



The Center for Regional Analysis  
School of Public Policy  
George Mason University  
4400 University Drive, MailStop 3C6  
Fairfax, VA 22030-4444

November 15, 2010

Virginia Coal and Energy Commission  
c/o Ellen Porter, Division of Legislative Services  
910 Capitol Street, 2<sup>nd</sup> Floor  
Richmond, VA 23219

Re: RFP – Socioeconomic Study of Impact of Uranium Mining

Dear Sirs:

We are pleased to submit our proposal in response to the RFP regarding the socioeconomic impacts of uranium mining. We believe we are well qualified to perform this work, and our qualifications, experience, and approach follows in accordance with the items listed in the RFP.

While developing our proposal, we have reviewed available material about the other studies also underway by NRC and NAS. Some of the specifics regarding deliverables and schedules from those studies are not clear enough in some cases for us to be more specific about the tasks and timing that need to be done for the socioeconomic study. We have also learned that RTI International is being retained by the Danville Regional Foundation to undertake a very similar scope of work and time frame and with considerably greater resources.

Consequently, we feel that our proposal must be contingent on making sure that the research being done in the other studies and the RTI project can be coordinated with data needs and the scope of this project. Our purpose is to conduct the needed research within the bounds of available funding that provide additional and objective information to the Commission for its later deliberations. Assuming this coordination is feasible and that we would be selected for the project, we would add a first task of the study to be a collaborative effort between Commission representatives and us to refine and adjust the scope of work to coordinate all project schedules and to avoid duplicative research.

Again, we are pleased to submit this proposal and we will appreciate your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stephen S. Fuller', is written over the typed name.

Stephen S. Fuller, PhD,  
University Professor and Dwight Schar Faculty Chair, and,  
Director, Center for Regional Analysis, School of Public Policy  
George Mason University

***Proposal for  
Socioeconomic Study of Impact of Uranium Mining  
By  
George Mason University  
School of Public Policy  
Center for Regional Analysis***

**i) Contact Information**

Principal Investigator

Stephen S. Fuller, PhD,  
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Project Manager

John McClain, AICP

Senior Fellow and Deputy Director, Center for Regional Analysis, School of Public  
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**ii) Organization Information and Experience**

The Center for Regional Analysis is completing its nineteenth year of operation. During this period, under the leadership of Professor Roger Stough for its first ten years and Stephen S. Fuller for the past six years, the Center's principal mission has remained the same; that is, to provide research and analytical services to local government and businesses focusing on economic, demographic, housing and fiscal trends and forecasts. This research has been focused on the Washington metropolitan area, the District of Columbia, Maryland, and the Commonwealth of Virginia.



In the execution of this mission, the Center's staff conducts regular research on the performance of the Washington area economy (the Washington Economic Index, a monthly report, began its 20<sup>th</sup> year of publication in 2010, issues regular reports on the region's economy, housing, and demographic conditions (these are posted on the Center's website ([policy-cra.gmu.edu](http://policy-cra.gmu.edu)), participates in local meetings and conferences sponsored by governments, non-profit organizations, chambers of commerce and like organizations (CRA staff spoke at more than 100 such programs in 2009), responds to daily email and telephone inquiries by the media, business persons, and citizens (these contacts are too numerous to count but each year measure in the thousands) and mentor and support students in SPP and throughout the university interested in the range of the Center's research and data bases.

The Center's clients extend to all sub-state portions of the Washington metropolitan area and include: local governments, regional organizations, associations and non-profits, corporations and local businesses, and the general public

The Annual Regional Forecasting Conference has been held 17 times and its 20<sup>th</sup> annual edition is scheduled for January 15, 2011. Cardinal Bank has sponsored the Conference since 2004 and the Bank will again sponsor the 2011 Conference. This Conference has become the reference point for all subsequent forecasts for the Washington area economy.

The Center produces annual forecasts for the Gross Regional Product of the Washington MSA and for its sub-state portions. It also develops five-year GCP and employment forecasts for Fairfax County that the Department of Management and Budget use in its budget forecasting. As part of the Center's forecast program, it also prepares employment forecasts for the Washington region as well as housing forecasts for use by Washington Gas in its long-term capital requirements planning.

One area of research that has distinguished the Center is its monitoring of federal spending in the Washington region with particular emphasis on procurement contracting. Annual reports documenting the nature of federal procurement contracting have been prepared and issued by the Center each year since its establishment

Research Services provided by the Center include:

- Leading and Coincident Indicators
- Economic Analyses
- Market Analyses
- Fiscal Analyses
- Demographic Analyses

Economic and Demographic Forecasts  
Survey Research  
Transportation Analyses

In addition to the Center's annual conference every January on the outlook and forecast for the economy of the National Capital region, the Center holds other sessions during the year as may be needed to present specific studies and analyses of changing conditions. The staff of The Center is available for conference and seminar presentations and for conducting special studies for governments, businesses, and organizations. The Center maintains a comprehensive information base about the National Capital region and the states of Maryland, Virginia, and the District of Columbia.

The Center's principal staff has undertaken more research on the demographic, economic and fiscal conditions in the Washington region and written and published more papers and reports on these topics and their futures than anyone else and has more knowledge on these subjects as they relate to the broader Washington region than any other source.

Through their work with every jurisdiction in the greater Washington metropolitan area over the course of more than 35 years of experience, each of the Center's principal researchers -- Dr. Fuller and Mr. McClain -- have developed a unique understanding of the region's institutional framework and economic foundations. The Center's principals have extensive experience at all levels of government, have provided direct professional and research services to the widest array of public, non-government and private clients, and have participated directly in the formulation of key public policies at the state, metropolitan, and local levels in the Washington region, nationally, and internationally.

Dr. Fuller serves as the Center's Director and holds the Schar Faculty Chair and is a University Professor. He has actively conducted research on the region's dynamic growth and development since 1970 and written more than 500 articles, papers and reports on the Washington area's economic and fiscal trends and conditions. He has written a monthly report on the Washington economy each month since February 1991. In recognition of his knowledge about the region's economy, he was appointed by three Virginia governors to serve on the Governor's Advisory Board of Economists. He also has served on the Maryland Board of Revenue Estimates Business Advisory Council since 1997 and the District of Columbia Department of Finance Business Advisory Group since it was established in 2000.

