

## **PERSONAL INFORMATION**

### **Education**

University of Illinois at Urbana-Champaign. BSAS. Architecture. 1983.

University of Illinois at Urbana-Champaign. MA. Architecture. 1997.

University of Illinois at Urbana-Champaign. Ph.D. Urban and Regional Planning. 2003.

### **Academic Positions**

2002-05. Research Assistant Professor. Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign (UIUC)

2005-10. Assistant Professor, Department of Urban and Regional Planning, UIUC

2010-16. Associate Professor, Department of Urban and Regional Planning, UIUC

2016-present. Professor, Department of Landscape Architecture, UIUC

Affiliated faculty appointments:

- Department of Urban and Regional Planning
- School of Architecture
- Department of Natural Resources and Environmental Sciences
- National Center for Supercomputing Applications (NCSA)

2004-present. Executive Director, Smart Energy Design Assistance Center (SEDAC)

1999-present. Director, LEAM Modeling Systems Laboratory

### **Professional Employment**

1983-84. Associate Architect. Bank Structures. Highland Park, IL

1984-85. Project Architect. Ruck, Pate and Associates, Architecture. Barrington, IL

1985-93. Partner/Principal Architect. Deal Associates Architects. Arlington Heights, IL

1993-02. Senior Research Architect. Construction Engineering Research Laboratory (CERL), US Army Corps of Engineers ERDC-CERL. Champaign, IL

### **Honors and Recognition**

2004. Outstanding Planning Award for a Student Project, Missouri Chapter of the American Planning Association, Conservation Design Workshop

2006. Horwood Critique Prize for Most Outstanding Paper, "A Comprehensive Urban Planning Support System," the Urban and Regional Information Systems Association (URISA)

2006. Sustainable Infrastructure Research Project of the Year, "A Dynamic Spatial Decision Support System for Sustainable Military Communities," the Strategic Environmental Research and Development Program

ULI Hines Student Urban Design Competition (faculty advisor to student teams)

2006, Honorable Mention; 2007, Finalist; 2008, Honorable Mention

2008-11. Honorary Scientist, Republic of Korea Rural Development Administration 2008.

2009 Fall. List of Teachers Ranked as Excellent by their Students

2012. J. Frederick Miller Award for distinguished volunteer service, the University YMCA

**Invited Lectures**

2000. Keynote address, Sustainable Building 2000, Maastricht, The Netherlands (October 22-25).
2002. "The Land use Evolution and Impact Assessment Model (LEAM)," US EPA Region V Watershed Modeling Workshop, Chicago, IL (April 9).
2002. "Evolving Landscapes, Urban Transformation, and Smart Growth," Invited speaker, 2002 Governors Balanced Growth Conference, Springfield, IL (August 13).
2002. "Land Use Modeling and Smart Growth," National Governors Association Policy Academy on Smart Growth, Salt Lake City, UT (November 18-19).
2003. "The Land Use Evolution and impact Assessment Model (LEAM): Applications to Hydrologic Processes," Hydrologic Seminar Series, Purdue University, West Lafayette, IN (March 27).
2003. "Land Use Change and Metro Transportation Models," Featured speaker, Midwest Transportation Planning Conference, St Louis, MO (April 15).
2003. "Sustainable Land-Use Planning: The Integration of Process and Technology," Invited Speaker, Illinois Facility Conference and Expo, Illinois State University, Normal, IL (November 5).
2004. "Land Use and Transportation Modeling" with Todd Brauer, Chicago Area Transportation Study (CATS) Modeling User Group, Chicago, IL (February 2).
2004. "Land Use Change and Transportation Modeling: a Synergy of Models," Featured speaker, Transportation Engineering Association of Missouri, St Louis, MO (March 15).
2005. "Energy and Historic Structures," IHPA Main Street Annual Conference, Rock Island, IL (April 6-7).
2005. "Energy, Sustainability, and Modeling," St. Louis Earth Day Celebration and Conference, St Louis, MO (April 22).
2005. "Assessing Multiple Futures," Workshop on Land Use and Planning, Lincoln Institute, Cambridge, MA (September 15-16).
2005. "Land Use Modeling and Water Quality: Outcomes of Analysis in Peoria, IL." 2005 Governor's Conference on the Management of the Illinois River System, Peoria, IL (October 6).
2005. "Understanding Sustainability," Featured speaker, Edison Electric Institute Users Conference and Assembly, Dallas, TX (October 18).
2006. "Tightly Coupled Land Use and Transportation Modeling: The LEAM/TransEval Experience in St Louis, MO," Featured speaker, Midwest Transportation Engineers Annual Conference, Kansas City, MO (April 6-7).
2006. "Landscape Evolution and Planning Implications," Sharing Spaces: A DOD Workshop on Encroachment, Beckman Institute, University of Illinois (April 11-12).
2006. "Land Use Modeling and Simulation," Invited lecture, Geography Colloquium, Northern Illinois University, Dekalb, IL (Sept 15).
2006. "Dynamic Spatial Modeling," Inter-University Natural Resource Consortium, Benedictine University, Lisle, IL (October 3).
2006. "Dynamic Spatial Modeling of Complex Urban Systems," National Center for Smart Growth Research and Application, University of Maryland, College Park, MD (Nov 27).
2007. "Use-Based Dynamic Modeling," Workshop on land use modeling, Lincoln Institute of

