, however, the cost of further network expansions began to escalate. In particular, the cost of additional highway lane-miles has soared as environmental

constraints and land use issues drive construction costs ever-higher. Fortunately, as noted, policy-induced productivity increases in both the trucking and railroad industry have allowed freight volumes and associated ton-miles to steadily increase over networks that are now much more fixed in scale. However, The Staggers Rail Act (see footnote 2) and similar motor carrier deregulation are now more than 20 years old, therefore most of the attendant efficiency gains have now been realized. Thus, on a forward-looking basis further freight capacity expansions will likely require new approaches.³

This realization comes at a time when the demands for freight transportation are clearly expanding. As of the fall of 2006, the US population is greater than 300 million up nearly 7 percent from the 2000 census value. Moreover, the impact of growing populations is compounded by the growth in international trade as a source of commerce.⁴ This places further demands on capacity and infrastructure as international movements tend to have longer domestic transit distances than their US-produced counterparts.

More transportation over existing networks means more congestion. Moreover, the increased use of international container shipping makes congestion a particularly vexing issue near deep draft ports and in some critical inland intermodal corridors. In the case of highways, US Department of Transportation (USDOT) projections for highway volumes routinely produce average vehicle volume-to-capacity ratios that exceed one for at least some segments in nearly

³ Nearly since the implementation of Staggers, there have been calls for an, at least, partial reversal of the regulatory freedoms it provided. However, while individual shippers may not like the outcomes of this statute, there is little question that it is responsible for saving the railroad industry from what appeared to be an unavoidable crisis. Moreover, while specific freight charges may sometimes be significantly greater than associated costs, there is no evidence, whatsoever, that any Class I railroad is earning supra-normal profits. Consequently, during a time when capacity is at issue, any modification to existing economic regulations is probably inappropriate even as a topic of discussion.

⁴ In 1975 less than 10 percent of US Gross Domestic Product (GDP) was tied to international trade. Today, nearly 30 percent of all US transactions (measured in dollars) involve an international trading partner. Indeed, by 2020 estimates suggest that as much as half of US GDP will be directly tied to global markets.

every urban setting and in many rural settings by 2020.⁵ These are *average* volumes that do not account for times of peak congestion. Vehicle volume-to-capacity ratios exceeding one indicate areas of severe congestion that reduce the efficiency of the involved transportation systems.

The same capacity concerns and congestion worries are also evident in rail transport. Rail ton-miles continue to grow steadily – up well over 50 percent since 1980 – and intermodal containers and trailers represent a growing share of this traffic.⁶ This is particularly problematic given that mixing the much faster intermodal trains with the slower bulk freight train movements tends to devour network capacity at an alarming rate.⁷

Finally, congestion and the need for additional throughput (or the amount of shipments that can pass through a port or transportation segment in a given period of time) is a huge concern for those who rely on the nation's deep draft sea ports. Estimates revealed at a Maritime Administration conference in the summer of 2006 suggest that the United States will need to add total port capacity roughly equal to that of the Port of Oakland each year (approximately two million Twenty-foot Equivalent Units or TEU's) for the foreseeable future if the currently observed growth in international containers is to continue at its current rate. Again, given land-use and environmental concerns, this need for new port capacity must be viewed as a monumental challenge.

It is important to recognize that the vast majority of traffic forecasts, regardless of mode or modal combination, are "unconstrained" in nature. That is to say that the effects of additional

⁵ This USDOT observation is based on information from the Freight Analysis Framework (FAF²) data. However, the same (or even more disturbing) conclusions are reached by examining the data collected by most state DOTs.

⁶ The Association of American Railroads estimates that total 2006 ton-miles grew by 2.5 percent. During the same time frame, container traffic grew by nearly 8 percent. In fact, in 2006, intermodal (both container and trailer) movements surpassed all other individual commodities as a revenue source for Class I carriers.

⁷ As an example, Burlington Northern – Santa Fe experienced significant congestion delays last year when it tried to increase the train speed on a single intermodal train between Los Angeles and Chicago.

congestion and related increases in freight costs are not allowed to temper the forecasted traffic volumes. This is, of course, unrealistic. Instead, as network components see traffic that is modestly in excess of design capacity, costs will increase rapidly so that many otherwise viable trips (both freight and passenger) will simply not take place. Thus, much of the most severe forecasted congestion will never be observed, but only because more modest congestion levels will “constrain” or choke-off further traffic increases.

