## Jay Sullivan

#### Professor and Head Department of Forest Resources and Environmental Conservation College of Natural Resources and Environment Virginia Tech

## **Professional Interests**

Forest and resource economics, economics of forest conservation and restoration, forest landowner incentives and decisions, forest and land management and planning

## Education

Ph.D.	Forestry Economics, University of California, Berkeley, October 1988
M.S.	Forestry Economics, Colorado State University, August 1984
B.S.	Forest Management, Colorado State University, August 1981

### **Administrative Appointments**

- December 2015 to present—Head, Department of Forest Resources and Environmental Conservation, Virginia Tech
- May 2015 to December 2015—Interim Head, Department of Forest Resources and Environmental Conservation, Virginia Tech

## **Academic Appointments**

- July 2005 to present—Professor of Forestry Economics and Management, Department of Forest Resources and Environmental Conservation, Virginia Tech
- July 1994 to June 2005—Associate Professor of Forestry Economics and Management, Department of Forestry, Virginia Tech
- Nov. 1988 to June 1994—Assistant Professor of Forestry Economics and Management, Department of Forestry, Virginia Tech

## Experience

- Aug. 1985 to Oct. 1988—Research Assistant and Graduate Student Instructor, Department of Forestry and Resource Management, University of California, Berkeley
- Aug. 1985 to Aug. 1987—Consultant Economic Analysis, Engineering-Economics Associates, Berkeley, California
- May 1983 to Aug. 1985—Research Forester Economic Analysis, USDA Forest Service Rocky Mountain Forest and Range Experiment Station
- June 1981 to May 1984—Graduate Research Assistant, Department of Forest and Wood Sciences, Colorado State University

May 1982 to April 1984—Operations Research Analyst – IMPLAN (econ. impact analysis) development team, USDA Forest Service, Land Management Planning-Detached Washington Office Unit

## Honors, Awards and Fellowships

Teaching Excellence Award, College of Natural Resources and Environment Curriculum Clubs, 2012
Gamma Sigma Delta Faculty Teaching Award, Virginia Tech, 2005
Certificate of Teaching Excellence, College of Natural Resources, Virginia Tech, 2001
Outstanding Graduate Student Instructor, University of California, Berkeley, 1988
USDA Forest Products Marketing/International Trade Fellowship, University of California, Berkeley, 1985-1988
Hill Memorial Fellowship, Colorado State University, 1984/85
Phi Kappa Phi, National Honor Society
Graduation with High Distinction, Colorado State University, 1981
President's Scholarship, Colorado State University, 1979-1981

Publications (\*-Indicates a student for whom I was advisor/co-advisor, lead author shown first)

### **Refereed journal articles**

- Sarr\*, M.S., J.R. Seiler, and J. Sullivan. Growth and Physiology of *Senegalia senegal* (L.) Britton Seedlings as Influenced by Seed Origin and Salinity and Fertility Treatments. 2017. *Forests*. 8(10) 388: doi:10.3390/f8100388
- Hanzelka\*, N.C., J. Sullivan, M.C. Bolding, and S.M. Barrett. Economic Feasibility of Utilizing Precommercially Thinned Southern Pine as a Woody Biomass Energy Source. 2016. Forest Products Journal. 66(5-6):354-361.
- Xu\*, Y., G.S Amacher and J. Sullivan. Amenities, Multiple Natural Disturbances, and the Forest Rotation Problem. 2016. *Forest Science*. 62(4): 422-432.
- Xu\*, Ying, G.S. Amacher, and J. Sullivan. Optimal Forest Management with Sequential Disturbances. 2016. *Journal of Forest Economics*. Vol. 24(August):106-122.
- Hanzelka\* N.C., M.C. Bolding, J. Sullivan, and S.M. Barrett. Productivity and Costs of Utilizing Small-diameter Stems in a Biomass-only Harvest. 2016. *International Journal of Forest Engineering*. Vol. 27(1): 43-52.
- Morris, B.C., M.C. Bolding, W.M. Aust, K.J. McGuire, E.B. Schilling and J. Sullivan. Differing Levels of Forestry Best Management Practices at Stream Crossing Structures Affect Sediment Delivery and Installation Costs. 2016. *Water*. 83(3): doi:10.3390/w8030092
- Watson\*, A., J. Sullivan, G. Amacher and C. Asaro. Cost Sharing for Pre-commercial Thinning in Southern Pine Plantations: Willingness to Participate in Virginia's Pine Bark Beetle Prevention Program. 2013. *Forest Policy and Economics*. 34(September):65-72.

- Sullivan, J. and G.S. Amacher. Optimal Hardwood Tree Planting and Forest Reclamation Policy on Reclaimed Surface Mine Lands in the Appalachian Coal Region. 2013. *Resources Policy*. 38:1-7.
- Sullivan, J. and G.S. Amacher. Private and Social Costs of Surface Mine Reforestation Performance Criteria. 2010. *Environmental Management*. 45(2):311-319.
- Vokoun, M., G.S. Amacher, J. Sullivan and D. Wear. Examining Incentives for Adjacent Nonindustrial Private Forest Landowners to Cooperate. 2010. *Forest Policy and Economics*. 12(2):104-110.
- Sullivan, J. and G.S. Amacher. Social Costs of Mine-land Reclamation. 2009. *Land Economics*. 85(4): 712-726.
- Goodnow\*, R., J. Sullivan and G.S. Amacher. Ice Damage and Forest Stand Management. 2008. *Journal of Forest Economics*. 14(4):268-288.
- Sullivan, J., J. Aggett\*, G. Amacher and J. Burger. Financial Viability of Reforesting Reclaimed Surface Mined Lands, the Burden of Site Conversion Costs, and Carbon Payments as Reforestation Incentives. 2006. *Resources Policy*. 30(2006):247-258
- Sullivan, J., G.S. Amacher and S. Chapman\*. Forest Banking and Forest Landowners: Forgoing Management Rights for Guaranteed Financial Returns. 2005. *Forest Policy and Economics*. 7(2005):381-392.
- Conway, M.C., Amacher, G.S., J. Sullivan and D. Wear. Decisions Nonindustrial Forest Landowners Make: An Empirical Examination. 2003. *Journal of Forest Economics*. 9(3):181-203.
- Amacher, G.S., M.C. Conway and J. Sullivan. Econometric analysis of Nonindustrial Forest Landowners: Is there anything left to study? 2003. *Journal of Forest Economics*. 9(2):137-164.
- Jenkins\*, D.H., J. Sullivan, G.S. Amacher, N.S. Nicholas and D.W. Reaves. Valuing High Altitude Spruce-Fir Forest Improvements: Importance of Forest Condition and Recreation Activity. 2002. *Journal of Forest Economics*. 8(1):77-99.
- Fina, M., G.S. Amacher and J. Sullivan. Uncertainty, Debt, and Forest Harvesting: Faustmann Revisited. 2001. *Forest Science* 47(2):188-196.
- Sullivan, J. and G.S. Amacher. A Framework for Designing Forest Subsidies: Linking Landowner and Regional Impacts in the Mississippi Delta. 1999. *Forest Science* 45(3):381-393.
- Amacher, G.S., J. Sullivan, L. Shabman, L. Zepp and D. Grebner. Reforestation of Flooded Farmland: Policy Implications from the Mississippi River Delta. 1998. *Journal of Forestry* 96(5):10-17.