John McClain is a Senior Fellow in residence at the Center and brings more than 30 years of local professional and research experience to the team. His experience at the county (Fairfax), metropolitan (Council of Governments) and regional (Greater Washington Board of Trade) levels provides both a unique government/business and a multi-jurisdictional foundation for his research and interpretation of forces shaping the future needs of the region's growing

population. He helped establish and then directed Metropolitan Washington COG's Cooperative Forecasting Program, which provides regional and jurisdictional forecasts of population and employment. While at the Board of Trade he directed the Potomac Conference which had as its first effort the establishment of the Greater Washington Initiative to target and promote industry sectors for attraction to the region. He helped establish the International Business council at the Board to strengthen and promote the region's positioning to attract international business. In 1996-1998 he served on the Board of Directors of the Capital Region Technology Investor Conference, an initiative to promote investment in the region's technology sector.

This leadership team at the Center is supported by other faculty, specialized professionals, and research assistants who are capable of working in both small and large teams on local as well as national and international research projects. This breadth of experience and knowledge has been tapped by all levels of government and a wide range of private and non-profit organizations to provide expert research and analytical services. The results of these services have been widely recognized and quoted as authoritative sources on complex and often controversial issues.

The Center for Regional Analysis has become the "go to" organization for economic, demographic and housing research and analysis within the Greater Washington region and is cited locally and nationally as the source of information for the media, research scholars, and investors interested in understanding the Washington area's economy.

### iii) Examples of Work

Project: **The Fiscal and Economic Impacts of Stafford County's Proposed 2008 and 2010 Comprehensive Plans**

Client: Stafford County Board of Supervisors

Project Completed: 2010

Project: **National Museum of Americans in Wartime: A Visitor Study**

Client: National Museum of Americans in Wartime

Completion Date: 2010

Project: **Forecasts for the Reston/Dulles Rail Corridor and Route 28 Corridor 2010 to 2050**

Client: Fairfax County

Completion Date: 2010

Project: **The Economic and Fiscal Impacts of DOD Spending on the Commonwealth of Virginia in FY 2008**

Client: The Virginia National Defense Industrial Authority

Completion Date: 2009

Project: **The Economic and Fiscal Impact of CAPCO-Funded Companies on the District of Columbia**

Client: District of Columbia

Completion Date: 2009

Project: **Federal Procurement Spending Impacts in the Washington Region in 2008**

Client: Cardinal Bank

Completion Date: 2009

Project: **Federal Procurement Spending and Its Impact on the Washington Area Economy in 2006 and Beyond**

Client: First Horizon Bank

Completion Date: 2009

Project: **The Impact of Construction Outlays for the Capital Beltway HOT Lanes on the Economies of Fairfax County, the Washington Metropolitan Area, and the Commonwealth of Virginia**

Client: Transurban

Completion Date: 2009

Project: **Survey of Construction/Development Industry Firms in the Washington Region Regarding the Economic Downturn**

Client: Dewberry & Davis

Project Completion: 2009

Project: **The Fairfax City Economy: It's Current Performance and Near Term Outlook**

Client: Fairfax City

Completion Date: 2009

Project: **The Economic Impact of the University of Mary Washington**

Client: The University of Mary Washington

Completion Date: 2008

Project: **Forecasts for Tysons Corner for 2010 to 2050**

Client: Fairfax County

Completion Date: 2008

Project: **An Analysis of the Economies of the District of Columbia and the Downtown Business Improvement District**

Client: D.C Downtown Business Improvement District

Completion Dates: 2008, 2006, and 2004 (three projects)

Project: **Assessing the Impact of BRAC in the Northern Virginia Workforce Investment Board Region** (with Center for Regional Economic Competitiveness)

Client: Northern Virginia Workforce Investment Board

Completion Date: 2007

Project: **Linking Job Growth and Housing: Forecasts of the Demand for Workforce Housing in Fairfax County**

Client: Fairfax County Department of Housing and Community Development

Completion Date: 2007

Project: **Supply and Demand for Workforce Housing in Fairfax County**

Client: Fairfax County Department of Housing and Community Development

Completion Date: 2006

Project: **The Economic Impacts and Implications of New Non-Stop Service from Washington Dulles to Beijing, China**

Client: Metropolitan Washington Airports Authority

Completion Date: 2006

Project: **Survey and Analysis of Workforce Demographics and Commuting in the Fredericksburg Region** (City of Fredericksburg and Counties of Caroline, King George, Spotsylvania and Stafford, VA)  
Client: Fredericksburg Regional Alliance  
Completion Date: 2006

Project: **Housing Market Trends and Implications, 2005 Year-end Report**  
Client: Rappahannock and Rapidan Regional Commission  
Completion Date: 2006

Project: **The Direct and Indirect Impacts of Cultural Facilities on Their Local Economies**  
Client: George Mason University  
Completion Date: 2006

Project: **Long-term Market Feasibility Analysis for Residential and Commercial Development in Western Prince William County, Re: Proposed Brentswood Project**  
Client: Prince William County  
Completion Date: 2006

Project: **The Potential Impact of DOD Agency Relocation on the Northern Virginia and Statewide Economies**  
Client: Northern Virginia Regional Commission  
Completion Date: 2005

Project: **The Economic Impacts of Parking Taxes**  
Client: National Parking Association  
Completion Date: 2005

Project: **Methodology and Assumptions for Developing 2010 and 2020 Job and Household Forecasts for the TPB Modeling Region Resulting from Recommendations of the Base Realignment and Closure Commission**  
Client: Metropolitan Washington Council of Governments  
Completion Date: 2005

Project: **Targeted Industry Study for Charles County, Maryland**  
Client: Charles County Economic Development Commission  
Completion Date: 2004

Project: **Demographic and Economic Forecasts for the Dulles Corridor: 2000, 2010, and 2030 (Review of MWCOG Cooperative Forecasts and Development of Alternative Forecasts for Forecasts of Toll Revenues)**  
Client: Virginia DOT (subcontract to Wilbur Smith and Associates)