- Land Policy, Cambridge, MA (Sept 19).
2008. "The Future of Sustainable Land Use Planning," US EPA Brown to Green: Sustainable Redevelopment Workshop, Kansas State University, Manhattan, Kansas (Sept 9).
2008. "Integrating Dynamic Land Use Modeling with Transportation Planning," Featured Speaker, National Association of Regional Councils (NARC), Chicago, IL (Sept 11).
2008. "What Would Daniel Do? With Regional Dynamic Spatial Models," Featured Speaker, On the Eve of the Centennial: Daniel Burnham, Big Thinkers, and the Future of the Metropolis, organized by the Chicago Metro Section of the American Planning Association, Chicago, IL (Nov 20).
2011. "Sustainable Urban Systems Modeling," Urban Colloquium, Kansas State University, Manhattan, Kansas (April 1).
2011. "National Climate Assessment: Land Use Land Cover Change Technical Committee," U.S. Global Change Research Program, Salt Lake City, UT (November).
2012. "Urban Systems Science," Royal Institute of Technology (KTH), Stockholm (October 2).
2014. "Modeling Urban Systems," National Center for Smart Growth Research and Education, University of Maryland, College Park, MD (April 3).
2014. "Sustainable Energy Systems," University of Illinois at Chicago Summer Institute on Sustainability and Energy, Chicago, IL (July 6).
2015. "Integrated Urban Models and Planning Support," The National Socio-Environmental Synthesis Center (SESYNC), Andover, MD (January 22).
2016. "Sustainable Urban Design: Growth and Development in Rural China," International Programs, University of Illinois at Urbana-Champaign (September).
2016. "Modeling Urban Water Systems," Royal Institute of Technology (KTH) and Stockholm City Planners, Stockholm, Sweden (September 27).
2016. "Agriculture and Urban Systems Modeling for Climate Change," Atkinson Center for a Sustainable Future, Cornell University, Ithaca, NY (October 6).
2017. "Scenario Planning," Planning Support Systems Symposium, Royal Institute of Technology (KTH), Stockholm, Sweden (May 11).

### **Professional Societies**

- 2001-04. LEED Technical Advisory Committee, US Green Building Council.
- 2002-03. Advisory Board, State of Illinois Capitol Development Board Green Building.
- 2003-10. Board of Directors, Sustainable Livings Systems, Inc.
- 2011-14. Policy Advisory Board, Allerton Park and Conference Center.

## **Editorships**

2005-present. Editorial Board, *International Journal of Sustainable Design*.

2010-present. Section Editor, *Sustainability Journal*.

2017-present. Editorial Board, *Urban Science Journal*.

## **Grants**

### External Research Grants

Deal, Brian PI, Pallathucheril, V., and Hannon, B. Co-PIs. Department of Defense Strategic Environmental Research and Development Program (SERDP), 2002-2006, \$1,600,000. Competitive Award.

Deal, Brian PI, Pallathucheril, V. Co-PI. Engineering Research and Development Center (ERDC-CERL), 2003, \$25,000.