- Miller\*, G.W. and J. Sullivan. Model for Multi-Stand Management Based on Structural Attributes of Individual Stands. 1997. *Forest Ecology and Management* 96(1997):261-271.
- Sullivan, J. and J.K. Gilless. Assessing Public Timber Harvest Impacts In A Mixed Public/Private Stumpage Market. 1996. *INFOR* 34(3):198-208.
- Reyner\*, K., W. Leuschner and J. Sullivan. A Silviculture Investment Model for Industrial Forests. 1996. *Forest Products Journal* 46(1):25-30.
- Gericke\*, K.L. and J. Sullivan. Assessing Regional Economic Contributions from National Park System Units. 1996. *Park Science* 16(2):24-26.
- Cox\*, E.S. and J. Sullivan. Harvest Scheduling with Spatial Wildlife Constraints: An Empirical Examination of Tradeoffs. 1995. *Journal of Environmental Management* 43(4):333-348.
- Gericke\*, K.L. and J. Sullivan. Public Participation and Conflict in Forest Service Planning--An Empirical Examination. 1994. *Society and Natural Resources* 7(2):125-135.
- Johnson\*, D.G. and J. Sullivan. Economic Impacts of Civil War Battlefield Preservation Options: An Ex-Ante Evaluation. 1993. *Journal of Travel Research* 32(1):21-29.
- Teeter, L., G. Somers and J. Sullivan. Optimal Forest Harvest Decisions: A Stochastic Dynamic Programming Approach. 1993. *Agricultural Systems Journal* 42(1993):1-12.
- Sullivan, J. and J.K. Gilless. Empirical Assessment of the Accuracy of a Sensitivity Formula for Technical Coefficients. 1992. Southern Business and Economics Journal 15(3):170-185.
- Gericke\*, K.L., J. Sullivan and J.D. Wellman. Public Participation in National Forest Planning: Perspectives, Procedures, and Costs. 1992. *Journal of Forestry* 90(2):35-38.
- Sullivan, J. and J.K. Gilless. Hybrid Econometric/Input-Output Modeling of the Cumulative Economic Impact of National Forest Harvest Levels. 1990. *Forest Science* 36(4):863-877.
- Sullivan, J. and J.K. Gilless. Cumulative Employment Effects on Northern California's Wood Products Industries from National Forest Timber Harvests. 1989. *Forest Science* 35(3):856-862.
- Sullivan, J., P.N. Omi, A.A. Dyer and A. Gonzalez-Caban. Evaluating the Economic Efficiency of Wildfire Rehabilitation Treatments. 1987. Western Journal of Applied Forestry 2(2):58-61.
- Alward, G.S., J. Sullivan and T.W. Hoekstra. Using Socioeconomic Data in the Management of Fishing and Hunting on Public Lands. 1984. *Transactions of the Forty-Ninth North American Wildlife and Natural Resources Conference*. pp. 91-103.

Proceedings (\*-Indicates a student for whom I was advisor/co-advisor, presenters in bold)

- Hanzelka\*, N.C. M.C. Bolding, S.M. Barrett and J. Sullivan. Feasibility of Utilizing Small Diameter Southern Pine for Biomass in the Virginia Coastal Plain. In: Schweitzer, C.J.; Clatterbuck, W.K.; Oswalt, C.M., eds. 2016. Proceedings of the 18th biennial southern silvicultural research conference. e–Gen. Tech. Rep. SRS–212. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 614 p.
- Xu, Y.\*, G. Amacher, and J. Sullivan. Optimal Forest Management with Sequential Disturbances, Presented at International Society of Forest Economics, Raleigh NC April 3-4 2016
- Hanzelka\*, N.C., M.C. Bolding, S. Barrett, and J. Sullivan. 2015. Using Pre-commercial Thinning Residues as a Woody Biomass Feedstock: An Economic Feasibility Analysis. 38th Annual Council on Forest Engineering Annual Meeting. July 19 22, 2015. Lexington, KY.
- Hanzelka\*, N., C. Bolding, J. Sullivan, and S. Barrett. 2015. Feasibility of Utilizing Small Diameter. Southern Pine for Biomass in the Virginia Coastal Plain. 18th Biennial Southern Silvicultural Research Conference. March 2-5, 2015. Knoxville, TN.
- Sarr\*, M., J. Sullivan, and J. Seiler. 2015. Gum Arabic Tree Management: Combining Ecophysiology and Financial Analysis to Increase Gum Arabic Supply in Senegal. Symposium sur les projets de recherche finances par l'USAID/ERA: La recherche collaborative, le transfert des technologies et des connaissances vers les acteurs du monde agricole. January 13-15, 2015. Dakar, Senegal.
- Sarr\*, M., J. Sullivan, and J. Seiler. 2014. An economic analysis of growing Acacia senegal on its natural range in Senegal. ERA Senegal: Education and Research in Agriculture. Virginia Tech. September 19, 2014.
- Leveroos\*, M. and J. Sullivan. 2013. Economic Viability of Woody Bioenergy as a Mine Reclamation Procedure. Southern Forest Economics Workers Meeting. Auburn, AL. March 10-12, 2013.
- Sullivan, J. 2012. Optimal Hardwood Planting on Reclaimed Surface Mines. Fourth International Faustmann Symposium: Forest Economics under Multiple Challenges, September 9-12. Saariselkä, Lapland, Finland.
- Leveroos\*, M.K., J. Sullivan and D.M. Evans. 2012. Economic Viability of Woody Bioenergy Crops as a Potential Mine Reclamation Procedure. Powell River Project Annual Meeting, UVA College at Wise. Sept 12, 2013.
- Sullivan, J. 2011. Optimal Hardwood Planting, Policies, and Substrate on Reclaimed Surface Mines. Appalachian Regional Reforestation Initiative Annual Meeting. Knoxville, TN. August 2-4, 2011.
- Watson\*, A. and J. Sullivan. 2011. Cost share payment and willingness to participate in

Virginia's Pine Bark Beetle Prevention Program. Southern Forest Economics Workshop. Little Rock, AR. March 20-22, 2011.