Completion Date: 2004

Project: **The Fiscal Impacts of the Federal Government on the District of Columbia**

Client: DC Dept. of Finance

Completion Date: 2003

Project: **The Economic Impacts of Biomedical Research Funding: Six Case Studies** (including Montgomery County, MD)

Client: U.S. Department of Health and Human Services

Completion Date: 2003

Project: **The Economic and Fiscal Impacts of Hosting the 2012 Olympic Games on the Washington/Baltimore Metropolitan Area** (project done with Richard Clinch, Jacob France Center, University of Baltimore)

Client: The Washington/Baltimore Regional 2012 Coalition

Completion Date: 2002

Project: **The Fairfax County Economy: Current Performance and Near-Term Outlook, 2002-2005**

Client: Fairfax County

Completion Date: 2002

Project: **The Economic and Fiscal Impacts of Foreign Missions on the National Capital Region**

Client: National Capital Planning Commission

Completion Date: 2002

Project: **The Economic and Fiscal Impacts of the World Bank Group on the District of Columbia and the Washington Metropolitan Area**

Client: National Capital Planning Commission

Completion Date: 2002

Project: **The Economic Impact of George Washington University on the Washington Metropolitan Area**

Client: George Washington University

Completion Date: 2000

Project: **Fiscal Impacts of Economic Growth in Loudoun County**

Client: Coalition for Prosperity

Completion Date: 2000

#### iv) Previous Clients and Reference List

#### Private/Institutional Clients

Smithsonian Institution  
National Capital Planning Commission  
Washington Downtown Business Improvement District  
World Bank  
International Monetary Fund  
Winchester Homes  
Pulte Homes  
Richmond American Homes  
Edgemore Land  
Dogwood Development Corporation  
Greenvest  
Washington Area New Automobile Dealers Association  
Fairfax City Automobile Dealers Association  
Metropolitan Washington Council of Governments  
Brookings Institution - Washington Metropolitan Research Program  
Greater Washington Board of Trade  
Greater Washington Initiative  
Mount Vernon Ladies Association

#### Government Clients

Fairfax County  
Fairfax County Economic Development Authority  
Stafford County

City of Alexandria  
Prince George's County  
District of Columbia  
Montgomery County  
Charles County  
Arlington County

## References

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## **Project Personnel**

### **Stephen S. Fuller, Ph.D.**

Dwight Schar Faculty Chair and University Professor  
Director, Center for Regional Analysis, School of Public Policy  
George Mason University, Fairfax, Virginia.

Professor Fuller joined the faculty at George Mason University in 1994 as Professor of Public Policy and Regional Development. He served as Director of the Ph.D. Program in Public Policy from July 1998 to June 2000 and from July 2001 to July 2002. He also serves as Director of the Center for Regional Analysis. In September 2001, the GMU Board of Visitors appointed him University Professor and in July 2002 he was named to the Dwight Schar Faculty Chair.

Prior to joining the George Mason University faculty, he served on the faculty at George Washington University for twenty-five years, including nine as Chairman of the Department of Urban Planning and Real Estate Development and one as Director of Doctoral Programs for the School of Business and Public Management.

Dr. Fuller received a B.A. in Economics from Rutgers University (1962) and his Doctorate in Regional Planning and Economic Development (1969) from Cornell University. He has authored more than 750 articles, papers, and reports in the field of urban and regional economic development including monthly reports on the Washington metropolitan area (since 2/91) and Fairfax County economies (6/97 to 6/09).

His research focuses on the changing structure of metropolitan area economies and measuring their current and near-term performance. He developed a monthly series of indicators that track the current and near-term performance of the Washington's area economy in 1990. He also developed leading and coincident indices for Fairfax County in 1997 and prepared monthly reports for the County from June 1997 through June 2009. His research includes studies on the impacts of federal spending, the hospitality industry, international business and the building industry on the Washington area economy. His international assignments include Kazakhstan, Georgia, Hungary and China as well as on-going projects in Portugal. Many of his reports are available on the Center for Regional Analysis website ([www.policy.CRA@gmu.edu](http://www.policy.CRA@gmu.edu)).

Professor Fuller served on the Governor's Advisory Board of Economists under Governors Kaine, Warner, Allen and Wilder. In 2003, he was a member of the Governor Warner's Tax Reform Working Group. He also is a member of the CFO Advisory Group of the District of Columbia. Additionally, he serves on the Board of Directors of the Global Environment and Technology Foundation and Tompkins Builders Inc., a DC-based company. He served as an economic advisor to Fairfax



County, VA between 1995 and 2009 and was appointed by the Board of Supervisors to serve on the Board of Directors of the Fairfax County Convention and Visitors Authority for a five-year term ending in 2009. In 2007, he was appointed by Cardinal Bank as its Chief Economist.

In 1996, he was honored by the Economic Club of Washington as Educator of the Year and in 1997 was selected for the Richard T. Ely Distinguished Educator Award by Lambda Alpha International, an honorary society of land economists. He served as President of the Washington Chapter of Lambda Alpha from 1998 to 2000 and is a member of the Urban Land Institute's Washington District Council. He was a NAIOP Distinguished Fellow from 2001 through 2008.

**John McClain**, AICP, Senior Fellow and Deputy Director  
Center for Regional Analysis

John is a senior professional with over 25 years of experience analyzing the Washington region. His areas of expertise include regional economic development, economic and housing analyses, metropolitan transportation planning and land use studies, and analysis of real estate markets.

For fifteen years he was at the Metropolitan Washington Council of Governments where he directed the planning and policy programs and economic and demographic forecasting programs for the Washington region. He helped establish and for several years directed the Cooperative Forecasting Program, which provided official forecasts for metropolitan and local planning programs in the region. Following this work with the public sector, John was a senior executive at the Greater Washington Board of Trade, where he directed policy and research programs for the region's business community. He helped establish and directed The Potomac Conference, a process of convening the region's public and private sector leadership to address regional issues. He created the "State of Potomac" presentation and other economic research and analytical materials regarding the size and changing nature of the regional economy. He also directed a regional transportation analysis for the metropolitan Washington area. Following his work at the Board of Trade, John directed economic and real estate research for the Northeast region of the U.S. for a major international commercial real estate company.

