

## ***RECENT PRESENTATIONS***

### **2007**

- Walsh, S.J., J.P. Tuttle, A.L. McCleary, and L. Brewington.** 2007. Preliminary Assessments: Invasive Plants on Sierra Negra and Vegetation Recovery on Volcan Alcedo. Presentation by S.J. Walsh, J.P. Tuttle, and L. Brewington to scientists and staff of the Charles Darwin Research Station and the Galápagos National Park Service, June 8, 2007 in the Galápagos Islands.
- Polo, P.E.** 2007. Inputs, Drivers and Models of Land Use/Land Cover Change in the Northern Ecuadorian Amazon. Poster presentation by P.E. Polo at the Annual Meeting of the Association of American Geographers (AAG), April 2007 in San Francisco, CA.
- Tuttle, J.P.** 2007 A Graph-Theoretical Perspective on Plant Invasion and Land Use. Poster presentation by J.P. Tuttle at the Annual Meeting of the Association of American Geographers (AAG), April 2007 in San Francisco, CA.

### **2006**

- Erlie, C.M.** 2006. Historical Data Integration and Analysis: Toward a Multi-temporal Analysis of Population Growth and Land Cover Change in the Northern Ecuadorian Amazon. Presented at the annual Association of American Geographers (AAG) meeting, March 7-11, 2006 in Chicago, IL.
- Mena, C.F., S.J. Walsh, R.E. Bilsborrow, and C.M. Erlie.** 2006. Land Use Land Cover Trajectories in the Northern Ecuadorian Amazon: Drivers, Feedbacks, Uncertainties, and Spatial Simulations. Poster presentation at the NASA LCLUC Science Team Meeting, April 11-13, 2006 in College Park, MD.
- Taff, G.N.** 2006. LU/LC change and competing stakeholder interests in the 'natural' and cultural landscapes of a post-Soviet national park, colloquium presentation given, Oklahoma University – Geography Department, March 27, 2006.
- Taff, G.N.** 2006. Landscover Changes in Gauja National Park, Latvia: Effects on the Preservation of Biodiversity and the Cultural Landscape, presentation given at the annual meeting of the Association of American Geographers, Chicago, IL, March 9, 2006.
- Taff, G.N.** 2006. Post-Soviet Land Cover/Land Use Dynamics in Gauja National Park, Latvia, poster presented at Northern Eurasia Earth Science Partnership Initiative Science Team Meeting, IIASA, Laxenburg, Austria, February 22 – 24, 2006.
- Taff, G.N.** 2006. Protecting 'Natural' and Cultural Landscapes: Analyzing Competing Stakeholder Interests in Post-Soviet Latvia's Gauja National Park, colloquium presentation given, Cornell University – Department of City and Regional Planning, February 16, 2006.
- Tuttle, J.P., L. Kramer, and M. Elliott.** 2006. Georgia Presettlement Forest Composition and Species-Site Relationships. Paper presented at the Annual Conference of the Association of American Geographers, Chicago, IL.
- Walsh, S.J., R.E. Bilsborrow, C.F. Mena, C.M. Erlie, J.P. Tuttle, and A.N. McCleary.** 2006. Modeling the Scale Dependent Drivers of LCLU Dynamics

- in Northeastern Ecuador: Simulating Patterns of Landscape Change and Assessing their Cause and Consequence through Multi-Level Models and Cellular Automata. Poster presentation at the NASA LCLUC Science Team Meeting, April 11-13, 2006 in College Park, MD.
- Walsh, S.J., R.E. Bilsborrow, C.F. Mena, C.M. Erlien, B.G. Frizzelle, Y. Xiaozheng, A. McCleary, J.P. Tuttle, P. Polo, L. Brewington, J.P. Messina, G. Medina, G.P. Malanson.** 2006. Pattern-Process Relations in Coupled Human-Natural Systems: Modeling LULC Dynamics in the Ecuadorian Amazon. Presentation at the LBA-ECO 10th Science Team Meeting, October 4-6, 2006 in Brasilia, Brazil.
- Weiss, D.J., S.J. Walsh, and J.P. Tuttle.** (2006). Development of an alpine treeline ecotone typology based on the vegetation patterns of Glacier National Park, Montana. Association of American Geographers annual meeting. Chicago, Illinois, March 7-11, 2006.