With these types of issues in mind the Executive Committee of the Transportation Research Board (TRB) identified congestion, emergencies, energy and environment, equity, finance, human and intellectual capital, infrastructure, institutions and safety as the critical transportation issues facing the United States in the early portion of the 21st century⁸.

3. Private Investment in Capacity

There are essentially three types of investments that are capable of enhancing transportation capacity. First, it is sometimes still possible to increase capacity by modifying the line-haul and / or terminal facilities that comprise the network in question. While our ability to produce new congestion-averting capacity through construction is less now than it was a century ago, it is still possible and necessary. In short, some issues can still be remedied by pouring concrete and laying rail. In the case of motor carriage, trucking firms very rarely make such investments outside of terminal areas. Rail carriers, however, routinely make infrastructure investments, spending hundreds of millions each on an annual basis to upgrade line-haul trackage and signal systems.⁹

⁸ See *Critical Issues in Transportation* – Transportation research Board of the National Academies.

⁹ In a recent example, Norfolk Southern has agreed to invest approximately \$200 million in trackage owned by Kansas City Southern, but over which the two share use in order to improve capacity over the routing.

The second avenue of capacity-enhancing investment involves the purchase and introduction of new vehicles – trucks and trailers in the case of motor carriage, locomotives and freight cars in the case of railroads, and barges and tow boats in the case of commercial navigation. Equipment expenditures can represent a substantial portion of a carrier's annual investments regardless of mode. Nonetheless private equipment investment, while generally sufficient, is not uniformly consistent with public aims. For example, efforts to significantly increase ethanol production and consumption may be measurably hindered by the unavailability of tank car fleets. Additionally, uncertainty regarding the eventual scale and longevity of ethanol production is, so far, limiting investors' enthusiasm for making new tank car purchases.

Finally, private transportation providers routinely invest in ways designed to make existing networks and vehicles operate more efficiently. Such investments may involve hardware and software for better vehicle tracking, routing, or fuel consumption. These types of investment may also include purchasing improved "human capital" through the better education and training of employees.

4. The Need for Public Investment

The economics surrounding public investment in transportation capacity can become very complex, but generally center around the private sector's unwillingness or inability to make investments on a scale that is consistent with the public's well-being. For example, public dollars are used to make most highway investments, because in most settings, the private sector would fail to make them even though these roads generate tremendous public benefits. This is because it would be very difficult, in most cases, for a private owner to compel users to pay for

highway usage. This is less of a problem for the public sector which compels users to pay through fuel taxes and user fees.

There are many other circumstances that also point to a need for public investment in transportation infrastructure. One of the most common is when the presence and use of the infrastructure in question generates benefits for non-users.¹⁰ For example, if an improved rail line attracts traffic that had moved by truck, highway capacity is freed and the remaining highway users benefit from less congestion. These benefits to the remaining users are very real and, presumably, these users would be willing to pay for them. Once again, the rail carrier has no means of charging highway users for the reduced congestion and these resulting external benefits do not figure in the railroads' investment decision.

Finally, there are many cases where the private sector desires to produce one set of services and the public sector wishes to produce a distinctly different set of services, but where the cost of each can be lowered if they are produced together. This is precisely the case when transit providers and rail freight carriers jointly make infrastructure investments that allow each to function more efficiently.

As is made obvious by the highway example, public investment in transportation infrastructure is routine for most freight modes. However, because railroad rights of way are privately owned, public sector investment in railroad properties has historically been rarely observed. On the public side, critics of such investments have routinely argued that using public funds to enhance privately owned facilities is inappropriate. For their part, the railroads have been reluctant to seek such investments, fearing they would be asked to cede some degree of operational or financial control to the public entity that provides the funding.

¹⁰ Economists refer to such benefits as "positive externalities" or "external" benefits.

Fortunately, over the past decade, public sector critics have increasingly realized that there are legitimate reasons for the public to invest in railroad infrastructure and effective ways to ensure that these investments yield the public benefits for which they are intended. Similarly, the Class I railroads have come to realize that it is often possible to accommodate a public need without sacrificing operating efficiency or financial performance.

Ultimately, when we consider the emerging freight capacity crisis, the scope and expense of the highway construction that will be necessary under any case, and the progress that has been made in forging effective partnerships between public entities and rail carriers, it would seem that policies that further enhance rail's role as a freight solution by increasing both public and private rail infrastructure investment are very much desirable.