John received a BS in Civil Engineering from Duke University and a Masters of Regional Planning from the University of North Carolina at Chapel Hill. He is a former member of the Board of Directors of the American Planning Association, the National Capital Region Technology Investor Conference, and the Arlington County Planning Commission. He received the 1998 Individual Achievement Award for service to the Washington region by the National Capital Chapter of the American Society of Civil Engineers. He is a graduate of Leadership Washington.

**Arnauld Nicogossian** is a Distinguished Research Professor and Director of the [Center for Study of International Medical Policies and Practices](#), at the School of Public Policy, George Mason University (SPP/GMU). He conducts research in biodefense and health policy, and teaches the concentration and certificate "Global Challenges and Threats and Medical Policy" graduate courses that he helped create for GMU. He is also the Director of Public Policy for the International Society of Microbial Resistance (ISMR). He is a member of the National American Red Cross Advisory Committee.

Dr. Nicogossian served as the National Aeronautics and Space Administration (NASA) Associate Administrator for Life and Microgravity Sciences, Designate Agency Health and safety official, Chief Medical Officer and Senior Advisor for Health Affairs. Dr. Nicogossian managed and funded an extensive portfolio of research and development in the areas of space biology, medicine, physics and chemistry. He was also responsible for the oversight of the NASA workforce occupational and astronaut's health programs.

Dr. Nicogossian is a Diplomat of the American Board of Preventive Medicine (Aerospace), holds a Masters in Science degree from Ohio State University, and is licensed to practice medicine in the State of Virginia. He served as President of three professional societies, holds a teaching faculty appointment at the Uniformed Services University of Health Sciences, Bethesda, Maryland. He is a fellow of the American College of Physicians, American College of Preventive Medicine, Aerospace Medical Association, the American Astronautical Society and a full member of the International Academy of Astronautics. Dr. Nicogossian has received numerous awards and medals from the U.S. and foreign governments for contributions to education and humanitarian help using telemedicine. He is a Foreign Member of the Armenian Academy of Sciences and a Distinguished Lecturer at the Moscow State University, Russia. He has been the recipient two NASA Distinguished Service Medals, the Senior Executive Service, Presidential Rank and the NASA Inventions and Contributions Awards.

He has published extensively in the peer reviewed literature. Together with Academician Gazenko he edited the four volumes of the Joint US-Russian Space Biology and Medicine published in English and Russian by the AIAA (2005) and *Nauka Press* is the contributor to several text books. Dr Nicogossian is also the senior editor of the classic textbook on Space Physiology and Medicine.

Dr. Nicogossian expertise is in program management, strategic planning and execution of research and technology development, health and medical policy analysis and evaluation, global public health, aerospace medicine and internal medicine.

## Areas of Research

- Aerospace Medicine
- Global Public Health and Preventative Medicine
- Internal Medicine
- Program/Project Management
- Public Health Policy
- Strategic Planning and Execution of Research and Development

**David J. Armor** is a Professor of Public Policy in the School of Public Policy at George Mason University, where he teaches graduate courses in multivariate statistics, culture and policy, social theory and policy, and program evaluation. From 2002 to 2005 Professor Armor served as Director of the PhD Program in Public Policy. He received his Ph.D. from Harvard University, where he also served on the faculty as Assistant and Associate Professor from 1965 to 1972.

Following a Visiting Professorship at UCLA from 1972 to 1973, Professor Armor joined the Rand Corporation as a Senior Social Scientist, where he conducted research on substance abuse, education, health, and military manpower policy from 1973 to 1982. He was a candidate for Congress in 1982, and in 1985 he was elected to the Los Angeles Board of Education. From 1986 to 1989 Professor Armor was Principal Deputy and Acting Assistant Secretary of Defense for Force Management and Personnel. He has conducted research and written widely in the general area of social policy, with special emphasis on education, civil rights and military manpower issues. Between 1999 and 2005 he served on several National Academy of Science committees studying various issues in military recruiting.

He has consulted on and testified as an expert witness in more than 40 school desegregation and educational adequacy cases.

## Areas of Research

- Affirmative Action and Desegregation
- Education Policy
- Family Policy
- Methodology (Statistical Analysis, Survey Design)
- Military Manpower
- Welfare Policy

**Brien Benson** is a Research Associate Professor at the George Mason University's School of Public Policy, where he is Project Director of the Enterprise

Risk Management Training Program and Director of the Transportation and Economic Development Research Center. Professor Benson was Associate Administrator of the U.S. Urban Mass Transportation Administration and Policy Director of the U.S. Department of Energy. He was editor-in-chief of a national journal of public policy, *Conservative Digest*, and was Director of the Hoover Institution Press at Stanford University.

#### Areas of Research

- Intelligent Transportation Systems
- Policy Evaluation
- Policy Process
- Research Writing

**Todd M. La Porte** is an associate professor in the School of Public Policy at George Mason University. His current research interests include organizational and social resiliency, and public organizations, governance and the use and impacts of networked information technologies, for which he has received NSF and Pew Foundation support. He has also worked on public attitudes to technology and homeland security, with DHS funding, critical infrastructure protection, and organizational responses to extreme events, such as 9/11 and Hurricane Katrina. His most recent publication in this area is as contributor to and co-editor of *Seeds of Disaster, Roots of Response: How Private Action Can Reduce Public Vulnerability*, with Philip Auerswald, Lewis M. Branscomb, and Erwann Michel-Kerjan, Cambridge University Press, 2006.

Professor La Porte teaches courses on critical infrastructures and extreme events, global Internet public policy, introductory international political economy, technology and institutional change, and culture, organizations and technology.

Before coming to George Mason, Professor La Porte was a member of the Faculty of Technology, Policy and Management at the Delft University of Technology in the Netherlands, where he was associate professor. From 1989 to 1995 Professor La Porte was an analyst at the Office of Technology Assessment, a research office of the U.S. Congress where he worked on the role of wireless telecommunications and the National Information Infrastructure, international trade in telecommunications services and U.S. policy, and international defense industrial cooperation and the arms trade.