- **Sullivan, J.** 2010. Evolution of a Client-Based Forestry Capstone Course. 8<sup>th</sup> Biennial Conference on University Education in Natural Resources. Blacksburg, VA. March 25-27, 2010.
- Sullivan, J. and G. Amacher. 2010. Costs of Performance Standards for Forestry Reclamation of Surface Mined Lands. Southern Forest Economics Workshop. Pinehurst, NC. March 15-17, 2010.
- Sullivan, J. and G.S. Amacher. 2008. Private and Social Costs of Surface Mine Reforestation Performance Criteria. Proceedings of National Ground Water Association/U.S. EPA Remediation of Abandoned Mine Lands Conference. Denver, CO. Oct. 2-3, 2008. 10 p.
- Baker\*, K., J. Sullivan, J.A. Burger, G. Amacher. 2008. Coal Mine Reclamation in the Southern Appalachians: costs of forestry versus hayland pasture. Proceedings of Joint Conference Conference of American Society of Mining and Reclamation, 25<sup>th</sup> Annual National Conference, and International Affiliation of Land Reclamationists, June 14-19, 2008, Richmond, VA.
- Sullivan, J. and G. Amacher. 2007. Economics of Surface Mine Reforestation: Mine Operator and Landowner Perspectives. 2007 Mined Land Reforestation Conference. Abingdon, VA. August 7-8, 2007.
- Sullivan, J. and **G. Amacher**. 2007. Performance Bonding and Reforestation of Surface Mined Lands. Southern Forest Economics Workshop. San Antonio, TX. March 4-6, 2007.
- Aggett\*, J., J. Sullivan, G. Amacher, J. Burger. 2004. Financial Viability of Forestland Restoration Following Surface Mining: Who pays the costs? Ohio DMRM Applied Research Conference 2004: Conservation and Restoration Innovations. Ohio University, December 8, 2004.
- Aggett\*, J., J. Sullivan, G. Amacher and J. Burger. 2004. Financial Cost to Landowners Associated with Forestland Conversion to Non-Productive Uses in the Process of Surface Mining. Proceedings of Joint Conference of American Society of Mining and Reclamation, 21st Annual National Conference, and 25th West Virginia Surface Mine Drainage Task Force Symposium, April 18-22, 2004, Morgantown, West Virginia. pp. 9-19
- Fox, T.R., J. Sullivan, J. Aggett\*, J. Burger, G. Amacher, C. Zipper, and J. Galbraith. 2003. Restoring sustainable forests on Appalachian mined land for carbon sequestration, wood products, renewable energy and other ecosystem services. U.S. DOE/NETL Carbon Sequestration Program Review. Pittsburgh, PA, June 4, 2003
- Sullivan, J., G.S. Amacher and S. Chapman\*. 2002. Forest Banking and Landowner Incentives: Management Rights v. Annual Returns. Southern Forest Economics Annual Meeting (SOFEW), Virginia Beach, Virginia, March 17-19, 2002

- Sullivan, J., G.S. Amacher and S. Chapman\*. 2001. The Forest Bank An Economic Perspective. Conference on Forest Banking, Abingdon, VA, October 23-24, 2001
- Sullivan, J., G.S. Amacher and C. Hensyl\*. 2001. Tract and Landowner Characteristics: Forest Industry Procurement from NIPF Lands, Southern Forest Economists Annual Meeting (SOFEW), Atlanta, Georgia, March 27-28, 2001
- Amacher, G.S., J. Sullivan, C. Conway. 2000. Changing Landowner Preferences: Forest Fragmentation and Absenteeism, presented at conference on Sustaining Southern Forests: The Science of Forest Assessment, Southern Forest Resource Assessment (SOFRA), Research Triangle Park, North Carolina, November 7-8, 2000
- Fina, M., G.S. Amacher and J. Sullivan. 1999. Uncertainty, Debt, And Forest Harvesting: Is the "Volvo Theorem" Myth or Reality? 150 Years of the Faustmann Formula: The Consequences for Forestry and Economics in the Past, Present, and Future. October 3-6, Darmstadt, Germany.
- Sullivan, J. and G.S. Amacher. 1999. Linking Landowner Rents with Policy Design: Faustmann in the Delta. 150 Years of the Faustmann Formula: The Consequences for Forestry and Economics in the Past, Present, and Future. October 3-6, Darmstadt, Germany.
- Sullivan, J. and G.S. Amacher. 1999. A New Framework for Linking Landowner and Regional Impacts When Designing Natural Resource Policies. Ninth Annual Conference of the European Association of Environmental and Resource Economists. June 25-27, Oslo, Norway.
- Sullivan, J. and G.S. Amacher. 1998. Reforestation Subsidy Design Using IMPLAN. Proceedings of National IMPLAN Conference, October 16-17. Washington, D.C. pp. 61-68
- Sullivan, J. and G.S. Amacher. 1998. Gaps in Landowner and Regional Economic Returns to Reforestation. presentation at Southern Forest Economics Workshop, March 25-27. Williamsburg, VA.
- Sullivan, J., D.W. McCollum, and G.S. Alward. 1996. Regional CGE Models Based on IMPLAN Social Accounts: Experiments in Arizona and New Mexico. Proceedings of the National IMPLAN Conference. August 15-16. Minneapolis, MN. pp. 12.1-12.23
- Amacher, G., M. Aust, D. Grebner, J. Groninger, L. Shabman, J. Sullivan, and L. Zepp. 1996. Landowners Financial Returns to Reforestation of Marginal Farmlands. presentation at Conference on Connecting Points of View in the Delta. August 13-15. Memphis, TN.
- Jenkins\*, D., J. Sullivan, D.W. Reaves, N.S. Nicholas and G.S. Amacher. 1996. Sensitivity of Protection Value to Forest Quality in the Southern Appalachian Spruce-Fir Forest. presentation at the Southern Forest Economics Workshop. March 28-29, Gatlinburg, TN.
- Lindall, S., G. Alward, J. Sullivan and A. Hussain. 1995. IMPLAN SAM: A Social Accounting Matrix for Regional IO Systems. Mid-Continent Regional Science Association

Meetings. June 3-4, 1995. 14 p.