## **2005**

- Erlien, C.M., C.F. Mena, A.F. Barbieri, and S.J. Walsh.** Demography, Socioeconomics, and Geography: Endeavoring to Explain Land Cover Change in and around the Cuyabeno Wildlife Reserve, Ecuador 1986-2002. Poster presentation to the Population Association of America annual meeting in Philadelphia, PA March 31-April 2, 2005.
- Erlien, C.M., C.F. Mena, F.L. Holt, and S.J. Walsh.** 2005. Deforestation in Indigenous Communities of the Northern Ecuadorian Amazon. Presented at the 2005 annual meeting of the Association of American Geographers, April 5-9, 2005 in Denver, CO.
- Frizzelle, B.G., S.J. Walsh, C.F. Mena, C.M. Erlien.** 2005. Land Use Change Patterns of Colonists and Indigenous Groups in the Northern Ecuadorian Amazon: A Comparison of Landsat TM Spectral and Spatial Analyses. Presented at annual meeting of the American Society for Photogrammetry and Remote Sensing (ASPRS), March 7-11, 2005 in Baltimore, MD.
- Mena, C.F., C.M. Erlien, and S.J. Walsh.** 2005. Development and Land Use/Cover Change in the Cuyabeno Wildlife Reserve. Presented at the 2005 annual meeting of the Association of American Geographers, April 5-9, 2005 in Denver, CO.
- Mena, C.F., Walsh S.J.** Demographic, Socioeconomic, and Biophysical Factors Affecting Land Use and Land Cover Change in the Northern Ecuadorian Amazon: Drivers, Statistical and Spatial Explicit Models. Presented at the XXV Conference of the International Union for the Scientific Study of the Population. Tours, France. July 18-23, 2005.
- Mena C.F., Walsh S.J.** Deforestation and Secondary Forest Succession in the Northern Ecuadorian Amazon: Rates, Drivers, and Spatial Explicit Models. Poster presented at the First Symposium for the Earth System Scholars Network. Adelphi, MD
- Shao, Y., and S.J. Walsh.** 2005. Assessing the Spectral, Spatial, and Demographic Characteristics of Rural Migrants in Bangkok, Thailand. Association of American Geographers, Denver.

- Taff, G.N.** 2005. Implications of Latvia's Post-Soviet Independence and Land Reform on Land Use/Cover Dynamics in Gauja National Park, UNC – Geography weekly colloquium series, December 2, 2005.
- Taff, G.N., and Walsh, S.J.** 2005. Social and Ecological Significance of Land Privatization and Restitution on Land Use/Land Cover Change Patterns in Post-Soviet Union Gauja National Park, Latvia, presentation given at the Annual Meeting of the Human Dimensions of Global Environmental Change Research Community in Bonn, Germany in October, 2005.
- Taff, G.N.** 2005. Landscape Changes Reflecting Local and Global Environmental Values in Gauja National Park, Latvia, presentation given at the annual meeting of the Association of American Geographers in April, 2005.
- Walsh, S.J.** 2005. Modeling Approaches for Linking People, Place, and Environment in the Northeastern Ecuadorian Amazon. NASA, Land Cover/Land Use Change Science Team Meeting, College Park, Maryland.
- Walsh, S.J., Entwisle, B., Rindfuss, R.R., Page, P.H.** 2005. A Cellular Automata Approach to Land Use Change Modeling in Northeastern Thailand. *GIS Planet 2005*, International Conference and Exhibition on Geographic Information, Estoril Congress Center, Portugal.
- Walsh, S.J., W.K.Y. Pan, C.M. Erlien, and C.F. Mena.** 2005. Land Fragmentation and Change Patterns as Descriptors of Deforestation in the Ecuadorian Amazon Frontier. Presented at the 2005 annual meeting of the Association of American Geographers, April 5-9, 2005 in Denver, CO.
- Weiss, D.J., S.A. McKnight, S.J. Walsh.** 2005. A Multivariate Analysis of Turf-Bank Terraces in Glacier National Park, Montana, USA. Association of American Geographers, Denver.