In addition to his work at OTA, Professor La Porte has published work in public organizational challenges of the Web in disaster assistance, on European technology assessment methodologies and practices, and on the social implications of telecommunications mobility.



Professor La Porte received his Ph.D. in political science from Yale University in 1989, and his B.A. in sociology and political science from Swarthmore College in 1980. He lives in Washington, DC.

#### Areas of Research

- Comparative Political and Economic Systems
- Critical Infrastructures
- Data Collection Methodologies
- Digital Government
- Disaster Studies
- Emergency Management
- Energy Technologies
- High Reliability Organizations and Organizational Failure
- Information and Communications Technologies
- Large-sample Survey Research
- Organizational Change
- Public Management and Public Administration
- Qualitative Methods
- Research on Organization
- Technologies and Organizations
- Technology - Politics, Society
- Technology Assessment and Policy Analysis

**Todd Olmstead** is an assistant professor in the School of Public Policy at George Mason University, where he conducts health services research and economic analyses, primarily in the field of addiction. His current research interests include the impact of substance abuse treatment on health services utilization, estimating the elasticities of demand for illicit drugs, and the cost-effectiveness of using computer-based therapies to treat drug addiction. In addition to his recent work in the field of addiction, Professor Olmstead has published in the areas of intelligent transportation systems, highway safety, and administrative rulemaking.

Prior to coming to Mason, Professor Olmstead was a member of the faculties of the University of Connecticut and Yale University, and he was a Research Fellow at Harvard Kennedy School's Center for Business and Government.

Professor Olmstead holds degrees in public policy (Ph.D., Harvard University, 2000), operations research (M.S., UNC-Chapel Hill), and industrial engineering (M.S., B.S., SUNY-Buffalo).

#### Areas of Research

- Addiction
- Health Policy
- Health Services Research
- Operations Research
- Program Evaluation
- Safety
- Statistical Methods
- Transportation Policy

**James Riggle** is an Associate Research Professor in the School of Public Policy at George Mason University.

#### Areas of Specialization and Current Research Interests

- Regional economic development and technology-led economic development.
- Agriculture and conservation policies.
- Strategic planning, strategic plan evaluation, and organizational performance measurement.
- Planning and zoning, and land use management.
- Non-profit/non-governmental organization operation and management.
- Northern Ireland/Republic of Ireland peace processes.
- American federalism, state and local government, and intergovernmental relations.
- Public policy processes and policy modeling.
- Municipal-level economic development in China

**Edmund J. Zolnik** is Assistant Professor in the School of Public Policy (SPP) at George Mason University. His major areas of expertise are: community and regional development; safe and sustainable transportation; and multilevel modeling.

Professor Zolnik is involved in numerous research projects supported by federal agencies such as the United States Geological Survey, the Economic Development Administration, and the General Services Administration. He is also involved in research projects supported by the following local agencies: Loudoun County; Parking and Transportation Services at George Mason University; and INOVA Hospital. Prior to joining SPP, Professor Zolnik has been a member of the faculties of the Department of Geography and Geoinformation Science at George Mason and of the Department of Geography at Binghamton University in New York.

#### Areas of Research

- Community/Regional Development
- Multilevel Modeling
- Safe/Sustainable Transportation

**Ellen D. Harpel, PhD.** Dr. Harpel is the founder and president of Business Development Advisors LLC (BDA) ([www.businessdevelopmentadvisors.com](http://www.businessdevelopmentadvisors.com)), an economic development and market intelligence consulting firm.

Established in 1999, BDA works with economic development leaders at the local, state and national levels to increase business investment and job growth in their communities. BDA advises communities on the factors that drive business development and growth in today's global, services-based economy. BDA's services provide practical information that supports the day-to-day activities of economic developers.

Prior to founding BDA, Dr. Harpel was a manager with the professional services firm Deloitte & Touche, where she advised economic development organizations on business attraction, growth and retention strategies through the Fantus Consulting division. She also served as an Associate with Charles Percy & Associates, an international business advisory firm in Washington, DC, where she worked with US companies to expand their markets overseas. She has also worked with the U.S. Chamber of Commerce and the National Association of Home Builders. Through these experiences Dr. Harpel has gained a broad knowledge of the economic, real estate and market factors that drive growth and development in businesses and communities.

Dr. Harpel is a member of the Urban Land Institute, the Council for Community and Economic Research, the International Economic Development Council, and the European Network for Research on Services (RESER) and is an affiliate with the Center for Regional Analysis at George Mason University. She also serves on the Technical Advisory Committee for the Northern Virginia Streetcar Coalition. Recent publications include, "Services in the Detroit Regional Economy: Implications for a City in Transition" (The Service Industries Journal, forthcoming); "Human Capital Policies in Practice – Thinking Beyond Young Talent" (Applied Research in Economic Development, 2009); "Human Capital and Women Business Ownership" (US Small Business Administration, 2008); "Professional and Business Services in Regional Economies" (IEDC Economic Development Journal, Summer 2006); and "A Governor's Guide to Strengthening State Entrepreneurship Policy" (National Governors Association, 2004 - contributor).

Dr. Harpel earned a Bachelor of Science in Foreign Service from Georgetown University in 1988, a Master of Business Administration from the University of North Carolina in 1995, and a doctoral degree in regional economics from George Mason University's School of Public Policy in 2006.

**Agnes Artemel** specializes in economic development, neighborhood revitalization, and urban/regional planning. She served six years as a Director and later Chair of the Alexandria Economic Development Partnership, a public/private partnership whose mission is to attract, retain, and expand business in the City. During her tenure on AEDP, the organization went through several strategic planning efforts and a complete reorganization. There were three annual "Economic Summits" during which residents and businesses discussed the city's economy, prospects, and needs and prioritized activities for the following year. She wrote the scope of work for a detailed cluster analysis for Alexandria that identified key sectors to be pursued. Finally, these activities culminated in a complete reorganization of the Board of Directors, a new strategic plan and detailed implementation plan.