- Jenkins\*, D.H., J. Sullivan, N.S. Nicholas, S.M. Zedaker, G.J. Buhyoff, and T.G. Gregoire. 1994. Modeling Multiple Resource Values for the Southern Appalachian Spruce-Fir Forest. presentation at Southern Man and the Biosphere Conference. Nov. 14-17. Hendersonville, NC.
- Gericke\*, K.L. and **J. Sullivan**. 1994. Multiple Destination Travel and the Travel Cost Method: An Empirical Analysis of Assumptions. abstract and presentation for the Southern Forest Economics Workshop. March 27-29. Savannah, GA
- Sullivan, J. 1994. Applications of Ecosystem Management. presentation for Appalachian Regional Meeting of the Society of American Foresters. Jan. 26. Charlottesville, VA.
- Miller\*, G.W. and J. Sullivan. 1993. Formulating a Stand Growth Model for Mathematical Programming Problems in Appalachian Forests. Proceedings of the Ninth Central Hardwood Forest Conference, Purdue University March 8-10, 1993. North Central Forest Experiment Station, General Technical Report NC 161. pp 353-362.
- Gericke\*, K.L. and J. Sullivan. 1992. Public Participation in National Forest Planning: an Ex Post Facto Examination. abstract and presentation at Fourth North American Symposium on Society and Resource Management. May 17-22. Madison, WI.
- Gericke\*, K.L., J. Sullivan and M.P. Hite. 1992. Economic Contributions of National Park Service Operations to Virginia. poster at Fourth North American Symposium on Society and Resource Management. May 17-22. Madison, WI.
- Miller\*, G. and J. Sullivan. 1992. Prescribing Optimal Harvests in Forests Containing Even-Aged and Uneven-Aged Stands. abstract and presentation at The Institute for Management Sciences - Operations Research Society of America 33rd Joint National Meeting. Bulletin Number 33. April 27-29. Orlando, FL.
- Gericke\*, K.L., J. Sullivan and M.P. Hite. 1992. Assessing the Economic Contributions of National Park Service Operations. Proceedings of the Southeastern Recreation Research Conference. February 13-14. Asheville, N.C.
- Sullivan, J. 1991. Strategic Industry Behavior and Timber Supply in a Mixed Public/Private Stumpage Market. abstract and presentation at The Institute for Management Sciences-Operations Research Society of America 31st Joint National Meeting. Bulletin Number 31. May 12-15. Nashville, TN.
- Sullivan, J., and M.P. Hite. 1991. Modeling the Interaction Between Public and Private Timber Supplies in a Local Forest Economy: A Mathematical Programming Approach. Proceedings of the 1991 Symposium on Systems Analysis in Forest Resources. USDA Forest Service, GTR SE-74, pp. 160-164. (presented by L.D. Teeter from Auburn University)

### **Refereed Book Chapters**

- Amacher, G., C. Conway, and J. Sullivan. 2004. Econometric investigation of nonindustrial forest landowners: a synthesis with new directions. pp 241-252. in: Rauscher, H. Michael; Johnsen, Kurt, eds. 2004. Southern forest science: past, present, and future. Gen. Tech. Rep. SRS–75. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 394 p.
- Jenkins\*, D., J. Sullivan, D.W. Reaves, N.S. Nicholas and G.S. Amacher. 1998. Sensitivity of Protection Value to Forest Quality: Linking Economic Value and Climate Change in the Southern Appalachian Spruce-Fir Forest. in: Mickler, R. and S. Fox, eds., *Productivity and Sustainability of Southern Forest Ecosystems in a Changing Environment*. Springer-Verlag, New York. pp. 837-854.

### **Other Book Chapters**

Sullivan, J. 1995. Linear Programming and Forest Planning. pp. 12.1-12.30 in: D. Rideout and H. Hesseln, *Principles of Forest and Environmental Economics*. Resource and Environmental Management, LLC. Fort Collins, CO.

#### Other selected papers and reports

- Amacher, G., and J. Sullivan (eds). 2003. Proceedings of the 2002 Southern Forest Economics Workshop, Virginia Beach, VA.
- Sullivan, J., D.W. McCollum, and G.S. Alward. 2000. Using IMPLAN to Develop Computable General Equilibrium Models. USDA Forest Service. 57p.
- Amacher, G., J. Sullivan, L. Shabman, L. Zepp, J. Groninger. 1997. Restoration of the Lower Mississippi Delta Bottomland Hardwood Forest: Economics and Policy Considerations. Research Bulletin 185, Virginia Water Resources Research Center, Virginia Tech, Blacksburg, VA. 115 p.
- Sullivan, J., M.E. Patterson, and D.R. Williams. 1993. Shenandoah National Park Economic Impacts and Visitor Perceptions, 1992. USDI National Park Service. 78p.
- Sullivan, J., K.L. Gericke\*, M.P. Hite, and Y. Grow. 1993. Assessing the Economic Contributions of National Park Service Units: A Handbook. USDI National Park Service. 54p.
- Sullivan, J., K.L. Gericke\*, M.P. Hite, and Y. Grow. 1993. Economic Contributions from National Park Service Operations in the Commonwealth of Virginia. USDI National Park Service. 105p.
- Palmer, C., E. Siverts and J. Sullivan. 1985. IMPLAN Version 1.1: Analysis Guide. USDA Forest Service, Land Management Planning Systems. 238p.
- Alward, G.S. and B.J. Sullivan. 1984. Estimated Impacts of Increased Federal Grazing Fees on Income and Employment in 13 Western States. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 126p.