#### **2004**

- Erlien, C.M.** 2004. Distance Effects on Birth Control and Location of Birth in the Ecuadorian Oriente.. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.
- Malanson, G.P., Y. Zeng, and S.J. Walsh.** Frontiers as Frontiers. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.
- Mena, C.F. and S.J. Walsh.** Demographic and Socioeconomic Drivers of Forest Succession in the Northern Ecuadorian Amazon. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.
- Shao, Y., and S.J. Walsh.** 2004. Characterizing the Land Use and Land Cover Change in Nang Rong, Thailand. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.
- Pan, W.K. and C. Erlien.** 2004. Impact of population-environment dynamics on human health in the Ecuadorian Amazon. Presented at the American Public Health Association meeting in Washington, D.C. November 6-10, 2004.

- Walsh, S.J.** Approaches and Challenges for Characterizing Landscape Dynamics in Coupled Human-Natural Systems. Presented in the Taaffe Colloquium Series, Department of Geography, Ohio State University.
- Walsh, S.J.** Linking People & Environment through Studies of Deforestation in the Ecuadorian Amazon. Presented at Explore Carolina, University of North Carolina at Chapel Hill.
- Walsh, S.J.** Linking People and Place: Assessing Pattern and Meaning Through Spatial Digital Technologies. Presented at the School of Social Work, University of North Carolina at Chapel Hill.
- Walsh, S.J.** LCLUC in Thailand & Ecuador: Pattern-Process Relations & Some Research Challenges. Presented as a Keynote Research Results Presentation at the Land Cover/Land Use Change Science Meeting: Significant Results Meeting. National Aeronautics and Space Administration, College Park, Maryland.
- Walsh, S.J., R.E. Bilsborrow, J.P. Messina, G.P. Malanson, C.F. Mena, C.M. Erlien.** 2004. Pattern-Process Relationships of Land Use/Land Cover Dynamics in the Ecuadorian Amazon. International Geographical Union, Glasgow, Scotland, UK.
- Walsh, S.J., C. Mena, and J.P. Messina.** Complexity in the Ecuadorian Amazon Frontier: Influence of Urbanization and Landscape Pattern on LULC Dynamics. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.
- Weiss, D.J., S.J. Walsh, E.S. Hammer, G.P. Malanson, and D.R. Butler.** 2004. An Assessment of snow avalanche paths using Ikonos satellite data and LAI field data. Association of American Geographers annual meeting. Philadelphia, Pennsylvania, March 14-19, 2004.
- Zeng, Y., G.P. Malanson, and S.J. Walsh.** Searching for Complexity on Landscapes. Presented at the 100th Annual Meeting of the Association of American Geographers (AAG). Philadelphia, Pennsylvania. March 14-19, 2004.

### **2003**

- Barbieri, A.F., Mena, C.F., Erlien, C.M., Bilsborrow, R., and Torres, B.** 2003. Settler Welfare and Land Cover Change in the Ecuadorian Amazon Communities. Presented at the 2003 Open Meeting of the Human Dimensions of Global Environmental Change Research Community. Montreal, Canada. October 16-18, 2003.
- Barbieri, A.F., R.E. Bilsborrow, C. Mena, W. Pan, and B. Torres.** Analyzing Changes in LULC Over Time in the Ecuadorian Amazon Based on Longitudinal Survey Data. Presented at the 99th Annual Meeting of the Association of American Geographers (AAG). New Orleans, Louisiana. March 4-7, 2003.
- Butler, D.R., G.P. Malanson, S.J. Walsh, B. Reardon, and D.B. Fagre,** 2003. *Tree-Ring Dating of High Magnitude Snow-Avalanche Winters and their Relationship with Snow-Water Equivalence (SWE)*. Association of American Geographers (AAG) 99th Annual Meeting. March 5-8. New Orleans, LA.