Ms. Artemel has assisted several other organizations define their mission and strategy. She helped a group of merchants and other businesses in a revitalizing neighborhood determine how to organize for future success, including what form of organization the informal Potomac West Alliance should take, and defining its marketing and promotional activities. She also assisted several business organizations with defining their boundaries, membership structure, and activities, including the West End Business Association, where she is currently a Director and Chairs the Local Government Liaison Committee.

Ms. Artemel was the founding Executive Director for the Eisenhower Partnership, an association of government officials, landowners, corporate businesses, developers, brokers, and residents focused on the development and redevelopment of a 500-acre formerly industrial area. She defined the purpose, activities, membership structure, and budget of the organization, recruited members, prepared promotional materials, and marketed the area.

In her consulting practice, Ms. Artemel specializes in market analysis. She has determined the market for proposed hotel, office, retail, conference center, and residential projects in communities throughout the United States. She also has a wealth of experience in tourism development, including a tourism strategy for the state of Rhode Island, a strategic plan for a Convention and Visitors Association, analyses of the impact of tourism on local economies, and visitor studies for three national-level museums. She was selected as a panelist by the Urban Land Institute for a panel on Recovery from Hurricane Ike in Galveston Texas, and on downtown revitalization in San Bernardino.

Ms. Artemel is a City Council appointee to the Mayor's Task Force on BRAC (Base Realignment and Closure) and is past president of her neighborhood association, the Old Town North Community Partnership. She is also the founder of ADAM, a grassroots organization promoting development near transit hubs and the Northern Virginia Streetcar Coalition which advocates for a connected network of streetcars for Northern Virginia to help ameliorate the region's traffic issues. She is a member of the Board of Advisors of Virginia Commerce Bank. Ms.



Artemel has a Master's degree in Urban and Regional Planning (MURP) from the George Washington University . She is a member of the International Economic Development Council, IEDC.

## **v) Project Study Plan**

The NAS technical study is examining “the scientific, technical, environmental, human health and safety, and regulatory aspects of uranium mining, milling and processing as they relate to the Commonwealth of Virginia.”

This proposed socioeconomic study complements the technical study by examining the impact of these operations on the quality of life and economic well-being of the region. Specifically, it considers:

Would the mining operations provide an economic gain or loss to the community? Would the mining operations provide a fiscal gain or loss? How would government services and regulations need to change?

What effects could the mining operations have on the region? In terms of the economy? Land use? Health? Environment? Image and aesthetics?

### **Project Management & Communication**

- Dr. Stephen Fuller will be the Principal Investigator and provide overall direction for the study. John McClain will serve as Project Manager, overseeing project workflow, coordinating SPP team member inputs and serving as the primary contact for the client.
- In addition to project team members, we will establish a Technical Advisory Board to review project team findings. The Board will supplement the project team’s expertise while providing a sounding board and check on the research team’s findings, allowing Board members to contribute their expertise in a cost-effective yet rigorous manner.
- We recommend that the client establish a 3-5 member project management team, likely to include Dr. Michael Karmis, designated members of the Virginia Coal and Energy Commission Uranium Mining Subcommittee, and select staff. We would request that the project management team also designate one person to serve as the team lead for project communication with John McClain.
- The GMU team proposes to meet formally with the project management team during a kickoff meeting and for an interim review. This review will clarify how the NAS project and its schedule will define outstanding issues and finalize the deliverables and schedule of this Socioeconomic Study. During the kickoff meeting, and subsequently as will be needed, we will discuss the project scope and refine the work plan and schedule. The interim review session will include a presentation of preliminary findings and provide an opportunity for feedback and to answer questions. (Suggest hold these meetings in Richmond or Fairfax)

- We also envision a final presentation to be made to the full Uranium Mining Subcommittee when the project is completed, if desired by the project management team.
- To the extent possible, we will coordinate our work with the schedule of the technical study underway by the National Academy of Sciences. NAS inputs will be critical to several of the socioeconomic impact analyses and will affect project timing. We would ask the project management team to facilitate introductions and coordination between our organizations. We believe our location in northern Virginia is an advantage that will facilitate communication with the NAS team.
- We will prepare monthly reports for the Uranium Mining Subcommittee to track progress, raise significant issues that have been identified, and review next steps. Reports will be prepared for each of the four major tasks and these will comprise a final report with accompanying Executive Summary providing an overview of the findings.

## **Project Tasks**

### **I. Economic Development**

#### **a. Methodology:**

- i. Define area of impact; determine whether uranium mining economic impacts are comparable to other mining economic impact effects.
- ii. Will consider construction, operations, cessation and mitigation impacts.
- iii. Require inputs from the project management team on proposed spending and operational parameters.
- iv. The multipliers relied on for calculating economic, employment and income effects for the defined area of impact are calculated by the US Department of Commerce's Bureau of Economic Analysis.
- v. Assume 10 year period of analysis?

#### **b. Tasks & Analysis**

- i. Steve Fuller will be the lead on this task.
- ii. This task includes both economic impact and fiscal impact analyses

- iii. The **economic impact analysis** elements will require inputs from the project management team on scale and scope of anticipated operations, construction estimates, and employment needs (including number, occupations, and skill levels). With these inputs we will conduct an economic analysis to determine estimates for:
1. The number and types of jobs created directly by the mining and milling operation and the associated payrolls
  2. The number, types and geographic locations of jobs created indirectly by the mining and milling operations in all sectors
  3. The number and types of jobs likely to be filled by current residents and those likely to be filled by outside workers, based on skill levels (occupations and education)
  4. Revenue generated from spending and capital investment made directly and indirectly by the uranium mining and milling operation
  5. The impact on direct and indirect employment levels after cessation of mining and milling activities
- iv. The **fiscal impact analysis** elements will be based on current tax rates for specified tax categories for state and local governments (the specific communities to be determined) and proposed capital investment and operational spending by the mining and milling operator (to be provided to the GMU team). With these inputs we will conduct a fiscal analysis to determine estimates for:
1. The impact on local and state tax revenues
- v. **Other economic development impacts** cannot easily be calculated from existing models because they are unique to uranium mining or dependent on local factors that are not incorporated into standard economic impact models. This analysis will necessarily be more descriptive than the other items in this section, but we will strive to provide a range of data points for consideration. We will work with the project management team, the NAS team, and obtain insights from other uranium mining communities to consider:



1. The number and types of jobs that might be lost due to contraction or closure of existing businesses in response to the uranium mining and milling operations
2. The impact on real estate values, land use potential, the housing market and construction industries in communities downstream and downwind from the mining operation.