5. The Federal Role

There are sometimes rail infrastructure projects with operational and economic impacts that are highly localized. In such cases, the responsibility for design, execution, and funding may fall on the carrier, community, and regional governments. However, the network nature of railroad service production suggest that most projects of any real magnitude will affect a wide array of freight purchasers and providers across a geographic span that is far greater than the specific area in which physical construction takes place.

For example, The Rahall Transportation Institute was instrumental in the study process that ultimately resulted in the *Heartland Corridor Initiative*. This initiative directly involves the states of Virginia, West Virginia, Ohio, and Kentucky and will result in substantial improvements in intermodal rail service between mid-Ohio and the ports at Norfolk. However, within the study process, it became immediately clear that intermodal users throughout the

Eastern Seaboard and throughout the Midwest will benefit from the transportation efficiencies that *Heartland* will generate.

When the benefits of a potential project become dispersed over such a wide geographic area, only the federal government can ensure that the project is evaluated properly within the context of national transportation goals and only the federal government can assure that the full range of those receiving benefits are asked to help with funding.¹¹ Thus, when it comes to overall policy and leadership, it is critical that federal policy-makers step to the forefront in encouraging additional investments in railroad capacity. There are, perhaps, three ways in which this can happen.

First, and perhaps most importantly, the federal government can provide the planning context and analytical criteria for project evaluation. In this regard, the “Projects of Regional Significance” program area contained within Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) represents a nascent effort. As future federal surface transportation legislation is developed however, we would hope that similar provisions will contain far more guidance and additional mechanisms for coordinating the consideration of geographically disparate, but functionally related potential projects. In this way, these potential projects could be evaluated simultaneously against a set of nationally determined freight transportation objectives.

Second, federal policy-makers should develop a set of criteria for allocating funding responsibilities among various project participants. These criteria should fairly balance state and local public sector interests, private sector interests, and the more broadly defined public sector interests at the multi-state, or even national level. If done properly, it is virtually certain that the

¹¹ Another strong example is the CREATE initiative that seeks to mitigate numerous problems in the Chicago area. To suggest that it is only Chicagoans that will benefit is illogical, given the large percentage of national rail traffic that passes through the Chicago gateway.

resulting criteria would, in most cases, point to a federal funding responsibility. Consequently, federal policy-makers should also develop a stable and adequate ongoing source for funding the federal share of projects.

Finally, the federal government, through the Federal Railroad Administration (FRA), is currently engaged in guiding the scientific research that will help define the future technologies that must be available to glean additional railroad capacity from existing network components. To the extent that it is fiscally possible, this role should be expanded. Doing so will help ensure that the most efficient new technologies are available sooner rather than later and at prices that allow for more rapid implementation.¹²

6. Higher Education's Role

If The Rahall Transportation Institute's experiences as a University Transportation Center are common to other universities, then there are clearly at least three important roles for these universities within the process of guiding and executing public investment in transportation.¹³ First, universities can help provide the hard scientific research mentioned above. Second, universities can serve as a trusted and reliable source for the planning and policy research that is necessary to validate proposed public investments. These investments can include but are not limited to new and expansions in infrastructure, new facilities, systems and software. Finally, universities can serve as a valuable resource in the creation of new human capital through training and education.

¹² Once again, private markets will accomplish this to some degree, but given that there are public benefits that extend well beyond the rail carriers and their customers, public sector investment for the same purpose is justified.

¹³ The UTC program is currently administered by the USDOT Research and Innovative Technology Administration (RITA). There are several dozen UTC's in the current program authorized by SAFETEA-LU with various funding levels at each UTC. Each UTC establishes individual transportation: research, education and technology transfer programs through a USDOT approved strategic plan.

As an example of the first role, The Rahall Transportation Institute has worked closely with the FRA to develop non-invasive equipment for examining the condition of railroad track ballast and sub-ballast through the use of ground penetrating radar (GPR). This same work has also brought numerous advances in the use of GPS as a method to substantially reduce surveying and mapping costs. To date, the on-track GPS equipment and associated methodologies have been tested and, to some degree, adopted by Norfolk Southern, CSX Transportation and Burlington Northern Santa Fe (BNSF).