- Entwisle, B., J. Edmeades, R.R. Rindfuss, and S.J. Walsh**, 2003. *Dynamics of Village Settlement in a Frontier Region: Nang Rong, Thailand*. Presented at Population Association of America (PAA) Annual Meeting. May 1-3. Minneapolis, MN.
- Frizzelle, B.G., S.J. Walsh, C.M. Erlien, and C.F. Mena**, 2003. *Establishing Control in a Frontier Environment: The Case of the Ecuadorian Amazon*. Presented at the American Society for Photogrammetry & Remote Sensing (ASPRS) Annual Conference. May 5-9. Anchorage, AK.
- Frizzelle, B.G., S.J. Walsh, C.M. Erlien, C.F. Mena, and F.D. Baquero**, 2003. *Establishing Remote Sensing Control in a Frontier Environment: The Case of the Ecuadorian Amazon*. Presented at the American Society for Photogrammetry & Remote Sensing (ASPRS) Annual Conference. May 5-9. Anchorage, AK.
- Malanson, G.P., S.J. Walsh, D.R. Butler, B. Reardon, D.B. Fagre, and S. McKnight**, 2003. *Effects of Avalanches on Local Carbon Budgets and Regional Forest Dynamics*. Association of American Geographers (AAG) 99<sup>th</sup> Annual Meeting. March 5-8. New Orleans, LA.
- Mena, C.F., C.M. Erlien, and S.J. Walsh**, 2003. *Modeling the Scale Dependent Drivers of LCLU Dynamics in Northeastern Ecuador*. Association of American Geographers (AAG) 99<sup>th</sup> Annual Meeting. March 5-8. New Orleans, LA.
- Taff, G.N.** 2003. How has Land Reform in Latvia's Gauja National Park Served Justice? Landscape, Law, and Justice Conference, Oslo, Norway, June 2003.
- Walsh, S.J., L. Bian, S. McKnight, E.S. Hammer, and C.M. Erlien**, 2003. *Characterizing the Spatial Pattern of Solifluction Steps and Risers in an Alpine Environment: Application of Digital Image Enhancements and Geostatistics*. Presented at the American Society for Photogrammetry & Remote Sensing (ASPRS) Annual Conference. May 5-9. Anchorage, AK.
- Walsh, S.J.**, 2003. *Biocomplexity and Geographers—How Can Geographers Be Leaders in the NSF Biocomplexity in the Environment Program?* (Panelist). Association of American Geographers (AAG) 99<sup>th</sup> Annual Meeting. March 5-8. New Orleans, LA.

## 2002

- Erlien, C.M.** 2002. *Neural Networks: Identifying Clouds in Remote Sensing Imagery*. Southeastern Division of the Association of American Geographers (SEDAAG) 57<sup>th</sup> Annual Meeting. November 23-26. Richmond, VA.
- Mena, C.F.** 2002. *Deforestation in the Napo Region: Socioeconomic Factors, Spatial Patterns, and Metrics*. Southeastern Division of the Association of American Geographers (SEDAAG) 57<sup>th</sup> Annual Meeting. November 23-26. Richmond, VA.
- Malanson, G.P., J.P. Messina, S.J. Walsh, R.R. Rinfuss, and B. Entwisle**, 2002. *Linking Households and Parcels in Models of Land-Use Change*. International Association for Landscape Ecology—US Regional Association (US-IALE) 17<sup>th</sup> Annual Symposium. April 23-27. Lincoln, NE.
- Pullen, R.E., and K. Rojnkureesatien**, 2002. *Analyzing Land-Use/Land-Cover in Northeast Thailand: The Indivisibility of Physical and Social Domains*.