## II. Government Services and Regulation

### a. Methodology:

- i. Define jurisdictions that will be affected (a subset of the group defined in item I?)
- ii. Establish jointly with project management team the types of regulations, infrastructure and services for which costs should be estimated;
- iii. To define the scope of impacts for the agreed-upon regulations, infrastructure and services:
  1. Draw on GMU SPP government finance, homeland security, and infrastructure experts to inform analysis
  2. incorporate NAS input, especially from tasks 4, 7, 8, 9 of the technical study;
- iv. Research how other uranium mining communities and surrounding areas have handled these issues (same set as in item I) – secondary source research; interviews with community and business leaders.
- v. Assume current cost structure among state & local governments stays the same; Feed in relevant findings from economic impact analysis
- vi. Require state & local government and company inputs in order to make calculations.

### b. Tasks & Analysis

- i. Dr. La Porte will be the lead on this task.

- ii. This task includes the cost side of the fiscal impact analysis described under Item I plus a broader set of undefined costs to communities
- iii. The **fiscal impact analysis** will address both revenues and expenses for state and local government. The expenses to be analyzed include:
  - 1. The local and state government costs for regulation and monitoring of mining, milling, tailings management, closure and aftercare, and any associated liabilities. How to coordinate with NRC regulations?
  - 2. The impact of increased use and costs for any infrastructure and services upgrades.
  - 3. The impact on public schools including funding and educational opportunities
  - 4. The local and state government costs for contingency planning and disaster preparedness.
  - 5. **Other costs and sources of funding** to offset costs. Specific costs to be further defined with the project management team.
  - 6. A review of the potential costs to upstream and downstream localities resulting from the mining and milling operation.
  - 7. A review of the potential costs and determination of the parties responsible for remediating any potential environmental damage, as available and can be obtained from other uranium mining operations elsewhere.
  - 8. A review of potential sources of funding to offset the costs identified above.

### III. Public Health and Environment

Dr. Nicogossian will be in the lead on this part of the study.

The purpose of the study of the health and environmental impact of the uranium mining and milling is fivefold:

- 1. To critically review the available scientific, epidemiologic and public health evidence related to the uranium mining and milling

2. Review similar precedents and impacts on the landscape, tourism, scenic appeal and other aspect of interest to the sponsors
3. Determine the knowledge gaps addressing health and environmental risks and chronic exposures to environmental contamination by uranium, including unintentional release of toxic by-products in the waterways and food chain
4. Address the major public objections to uranium mining and milling and propose appropriate evidence based health communication, education and public awareness information dissemination processes and messages and
5. Propose health and environmental policies, including best practices for risk mitigation

### **Background**

Occupational and environmental risks of radiation are well defined<sup>i</sup>. Both stochastic and deterministic effects of low level radiation exposures, acute and chronic, on patients undergoing radiotherapy, radiation workers and astronauts have been studied and reported in the Literature. Periodic reports on the subject are regularly published by the National Academies, National Radiation Protection Committee (NCRP) and its counterpart the International Radiation protection. Ethical issues in uranium mining have been also addressed<sup>ii</sup>. Several U.S. regulatory agencies have prescribed monitoring standards and safety policies. A recent study did not find evidence for increased cancer or mortality in a community involved in uranium milling and mining<sup>iii</sup>. However additional reviews are required to understand the full scope of the knowledge base. The opposition to mining and debate on extent of the degradation of the environment and chronic health effects on the mining region's residents persists.

#### **a. Methodology:**

- i. Inputs from NAS, especially tasks 1, 4, 9, 10, 11

CSIMPP has developed an evidence based evaluation process for addressing policy issues related to health risks. This process will determine the strength of the existing scientific knowledge base and precedents (sentinel events) from mining and milling. Specifically the following step will be followed:

1. Literature searches and acquisition
2. In-depth qualitative analysis which is based on the strength and relevance of publication and allow the evidence rating
3. If feasible and based on the adequacy of the evidence review a quantitative risk analysis
4. Relevance of the evidence to existing or proposed health and environmental policies and practices.

This research will be supplemented by reviews of all existing sources of objections to the mining and milling. Identification of the strength and weakness of the objections and categorization into opinions and facts. (if necessary across-sectional anonymous survey(s) of different supporting and opposing major organizations within Virginia will be conducted).

The researchers will also review and evaluate the content of all available public communication messages issued by the Virginia Government or mining companies

A panel of experts will be convened by the CSIMPP to review the proposed report prior to its release.

#### b. Expected Products

A report on the subject matter stating the current evidence, knowledge gaps and possible solutions (policies and/or practices)

An evidence based communication strategy

### IV. Social Impacts

#### a. Methodology:

- i. Interviews of community and economic development leaders in other uranium mining communities in the US and other perceived hazardous facilities (Areva in Lynchburg? Nuclear power stations in Louisa and Surry counties? Newport News?) and/or mining communities in Virginia to understand effects on regional image
- ii. Use input from tasks 1-3 to consider impacts on institutions, aesthetics and quality of life; review NAS findings
- iii. Participate in and/or review findings and public comments from NAS meetings (October, November and December 2010)
- iv. Interviews of local community, government and business leaders in the region surrounding Coles Hill (to be jointly identified with project management team) (March and May 2011)
- v. Ensure concerns from residents on socio-economic impact of the mining operation are heard and incorporated into this

analysis – issues raised from community meetings become part of questions asked in comparison communities

b. Tasks & Analysis

i. Ellen Harpel will be the lead on this task.

ii. What are concerns in this community?