Dyer, A.A., L.D. Teeter and B.J. Sullivan. 1983. The Role of Private Individuals and Firms,

States and the Federal Government in Protection of State and Private Lands from Hazards of Wildfire. Special Series 26, Department of Forest and Wood Sciences, Colorado State University. 32p.

# **Sponsored Research**

- Economic Viability of Woody Bioenergy Crops as a Potential Mine Reclamation Procedure: An undergraduate research proposal. PI: Jay Sullivan. Sponsor: Powell River Project. Amount: \$12,000 for data collection of bioenergy plots using undergraduate researchers. Dates: 2013-2016
- Conservation Credits for Agroforestry Production: Agroforestry Non-point Nutrient Offsets in Virginia's Region of the Chesapeake Bay Watershed. PIs: John Munsell, Kevin McGuire, Stephen Schoenholtz, Jay Sullivan. Sponsor: National Fish and Wildlife Foundation. Dates: 2015-2018 Amount: \$250,896.
- Conservation Credit for Agroforestry Production: Merging Water Quality Credit Markets and Agroforestry. co-PI with J. Munsell (PI), and K. McGuire. Sponsor: Natural Resources Conservation Service. \$285,729. 2015-2018
- Advancing Agroforestry Riparian Buffer Implementation for Soil Health in VA. co-PI with J. Munsell (PI). Sponsor: Natural Resources Conservation Service. \$28,673. 2015-2016.
- Education and Research in Agriculture: Senegal. co-PI with J. Seiler. Sponsor: USAID. \$108,989. 2014-2017.
- Advancing NTFP Agroforestry Riparian Buffer Implementation for Soil Health in Virginia. co-PI with J. Munsell (PI). Sponsor: USDA NRCS, Conservation Innovation Grant program. \$73,993. 2014-2016
- Continuation of Economic Viability of Woody Bioenergy Crops as a Potential Mine Reclamation Procedure: An undergraduate research proposal. co-PI with G. Amacher. Sponsor: Powell River Project. \$3700 for data collection of bioenergy plots using undergraduate researchers. 2014-2015.
- Supplement to the Prevalence and Operational Feasibility of Utilizing Pre-Commercially Thinned Pine as a Woody Biomass Source. co-PI with C. Bolding and S. Barrett. Sponsor: Virginia Department of Forestry. \$12,250. 2013-2015.
- Prevalence and Operational Feasibility of Utilizing Pre-Commercially Thinned Pine as a Woody Biomass Source. co-PI with C. Bolding and S. Barrett. Sponsor: Virginia Department of Forestry. \$20,000. 2012-2014.
- Inclusive Excellence in Forestry Graduate Programs at Virginia Tech. co-PI with C. Copenheaver (PI), V. Thomas, and C. Bolding. Sponsor: USDA Food and Agricultural Sciences National Needs Graduate Fellowship Grants Program. \$256,500. 2011-2015.
- Financial Viability of Southern Pine Beetle Prevention Measures in an Emerging Bio-energy Market. co-PI with G. Amacher. Sponsor: Virginia Department of Forestry. \$60,000, 2009-2011
- A Homeowner Model to Evaluate Incentives for Fire and Pest Prevention in Risk Prone

Communities. co-PI with G. Amacher. Sponsor: USDA Forest Service. \$35,000, 2009-2010

- Restoring Sustainable Forests on Appalachian Mined Lands for Wood Products, Renewable Energy, Carbon Sequestration, and Other Ecosystem Services. co-PI with J. Burger, T. R. Fox, G. S. Amacher, C. Zipper, and J. Galbraith. Sponsor: U.S. Department of Energy. \$494,400. 2002-2006
- Reservation prices, land conversion, and carbon sequestration. co-PI with G.S. Amacher. Sponsor: USDA Economic Research Service. \$26,000. 2000-2001
- Land Parcelization, Expectations, Reservation Prices, and Nonindustrial Landowner Participation in Timber and Land Market Sales: Evidence from Virginia and Mississippi. co-PI with G. Amacher. Sponsor: USDA Forest Service - Southern Forest Resource Assessment Consortium. \$60,000. 1999-2001
- The Forest Bank: Concept to Reality. co-PI with G. Amacher, T. Hall, B. Hull, J. Johnson, and R. Wynne. Sponsor: USDA Fund for Rural America. \$448,275. 1998-2000
- Differences Between Nonindustrial and Industrial Landowner Behavior in Hardwood and Pine Regions of Virginia: Implications for Timber Supply. co-PI with G. Amacher, and J. Scrivani and R. Liu with the Virginia Department of Forestry. Sponsor: USDA Forest Service, Southern Forest Resource Assessment Consortium (SOFAC). \$16,000. 1997-1998
- Effect of Population Trends and Landowner Characteristics on the Virginia Forest Sector. co-PI with G. Amacher, and J. Scrivani and R. Liu with the Virginia Department of Forestry. Sponsor: USDA Forest Service, Southern Forest Resource Assessment Consortium (SOFAC). \$11,000. 1997-1998
- Benefits and Costs of Bottomland Hardwood Reforestation in the Mississippi Alluvial Plain. co-PI with G. Amacher and M. Aust, and L. Shabman in the Department of Agricultural and Applied Economics. Sponsors: Environmental Protection Agency and Business Council for Sustainable Development of the Gulf. \$58,100. 1996-1997
- Economic Impacts of the Blue Ridge Parkway. Sponsors: Coalition for the Blue Ridge and National Park Service. co-PI with Dr. Gene Brothers at North Carolina State University. Sponsors: Coalition for the Blue Ridge and National Park Service. \$12,500. 1995-1996
- Using IMPLAN to Develop Applied General Equilibrium Models. PI. Sponsor: USDA Forest Service. \$42,000. 1994-1998
- Preparation of a Comprehensive Natural Resource Management Plan for Indian Head Naval Surface Weapons Center. co-PI with P. Bolstad, and R. Giles in the Department of Fisheries and Wildlife Sciences. Sponsor: US Navy. \$46,500. 1994-1996
- Forest Resource Management Plan for the White Oak Detachment. co-PI with Paul Bolstad. Sponsor: US Navy. \$24,850. 1994

Development of a Geographic Information System Database for the Indian Head Naval Surface