- Association of American Geographers (AAG) 98<sup>th</sup> Annual Meeting. March 19-23. Los Angeles, CA.
- Rindfuss, R.R., B. Entwisle, and S.J. Walsh**, 2002. *Simulating Complexity in a Dynamic Landscape*. in the Workshop Series "Complexity and the Environment." Carolina Environmental Program and the Law School, University of North Carolina at Chapel Hill.
- Taff, G.N., S.J. Walsh, W.F. Welsh, and F.D. Baquero**, 2002. *Satellite Images, Image Change Trajectories, and Model Simulations to Characterize LULC Fragmentation and the Drivers of Change*. Association of American Geographers (AAG) 98<sup>th</sup> Annual Meeting. March 19-23. Los Angeles, CA.
- Walsh, S.J., D.G. Brown, and L. Bian**, 2002. *Characterizing Solifluction Lobes and Terraces and their Scale Dependence in an Alpine Environment through Remote Sensing and Geostatistics*. Association of American Geographers (AAG) 98<sup>th</sup> Annual Meeting. March 19-23. Los Angeles, CA.
- Walsh, S.J.**, 2002. *Causes and Consequences of Land Use/Land Cover Dynamics: GIScience Approaches for Characterizing Population-Environment Interactions in Thailand and Ecuador*. Department of Geography, Central Michigan University.
- Walsh, S.J.**, 2002. *Land Use/Land Cover Change from Space*. University of Iowa.
- Walsh, S.J.**, 2002. *Models of the Cause and Consequence of LULC Dynamics*. Department of Geography, West Virginia University.
- Walsh, S.J.**, 2002. *Pattern and Process of LULC Change: Case Studies from Ecuador and Thailand*. Department of Geography, University of Iowa.
- Walsh, S.J.**, 2002. *Synthesis of Land Change Processes in Latin America in the Workshop "Land Use Dynamics and Comparative Case Studies"* (Invited Workshop Participant). Indiana University.
- Walsh, S.J., R.E. Bilsborrow, S.J. McGregor, B.G. Frizzelle, J.P. Messina, W.K.Y. Pan, K.A. Crews-Meyer, and G.N. Taff**, 2002. *Integration of Longitudinal Surveys, Remote Sensing Time-Series, and Spatial Analyses: Approaches for Linking People and Place in the Workshop "Linking People and the Environment."* National Science Foundation.
- Walsh, S.J., and R.R. Rindfuss**, 2002. *Bridging Perspectives and Approaches in Characterizing Land Use/Land Cover Dynamics and their Associated Drivers*. School of Natural Resources & the Environment, University of Michigan.

## 2001

- B. Entwisle, R.R. Rindfuss, and S.J. Walsh**, 2001. *Population Dynamics and Landscape Change in Nang Rong, Thailand: Some Lessons Learned*. Population Association of America (PAA) Annual Meeting. March 27-29. Washington, DC.
- S. Nash and G.N. Taff**, 2001. *Post-Structuralist Latvia: Tracing Research, Finding the Factish, and Taking a Step Towards Political Action*. Association of American Geographers (AAG) 97<sup>th</sup> Annual Meeting. February 27-March 3. New York, NY.
- R.E. Pullen**, 2001. *Linkages of Scale in Thai Land Use/Land Cover: Raster to Vector Transformation for Mapping Land Ownership Patterns*. Association of American Geographers (AAG) 97<sup>th</sup> Annual Meeting. February 27-March 3. New York, NY.

- G.N. Taff**, 2001. *National Park Management and Land Restitution in Latvia*. Association of American Geographers (AAG) 97<sup>th</sup> Annual Meeting. February 27-March 3. New York, NY.
- Walsh, S.J., J.P. Messina, K.A. Crews-Meyer, S.J. McGregor, and B.G. Frizzelle**, 2001. *Assessing Landscape Dynamics in the Ecuadorian Amazon: Application of Satellite Change-Detections and Cellular Automata Simulations*. Association of American Geographers (AAG) 97<sup>th</sup> Annual Meeting. February 27-March 3. New York, NY.
- R.E. Bilsborrow, W.K.T. Pan, S.J. Walsh, and K.A. Crews-Meyer**, 2001. *Change Patterns of Population and Land Use in Ecuador's Northern Amazon*. Open Meeting of the Human Dimensions of Global Environmental Change Research Community, Special Session "Contributions of the Large-Scale Biosphere Atmosphere Experiment in Amazonia Project to Understanding the Human Dimensions of Land Use and Land Cover Change." Rio de Janeiro, Brazil.
- J.P. Messina and S.J. Walsh**, 2001. *Simulating Land Use and Land Cover Dynamics in the Ecuadorian Amazon through Cellular Automata Approaches and an Integrated GIS*. Open Meeting of the Human Dimensions of Global Environmental Change Research Community, Special Session "Integrated Modeling of LULCC." Rio de Janeiro, Brazil.
- S.J. Walsh**, 2001. *GIScience for Mapping and Modeling Landscape Dynamics: Some Challenges and Opportunities*. Department of Geography, University of North Carolina at Greensboro.
- S.J. Walsh**, 2001. *Mapping and Modeling Approaches for Characterizing Population-Environment Interactions: A Geographic Information Science Perspective*. Department of Geography, University of Oklahoma.
- S.J. Walsh**, 2001. *Mapping and Modeling Approaches for Characterizing Population-Environment Interactions in Thailand and Ecuador: A Geographic Information Science Perspective*. Department of Geography, Southwest Texas State University.
- S.J. Walsh and R.E. Bilsborrow**, 2001. *Colonization in the Ecuadorian Amazon*. Population Movement and Urbanization Seminar, Carolina Population Center.
- S.J. Walsh, R.E. Bilsborrow, S.J. McGregor, J.P. Messina, K.A. Crews-Meyer, B.G. Frizzelle, and W.K.Y. Pan**, 2001. *Landscape Dynamics in the Ecuadorian Amazon: Characterizing Patterns and Processes of Deforestation and Agricultural Extensification through Space and Time Dependent Models of Change*. Open Meeting of Ecology LBA. Atlanta, GA.
- S.J. Walsh, K.A. Crews-Meyer, J.P. Messina, R.R. Rindfuss, and B. Entwisle**, 2001. *Landscape Variation in Frontier Environments: Deforestation and Agricultural Extensification in Ecuador and Thailand*. Global Change Open Science Conference "Challenges of a Changing Earth." Amsterdam, Netherlands.