Deal, Brian PI, Pallathucheril, V. Co-PI. Engineering Research and Development Center (ERDC-CERL), 2003, \$75,000.

Deal, Brian PI, Pallathucheril, V. and Hannon, B. Co-PIs. East West Gateway Council of Governments, 2003-2006, \$800,000. Multiple awards.

Deal, Brian PI, Pallathucheril, V. Co-PI. Engineering Research and Development Center (ERDC-CERL), 2004, \$25,000. Competitive Award.

Deal, Brian PI, Pallathucheril, V. Co-PI. The Illinois Department of Natural Resources and the Tri-County Regional Planning Commission, 2005, \$45,000.

Deal, Brian PI, Pallathucheril, V. Co-PI. Illinois Department of Transportation, 2006-2007, \$200,000.

Deal, Brian PI, Pallathucheril, V. and Hopkins, L. Co-PIs. The Illinois Department of Natural Resources, 2006, \$100,000.

Deal, Brian PI. Department of Defense, Strategic Environmental Research and Development Program (SERDP), 2006-2007, \$30,800. Competitive Award.

Deal, Brian PI, Pallathucheril, V. Co-PI. National Oceanic and Atmospheric Administration (NOAA) Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), 2007-2010, \$320,000. Competitive Award.

Deal, Brian PI, Pallathucheril, V. Co-PI. The Chicago Metropolitan Agency for Planning (CMAP), 2007, \$60,000.

Deal, Brian PI. Engineer Research and Development Center - Construction Engineering Research Laboratory (ERDC-CERL), 2007-2008, \$125,000.

Deal, Brian PI. The Greening of McDonalds, The McDonalds Corporation International, 2007- 2008, \$40,000.

Deal, Brian PI. The McHenry County Planning Department, 2008-2009, \$100,000.

Deal, Brian PI, Kim, Y.W. Co-PI. The Rural Development Admin of the Republic of Korea, 2008-2010, \$80,000.

Sullivan, William PI, Deal, B. Co-PI. The Forest Preserve District of Cook County, 2009, \$50,000.

Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Pilot (SEDAC), The US Department of Energy and the Illinois Department of Commerce & Economic Opportunity, 2004, \$200,000.

- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The US Department of Energy and the Illinois Department of Commerce & Economic Opportunity, 2005, \$2,093,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The US Department of Energy and the Illinois Department of Commerce & Economic Opportunity, 2006, \$1,200,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The US Department of Energy and the Illinois Department of Commerce & Economic Opportunity, 2007, \$1,000,000.
- Deal, Brian PI, The Illinois Smart Energy Design Assistance Center Program (SEDAC), The US Department of Energy and the Illinois Department of Commerce & Economic Opportunity, 2008, \$1,700,000.
- Fournier, Don PI, Deal, B. Co-PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2009, \$2,827,825.
- Deal, Brian PI. 2040 Agricultural Preservation Strategies, The Chicago Metropolitan Agency for Planning (CMAP), 2010, \$21,023.
- Deal, Brian PI, Kim, Y.W. Co-PI. Impact Analysis and Resource Mapping Using LEAM GeoPortal Technologies in the Republic of Korea, The Rural Development Administration of the Republic of Korea, 2010, \$20,000
- Fournier, Don PI, Deal, B. Co-PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The IL Department of Commerce & Economic Opportunity, 2010, \$4,506,226.
- Deal, Brian PI. An Illinois Green Infrastructure and Ecosystem Services Valuation Tool, Illinois Indiana Sea Grant, 2011, \$9,999. Competitive Grant Award.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2011, \$5,776,424.
- Chakraborty, Arnab PI, Deal, B. Co-PI. Proposal to Develop Land Use Scenarios using LEAM and Maryland Statewide Transportation Model, Eco Northwest, 2011-2012, \$27,990.
- Deal, Brian PI. SIRA Data Layer Update for USACE CorpsMap Application, Engineer Research and Development Center Laboratory (ERDC-CERL), 2012, \$36,167.
- Deal, Brian PI, Fulton, G. Co-PI. Sentient Information Systems Study, Engineer Research and Development Center Laboratory (ERDC-CERL), 2012, \$20,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2012, \$7,596,922.
- Deal, Brian PI. The Role of Behavior Change in Energy Use Reduction in Education, The Illinois Green Economy Network, 2013, \$20,320.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2013, \$8,010,309.
- Cvetkovic, Vladimir PI, Deal, B. Co-PI. Watershed Planning for Urban-Regional Development, The Swedish National Research Council (Formas), 2014-2017, \$250,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2014, \$7,407,324.