Warfare Center, Indian Head, MD. co-PI with P. Bolstad. Sponsor: U.S. Navy. \$60,000. 1993-1995

- Modeling Multiple Resource Values for the Southern Appalachian Spruce-Fir Forest. co-PI with S. Zedaker, G. Buhyoff, and T. Gregoire, and N. Nicholas with Tennessee Valley Authority. Sponsor: USDA Forest Service Southern Global Climate Change Program. \$40,000. 1992-1994
- Shenandoah National Park: Economic Impacts and Perceptions of the Park Environment. co-PI with Daniel R. Williams. Sponsor: USDI National Park Service. \$30,000. 1991-1993
- Preparation of a Comprehensive Natural Resources Management Plan for the Naval Surface Warfare Center, Dahlgren, VA. co-PI with O. Hall, J. Smith, R. Oderwald, and J. Johnson. Sponsor: US Navy. \$60,000. 1991-1993
- Distributional Economic Impacts of Civil War Battlefield Preservation Options. PI. Sponsor: USDI National Park Service. \$25,000. 1990-1991
- Economic Contributions from National Park Service Operations in the Commonwealth of Virginia. co-PI with M. Hite in the Department of Fisheries and Wildlife Sciences. Sponsor: USDI National Park Service. \$98,069. 1990-1993
- Optimizing Silvicultural Investment Decisions. co-PI with W. Leuschner. Sponsor: S.D. Warren Company (subsidiary of Scott Paper Co., Inc. \$30,000. 1990-1991.

### **Educational Grants**

Enhancing Student Success in the College of Forestry and Wildlife: Rapid Identification of "At Risk" Students and Intervention Strategies, Virginia Tech Enhancing Student Success Program, co-PI with J. Seiler, and R. Kirkpatrick in Dept. of Fisheries and Wildlife Sciences. \$7,500. 1996-1997

## **Graduate Student Theses Directed**

Mame Sokhna Sarr. 2017. Morphological and Physiological Responses of Senegalia senegal (L.) Britton Provenances to Drought, Salinity, and Fertility. Doctor of Philosophy, Virginia Tech. (co-chair)

<u>recent employment</u>: Centre National de Recherche Forestière of Institut Sénégalais de Recherche Agricole, Dakar 2312, Senegal

Nathan Hanzelka. 2015. The prevalence and operational feasibility of utilizing precommercially thinned pine as a woody biomass energy source. Masters of Science, Virginia Tech, 70p. (co-chair) <u>recent employment</u>: Planning Analyst, Hancock Forest Management, Charlotte, NC

Ying Xu. 2014. Three essays on forestry economics and management. Doctor of Philosophy, Virginia Tech, 116p. (co-chair)

<u>recent employment</u>: post-doc, Dept of Agricultural Economics and Agribusiness, University of Arkansas, Fayetteville, AR

- Maura Leveroos. 2013. Economic Viability of Woody Bioenergy Planting for Surface Mine Reclamation. Masters of Science, Virginia Tech, 95p. recent employment: Bioenergy Analyst, Seattle City Light, Seattle, WA
- Adam Watson. 2011. Cost share payment and willingness to participate in Virginia's Pine Bark Beetle Prevention Program. Masters of Science, Virginia Tech, 83p. recent employment: Associate Timberland Appraiser, TerraSource Valuation, Charlotte, NC
- Katherine Baker. 2008. Costs of Reclamation on Southern Appalachian Coal Mines: A costeffectiveness analysis for reforestation versus hayland/pasture reclamation. Masters of Science, Virginia Tech, 103p.

recent employment: Biologist, Virginia Dept of Game and Inland Fisheries, Amelia County, VA

- Curt Hensyl. 2005. Impacts of Land and Ownership Characteristics on the Stumpage Prices on Virginia's Nonindustrial Forests. Masters of Science, Virginia Tech, 100p. <u>recent employment</u>: Land Sales Team Manager, Raydient Inc. (REIT subsidiary of Rayonier Inc.), Fernandina, FL
- Jonathan Aggett. 2003. Financial Analysis of Restoring Sustainable Forests on Appalachian Mined Lands for Wood Products, Renewable Energy, Carbon Sequestration, and Other Ecosystem Services. Masters of Science, Hosner Scholarship Award, Virginia Tech, 201p. recent employment: Senior Staff-Portfolio Manager, Hancock Timber Resources Group, Boston, MA
- Rocky Goodnow. 2002. Effects of Ice Damage on Management Decisions for Loblolly Pine Plantations Located in the Piedmont Region of Virginia. Masters of Science, Virginia Tech.

<u>recent employment</u>: Vice President of the North American Timber Service, Forest Economic Advisors LLC, Boston, MA

- Dylan H. Jenkins. 1996. Modeling Forest Protection Values for the Southern Appalachian Spruce-Fir Forest. Masters of Science, Virginia Tech, 117p. recent employment: Vice President of Portfolio Development, FiniteCarbon, Wayne, PA
- Kevin L. Gericke. 1993. Multiple Destination Trips and the Economic Valuation of Outdoor Recreation Sites. Doctor of Philosophy, Dann Fellowship Award Recipient, Virginia Tech, 137p.
  - <u>recent employment</u>: Professor of Economics, West Kentucky Community and Technical College, Paducah, KY
- Gary W. Miller. 1993. Prescribing Optimal Harvests in Forests Containing Even-aged and Uneven-aged Stands. Doctor of Philosophy, Virginia Tech, 111p. recent employment: Research Forester, Ecology and Management of Invasive Species and

Forest Ecosystems Research Unit, USDA Forest Service, Morgantown, WV

Eric S. Cox. 1993. Comparing Spatial and Non-Spatial Harvest Scheduling Methods on the Naval Surface Weapons Center. Masters of Science, Virginia Tech, 130p. recent employment: Forest Planning Analyst, F&W Forestry Services, Inc., Charleston, SC

Kris M. Reyner. 1991. Development of a Prototype Model for Optimizing Silvicultural Investment on a Diverse Forest Ownership in Central Maine. Masters of Science, Virginia Tech, 86p.

recent employment: Senior Planning Analyst, Hancock Natural Resource Group, Charlotte, NC

- Daniel G. Johnson. 1991. Distributional Economic Impacts of Civil War Battlefield Preservation Options. Masters of Science, Virginia Tech, 81p. recent employment: State Senator, State of Idaho
- Kevin L. Gericke. 1990. Public Participation in National Forest Planning. Masters of Science, Virginia Tech, 85p.