Regarding the second potential university role, state universities, in particular, provide a valuable means of organizing varied public and private interests into a cohesive study effort. As noted above, The Rahall Transportation Institute (and, more broadly, Marshall University) played a pivotal role in the performance of the analysis that ultimately lead to the *Heartland* project. The University was a central location that all participants could approach with inputs and turn to for updates. It was also, generally, a known and trusted entity, having already established relationships with Norfolk Southern, CSX, the Appalachian Regional Commission, and the various state Departments of Transportation. Marshall University was also able to provide the faculty resources in civil engineering, geology, economics, and planning that were necessary to provide a credible evaluation of the proposed project.

Finally, universities can readily contribute to the effectiveness of investments in human capital and this can be done in many different ways. For example, The Rahall Transportation Institute is actively involved in developing the pedagogical tools necessary to expedite the training of freight train crews (and also deckhands for barge transport). At the same time the Institute has provided resources to Marshall University's College of Business in support of the development of an MBA track in transportation management.

7. Concluding Remarks

For the supply-chain managers and railroad operating personnel who must actually secure and produce efficient and affordable rail or intermodal transportation on a day-to-day basis, there is much difficulty in dealing with the increasing congestion and resultant increased costs; they are largely powerless to affect the unfolding freight transport environment in which they work. We as industry executives, policy-makers, or academics are equally challenged, but far more enabled to undertake the actions that will assure freight mobility in the US over the coming decades.

The steps are clear: they require fair, efficient investment in new transportation capacity by both railroad carriers and the public sector and the investment process must be informed by an academic community that is committed to sharing both information and responsibility for the success or failure of these efforts. As an essential part of the policy-making / implementation process, the Surface Transportation Board is also bound (by statute and by professional commitment) to play a central role in this process.

Re-enforcing regulatory reform efforts such as The Staggers Rail Act will play an important role in the success or failure of state and local policy makers to adapt to capacity and infrastructure demands in the coming decades. A well-defined Federal policy will allow them to make decisions affecting all transportation systems within a guided, well-planned overarching scheme designed to achieve the same long term goals. An illustration of these policies can be seen in 2007 West Virginia Senate Bill 569 - Creating Special Railroad and Intermodal Enhancement Fund, the specific purpose of which is to establish a fund designed to finance the construction, reconstruction, maintenance and repair of railways, the construction of railway

related structures and payment of principal and interest on state bonds issued for railway purposes, as approved by the West Virginia Public Port Authority. These types of state policies mirror and enhance existing federal policies. The Rahall Transportation Institute aims to provide the assistance and guidance in facilitating the cooperation and activities of private shippers, federal and state policy makers, and public institutions.

The coming decades will yield ample evidence of our successes and our shortcomings. For only the briefest of moments, however, we should perhaps look backwards, recalling the young men and women who a generation ago took a railroad industry that was as proud as it was stricken and transformed it into a remarkable national asset. We can only hope that a generation from now, the policy-makers and railroaders of the mid-21st century can judge us as kindly.

Robert H. "Bob" Plymale

- Director, of the Nick J. Rahall, II Appalachian Transportation Institute at Marshall University – 2001 to present.

State and National Legislative experience

State

- Serving 4th term in the West Virginia State Senate (4-year terms)
- Chairman of the Senate Education Committee
- Member of 12 member (6 State Senate, 6 House of Delegates) Budget Conference for 11 years developing budgets of Transportation and Education
- Chairman of the Senate Committee on Transportation
- Chairman of the Senate Committee on Pensions
- Chair of the Select Committee on the Public Employees Insurance Agency (PEIA)
- Co-Chairman of the Forest Management Review Commission
- Member of the Coal Truck Overweight Task Force, 2002 – Legislation passed

National

- In 2003, Senator Plymale was appointed to the Southern Regional Education Board's Board of Control by Governor Bob Wise. He was reappointed to the SREB in 2006 by Governor Joe Manchin. He serves on the executive committee
- In 2004-05, member of the National Conference of State Legislatures (NCSL) National Task Force on "No Child Left Behind"
- Served as Chair of the National Conference of State Legislatures, (NCSL) Education Committee, 2005-2006
- Member of the National Conference of State Legislatures (NCSL) Blue Ribbon Commission on Higher Education, 2005-2006

He has also received a Distinguished Service Award from the West Virginia Athletic Directors Association (2000) and the Distinguished Service to the Community Award from Marshall University (2005). In 2004, he received a Presidential Citation from Glenville State College and the Michael Pretera Award of Excellence in recognition of contributions made in improving the lives of those with behavioral health issues.