## 2000

- S.J. Walsh, D.R. Butler, G.P. Malanson, K.A. Crews-Meyer, J.P. Messina, and Q. Xiao**, 2000. *Mapping, Modeling, and Visualization of Geomorphic Processes at the Alpine Treeline Ecotone, Glacier National Park, Montana, USA*. Binghamton Geomorphology Symposium. October 13-15. Binghamton, NY.

- S.J. Walsh, K.A. Crews-Meyer, and J.P. Messina**, 2000. *Plant Biomass Variation in Frontier Environments: The Case of Deforestation and Agricultural Extensification in Thailand and Ecuador*. Fourth International Conference on Integrating GIS and Environmental Modeling. September 2-8. Banff, Canada.
- J.P. Messina, S.J. Walsh, and K.A. Crews-Meyer**, 2000. *Scale Dependent Pattern Metrics and Panel Data Analysis as Applied in a Multiphase Hybrid Land Cover Classification Scheme*. American Society of Photogrammetry & Remote Sensing (ASPRS) Annual Conference. May 21-26. Washington, DC.
- W.M. Gesler, T.A. Arcury, S.J. Walsh, and J. Preisser**, 2000. *Utilization of Health Care in the Mountain Area of North Carolina*. Association of American Geographers (AAG) 96<sup>th</sup> Annual Meeting. April 4-8. Pittsburgh, PA.
- G.N. Taff and C. Head**, 2000. *An Iterative Bayesian Maximum Likelihood Method for Unsupervised Classification of Satellite Images*. Association of American Geographers (AAG) 96<sup>th</sup> Annual Meeting. April 4-8. Pittsburgh, PA.
- S.J. Walsh, E.S. Hammer, S. McKnight, and K.A. Crews-Meyer**, 2000. *Field Instrumentation and Measurement at Alpine Treeline: Integration of Spatial and Temporal Digital Technologies*. Association of American Geographers (AAG) 96<sup>th</sup> Annual Meeting. April 4-8. Pittsburgh, PA.
- J.P. Messina and S.J. Walsh**, 2000. *Analysis of Land Change Across Spatial Scales Using Geographic Techniques: A Comparison of Deforestation in Ecuador and Thailand*. Congress of the Latin America Studies Association. Miami, FL.
- G.N. Taff and R.E. Bilsborrow**, 2000. *Inequality of Landholdings in the Ecuadorian Amazon*. Congress of the Latin American Studies Association. Miami, FL.
- S.J. Walsh**, 2000. *Characterizing Dynamic Landscapes in Northeast Thailand through LULC Classification Schemes: Approaches, Challenges, and Opportunities*. International Geosphere-Biosphere Program. Ispra, Italy.
- S.J. Walsh**, 2000. *Emerging Technologies for Remote Sensing and GeoSpatial Data* in the Workshop "Moving Remote Sensing from Research to Applications: Case Studies of the Knowledge Transfer Process." National Academy of Sciences. Washington, DC.