## **Undergraduate Student Theses Directed**

Jared Wayman. 1998. Effects of Croptyping According to Age Class Aggregation Levels on Harvest Scheduling in a Slash Pine Forest in Northern Florida. School of Forestry, University of Canterbury, Christchurch, New Zealand, 40p.

## Teaching

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	Semester	Course Number and Title	<u>Hours</u>	Enroll.	Eval.
	Fall 2015	FOR 4424 Forest Resource Econ & Mgt	3	24	6.0/6
	Fall 2015	FOR 4334 Agroforestry**	3	13	
	Spring 2015	FOR 4444 Integrated Res. Mgt. Practicum	3	9	6.0/6
	Spring 2015	FOR 2414 Field Exp. in Forest Resources*	2	28	
	Fall 2014	FOR 4424 Forest Resource Econ & Mgt	3	17	5.8/6
	Fall 2014	FOR 4334 Agroforestry**	3	15	
	Spring 2014	FOR 4444 Integrated Res. Mgt. Practicum	3	14	5.50/6
	Spring 2014	FOR 5416 Adv. For. Res. Mgt and Econ.	3	7	5.80/6
	Spring 2014	FOR 2414 Field Exp. in Forest Resources*	2	22	
	Fall 2013	FOR 4424 Forest Resource Econ & Mgt	3	17	5.44/6
	Fall 2013	FOR 4334 Agroforestry**	3	17	
	Spring 2013	FOR 4444 Integrated Res. Mgt Practicum	3	9	5.86/6
	Spring 2013	FOR 2414 Field Exp. in Forest Resources*	2	16	
	Fall 2012	FOR 4424 Forest Resource Econ. and Mgt.	3	16	5.71/6
	Fall 2012	FOR 4334 Agroforestry**	3	11	
	Spring 2012	FOR 5416 Adv. Forest Mgt and Economics	3	8	5.8/6
	Spring 2012	FOR 4444 Integrated Res. Mgt Practicum	3	12	5.57/6
	Spring 2012	FOR 2414 Field Exp. in Forest Resources*	2	23	
	Fall 2011	FOR 4424 Forest Resource Econ. and Mgt.	3	15	5.55/6
	Fall 2011	FOR 4334 Agroforestry**	3	20	
	Spring 2011	FOR 4444 Integrated Res. Mgt Practicum	3	19	3.9/4
	Spring 2011	FOR 2414 Field Exp. in Forest Resources*	2	14	
		-			

recent employment: Professor of Economics, West Kentucky Community and Technical College, Paducah, KY

Fall 2010	FOR 4424 Forest Resource Econ. and Mgt.	3	20	3.8/4
Fall 2010	FOR 4334 Agroforestry**	3	16	
Spring 2010	FOR 4444 Integrated Res. Mgt Practicum	3	13	3.9/4
Spring 2010	FOR 2984 Field Exp. in Forest Resources*	2	24	
Fall 2009	FOR 4424 Forest Resource Management	3	9	3.9/4
Fall 2009	FOR 4334 Agroforestry**	3	17	
Spring 2009	FOR 4444 Integrated Res. Mgt Practicum	3	21	3.8/4
Spring 2009	FOR 3434 Forest Economics Field Lab	1	12	
Spring 2009	FOR 5416 Adv. Forest Mgt and Economics	3	5	4.0/4
Fall 2008	FOR 4424 Forest Resource Management	3	21	3.8/4
Fall 2008	FOR 4334 Temperate Agroforestry**	3	8	
Spring 2008	FOR 4444 Integrated Res. Mgt Practicum	3	17	3.9/4
Spring 2008	FOR 3434 Forest Economics Field Lab	1	25	
Fall 2007	FOR 4424 Forest Resource Management	3	17	3.8/4
Fall 2007	FOR 4334 Temperate Agroforestry**	3	11	
Spring 2007	FOR 4444 Integrated Res. Mgt Practicum	3	19	
Spring 2007	FOR 3434 Forest Economics Field Lab	1	23	
Spring 2007	FOR 5416 Adv. Forest Mgt and Economics	3	5	
Fall 2006	FOR 4424 Forest Resource Management	3	23	4.0/4
Spring 2006	FOR 4444 Integrated Res. Mgt Practicum	3	30	3.7/4
Spring 2006	FOR 3434 Forest Economics Field Lab	1	22	
Spring 2006	FOR 5416 Adv. Forest Mgt and Economics	3	4	4.0/4
Fall 2005	FOR 4424 Forest Resource Management	3	25	3.8/4
Spring 2005	FOR 4444 Integrated Res. Mgt Practicum	3	40	3.6/4
Spring 2005	FOR 3434 Forest Economics Field Lab	1	22	
Fall 2004	FOR 4424 Forest Resource Management	3	24	3.8/4
Spring 2004	FOR 4444 Integrated Res. Mgt Practicum	3	40	3.7/4
Spring 2004	FOR 3434 Forest Economics Field Lab	1	31	
Fall 2003	FOR 4424 Forest Resource Management	3	22	3.9/4
Fall 2003	FOR 5416 Adv. Forest Mgt and Economics	3	11	4.0/4
Spring 2003	FOR 4444 Integrated Res. Mgt Practicum	3	47	3.6/4
Spring 2003	FOR 3434 Forest Economics Field Lab	1	31	
Fall 2002	FOR 4424 Forest Resource Management	3	22	3.8/4
Spring 2002	FOR 4444 Integrated Res. Mgt Practicum	3	56	3.7/4
Spring 2002 Spring 2002	FOR 3434 Forest Economics Field Lab	1	32	
Fall 2001	FOR 4424 Forest Resource Management	3	19	3.7/4
Fall 2001	FOR 5416 Adv. Forest Mgt and Economics	3	8	3.8/4
Spring 2001	FOR 4444 Integrated Res. Mgt Practicum	3	54	3.7/4
Spring 2001	FOR 3434 Forest Economics Field Lab	1	37	
Fall 2000	FOR 4424 Forest Resource Management	3	44	3.8/4
Spring 2000	FOR 4444 Integrated Res. Mgt Practicum	3	56	3.8/4
Spring 2000	FOR 3434 Forest Economics Field Lab	1	49	3.8/4
Fall 1999	FOR 4424 Forest Resource Management	3	33	3.9/4 3.9/4
Fall 1999	0	3	6	3.8/4
	FOR 5416 Adv. Forest Mgt and Economics FOR 4444 Integrated Res. Mgt Practicum	3	52	3.8/4 3.7/4
Spring 1999 Spring 1999	FOR 3434 Forest Economics Field Lab	5 1	52 52	5.7/4
Spring 1999 Fall 1998		3	32 41	3.8/4
Spring 1998	FOR 4424 Forest Resource Management FOR 3434 Forest Economics Field Lab	5 1	41 41	3.6/4 3.6/4
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.2/4