1. Do community, government and business leaders have confidence in the mining/milling company to control adverse effects and the ability of the government to properly regulate such effects?
2. What concerns are there regarding the impact on private schools and local institutions?
3. What concerns exist regarding impact on quality of life?
4. What are public health and environmental concerns?

iii. What has happened in other uranium mining communities in the US and Canada? What has happened in other “hazardous sites” in Virginia?

1. What have been the effects on the internal and external image of the regions – specifically the belief that an area remains a safe place to live, work and invest?
2. Do community, government and business leaders have confidence in the mining/milling company to control adverse effects and the ability of the government to properly regulate such effects?
3. What have been the impacts on local institutions?
4. What have been the impacts on aesthetics and quality of life?

## vi) Schedule and Budget

It is anticipated that the project will commence in January of 2011 and be completed in December of 2011. The specific four tasks will be scheduled to coordinate in timing with outputs from the NAS study based upon results of the Kickoff meeting and discussion with the Project Management Team.

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<sup>i</sup> NCRPpubs@NCRPonline.org

<sup>ii</sup> Panikkar B., Brugge D. “*The ethical issues in uranium mining research in the Navajo Nation*”. [Account Res.](#) 2007 Apr-Jun;14(2):121-53

<sup>iii</sup> Boice JD et al. “*Cancer incidence and mortality in populations living near uranium milling and mining operations in Grants, New Mexico, 1950-2004*”. [Radiat Res.](#) 2010 Nov;174(5):624-36. Epub 2010 Sep 13



**Virginia Coal and Energy Commission**  
**Socioeconomic Impact Study of Uranium Mining**  
**12/01/2010 - 11/30/2011**

		TASK A	TASK B	TASK C	TASK D	TOTAL
<b>A. PERSONNEL</b>						
1. Faculty - Summer	<u>FTE</u>					
PI: Stephen Fuller	0.08	16,422	0	0	0	16,422
Todd Laporte	0.05	0	4,310	0	0	4,310
David Armor	0.01	0	1,402	0	0	1,402
Todd Olmstead	0.08	0	0	6,735	0	6,735
Edmund Zolnik	0.05	0	0	0	3,909	3,909
2. Faculty - Calendar Year	<u>FTE</u>					
John McClain	0.06	7,120	0	0	0	7,120
James Riggle	0.06	0	4,796	0	0	4,796
Arnauld Nicogossian	0.05	0	0	8,384	0	8,384
3. Students (AY)	<u>No.</u>					
GRA - Doctoral	0.45	8,550	0	0	0	8,550
GRA - Doctoral	0.35	0	6,650	0	0	6,650
GRA - Doctoral	0.35	0	0	6,650	0	6,650
GRA - Doctoral	0.35	0	0	0	6,650	6,650
<b>TOTAL PERSONNEL</b>		<b>32,092</b>	<b>17,158</b>	<b>21,769</b>	<b>10,559</b>	<b>81,578</b>
<b>B. FRINGE BENEFITS</b>						
@ 29.40% (FT Faculty - AY and CY)		2,093	1,410	2,465	0	5,968
@ 7.65% (Wages and Summer Faculty)		1,256	437	515	299	2,507
<b>TOTAL FRINGE BENEFITS</b>		<b>3,349</b>	<b>1,847</b>	<b>2,980</b>	<b>299</b>	<b>8,475</b>
<b>C. CONSULTING SERVICES</b>						
1. Ellen Harpel		15,000	0	0	10,000	25,000
2. Agnes Artemel		0	0	0	10,000	10,000
<b>TOTAL CONSULTANTS</b>		<b>15,000</b>	<b>0</b>	<b>0</b>	<b>20,000</b>	<b>35,000</b>
<b>D. TRAVEL</b>						
1. Lodging/Subsistence		1,520	2,280	1,520	760	6,080
2. Mileage		200	300	200	100	800
<b>TOTAL TRAVEL</b>		<b>1,720</b>	<b>2,580</b>	<b>1,720</b>	<b>860</b>	<b>6,880</b>
<b>E. OTHER DIRECT COSTS</b>						
1. GRA Health Insurance (Enter Number of GRAs)	<u>No.</u>					
\$1,400/yr: Based upon \$10,000+ salary level	1.500	630	490	490	490	2,100
<b>TOTAL OTHER DIRECT COSTS</b>		<b>630</b>	<b>490</b>	<b>490</b>	<b>490</b>	<b>2,100</b>
<b>TOTAL DIRECT COSTS</b>		<b>52,791</b>	<b>22,075</b>	<b>26,959</b>	<b>32,208</b>	<b>134,033</b>
<b>F. FACILITIES &amp; ADMINISTRATIVE COSTS</b>						
Organized Research (OR)	<u>RATE</u>					
49.07% MTDC (On-Campus, OR)	49.07%	25,595	10,592	12,988	15,564	64,740
<b>TOTAL PROJECT COSTS</b>		<b>78,386</b>	<b>32,667</b>	<b>39,947</b>	<b>47,772</b>	<b>198,773</b>

**Facilities & Administrative Costs Base**

Year 1	Year 2	Year 3	Year 4	Total
52,161	21,585	26,469	31,718	131,933

ITEMS EXCLUDED FROM F&A	
ITEM	AMOUNT
1. Participant Support (per sponsor guidelines)	0
2. Equipment (\$5000/ea)	0
3. Tuition	0
4. GRA Health Insurance	2,100
5. Subcontract(s) amount over \$25,000	0
<b>TOTAL</b>	<b>\$2,100</b>

<b>TOTAL DIRECT COSTS REQUESTED FROM SPONSOR</b>	134,033
<b>TOTAL F&amp;A COSTS REQUESTED FROM SPONSOR</b>	64,740
<b>TOTAL COSTS REQUESTED FROM SPONSOR</b>	<b>198,773</b>

Salaries and wages are estimates only. Actual salaries and wages will be paid in accordance with university policy.  
Employee benefits are charged according to the specific benefit package elected by the employee.

Tuition and fees are budgeted at Out-of-State rates. Actual charges will be made according to individual domiciliary classification.  
GRA Health Insurance is an estimated rate. Actual charges will be paid in accordance with university policy.

## PROJECT ORGANIZATION