\*teach a 3 or 4 day forest carbon inventory field lab module

\*\*teach 1 week (lectures/lab) agroforestry economics module

#### **Other Instruction**

Instructor, Lands for Tomorrow Conference, Investing in Crops and Trees session. Basics of Natural Resource Economics, session attended by agency personnel from Virginia and NC, Longwood University, Farmville, VA June 29, 2011

Instructor, Operations Research Methods for Ecosystem Management. 1993. USDA Forest Service, Decision Support Institute for Ecosystem Management -- 2 week short course held at Colorado State University for US Forest Service planning personnel from around the country.

Instructor, Methods for Evaluating Park Economic Impacts. 1992. USDI National Park Service, Social Science Short Course and Research Needs Assessment, April 22-24, 1992, Blacksburg, VA Instructor, Economic Contributions of National Parks. 1991. USDI National Park Service, Social Science for Superintendents Training Course, May 7-9, 1991, Albright Training Center, Grand Canyon, Arizona

## Reviewing

#### Manuscript reviews (journals)

Agricultural and Resource Economics Review Agroforestry Systems Journal Canadian Journal of Forest Research Ecological Applications Forest Ecology and Management Forest Science International Journal of Forecasting International Journal of Wildland Fire Journal of Forest Economics Journal of Forest Policy and Economics Journal of Forestry Journal of Festival Management and Event Tourism Leisure Sciences Natural Resources Modeling Northern Journal of Applied Forestry Society and Natural Resources Southern Journal of Applied Forestry

### **Associate Editorships**

*Forest Science/Southern Journal of Applied Forestry*, August 2012-present *Forest Science*, March 2001-March 2004 *Journal of Forestry*, January 1997-August 2001 Guest Associate Editor, *Forest Science*, 1989-94, 2000-2001, 2005

### **Other Reviews/Advisory Roles**

Appalachian Regional Reforestation Initiative Science Board Review of University of Virginia, Weldon Cooper Center, Value of Virginia's Forests Review of USDA Forest Service, Northern Region, Scheduling of Vegetation Management Activities in Forest Plan Revisions National Science Foundation proposal reviews Review of Virginia Timber Supply Assessment, Virginia Department of Forestry Review of Sierra Nevada Ecosystem Management Project/Economic Assessment for the University of California, Berkeley and USDA Forest Service Review of State of Minnesota Generic Environmental Impact Statement on Timber Harvesting for the University of Minnesota Advisor to USDI National Park Service North Atlantic Region, reviewed economic impact analysis efforts of Minuteman National Historical Park Advisor to USDA Forest Service Region 8, region-wide economic impact analysis efforts Advisor to USDA Forest Service Region 8, timber demand analysis efforts Economic impact modeling of northern spotted owl preservation options in northern California, University of California and Mason, Bruce and Girard of Portland, OR

Book review of A. Rose, B. Stevens and G. Davis. 1988. <u>Natural Resource Policy and Income</u> <u>Distribution</u>. *Forest Science*, 34(3):820-821.

#### External reviewer of dossiers for promotion to full or associate professor

Auburn University Michigan State University Michigan Tech Ohio State University Oregon State University State University of New York, ESF University of California, Berkeley University of Georgia

## **Other Selected Leadership Development Opportunities**

New Academic Leaders Workshop series, Fall 2015 (26+ hours of workshops)

- Principal author of our Society of American Forestry Accreditation Self-Evaluation document, 2015
- Principal author of FREC Academic Quality and Improvement (AQI) assessment document for Virginia Tech, 2015
- Oversight of the development of management plans for approximately 115 private (family) forestland owners, NGOs, and public agency land managers in FOR 4444 Integrated Forest Management Practicum, 1999-present

#### **Committee chair**

Undergraduate Affairs Committee, FREC, 1993/94, 1996/97, 2000/01, 2006/07, 2014/15 Promotion and Tenure Committee, FREC, 2005/06, 2012/13 University Commission on Undergraduate Studies and Policies, VT, 1999/00 University Committee on Undergraduate Curricula, VT, 1998/99 Search Committee for Applied Forest Ecology position, FREC, 2013/14

#### **Committee membership**

Undergraduate Affairs Committee, FREC (20 years) Promotion and Tenure Committee, FREC (17 years) Student Policy and Affairs Committee, CNRE (6 years) Promotion and Tenure Committee, CNRE, (4 years) Graduate and Research Committee, CNRE (3 years) University Commission on Undergraduate Studies and Policies, VT (3 years) University Committee on Undergraduate Curricula, VT (3 years) University Committee on Academic Support, VT (3 years) University Graduate Curriculum Committee, VT (2 years) Budget and Planning Committee, School of Forestry and Wildlife (1 year) Search Committee for Natural Resources Recreation faculty position, FREC, 2010 Search Committee for Associate Dean of Academics, CNRE, 2010 Search Committee for Department Head, FREC, 2007/08 Search Committee for Forest Policy faculty position, FREC, 2007/08 Search Committee for Forest Management Outreach position, FREC, 2006/07 Search Committee for Forest Policy faculty position, FREC, 2001

Department Head Evaluation Committee, FREC, 2000 Search Committee for Silviculture faculty position, FREC, 1999/00 Search Committee for Industrial Forestry Operations faculty position, FREC, 1998/99 Search Committee for Geographic Information Systems faculty position, FREC, 1995/96 Search Committee for Management/Economics faculty position, FREC, 1992/93 Search Committee for Department Head, FREC, 1992/93 6 additional ad hoc committees to revise curricula, FREC