- Deal, Brian PI. Detection and Diagnostic Methods for Energy Efficiency Performance Degradation in Buildings, Engineer Research and Development Center Laboratory (ERDC-CERL), 2015, \$175,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center Program (SEDAC), The Illinois Department of Commerce & Economic Opportunity, 2016, \$10,475,000.
- Deal, Brian PI. Land-use Evolution and impact Assessment Model (LEAM) for the Sangamon County Region, The Sangamon County Regional Planning Council, 2016-2017, \$55,000.
- Deal Brian PI. Watershed Specific Storm Water Release Rates, Grant with the Metropolitan Water Reclamation District of Greater Chicago (MWRD) – with the Prairie Research Institute, 2017, \$25,000.
- Deal, Brian PI. The Illinois Smart Energy Design Assistance Center (SEDAC), Multiple Grants-- ComEd, Ameren, Nicor, Peoples Gas and North Shore Gas, 2017, \$5,250,000.
- Deal, Brian PI. Technical Support of SEDAC Public Sector Enhanced Building Optimization Program. 360 Energy Group. Contract. 2017-19 \$400,000.
- Deal, Brian PI. ComEd Public Housing Authority Energy Study. ComEd/CLEAR Result Consulting, Inc. Grant. 2018-19. \$197,058.
- Deal, Brian PI. 2019 Outreach Service Providers. Exelon Corp. Grant. 2018 - 350,000. 2019- \$350,000.
- Deal, Brian PI. SEDAC Henry Hill Correctional Center Public Sector Energy Assessment. IL Dept of Corrections. Grant. 2018. \$12,500.
- Deal, Brian PI. A Study on the Feasibility and Appropriateness of a DNR Solar Development Project. IL Dept of Natural Resources (IDNR). Grant. 2018-19. \$35,000.
- Deal, Brian PI. SEDAC Energy Assessments for Illinois Publicly-Owned Wastewater Treatment Plants. IL Environmental Protection Agency (IEPA). Contract. 2018-19. \$354,688.
- Deal, Brian PI. The Illinois Energy Conservation Code: Training, Education, and Technical Assistance through the University of Illinois Smart Energy Design Assistance Center. IL Environmental Protection Agency (IEPA). Contract. 2018 – 350,000. 2019 - \$472,500.
- Deal, Brian PI. SEDAC John A Logan College Public Sector Energy Assessment. John A Logan College. Grant. 2019. \$12,500.
- Deal, Brian PI. SEDAC Pekin High School Public Sector Energy Assessment. Pekin Community High School District 303. Grant. 2019. \$12,500.
- Deal, Brian PI. An Application of Coupling Land Use Evolution and Impact Assessment Model (LEAM) and Regional Economic Input-Output Models (REIM) to the Sangamon County Region in Illinois. Sangamon (IL) County. Grant. 2018-19. \$42,500.
- Deal, Brian PI. Illinois Energy Conservation Code Assistance for the 2019 Illinois Technical Reference Manual Update. Vermont Energy Investment Corporation. Grant. 2019. \$30,000.00

#### Internal Grants

- Deal, Brian PI, Chakraborty, A. Co-PI. Creative Research Award, College of Fine and Applied Arts, University of Illinois at Urbana-Champaign. 2009-2010, \$10,000.

#### Research Review Panels

- Proposal Review Panel, *Emerging Frontiers in Research and Innovations (EFRI) Program*, U.S. National Science Foundation (NSF), 2010.

Proposal Review Panel, *National Estuarine Research Reserve System (NERRS) Science Collaborative Program*, National Oceanic and Atmospheric Agency (NOAA), 2011.

Proposal Review Panel, *National Estuarine Research Reserve System (NERRS) Science Collaborative Program*, National Oceanic and Atmospheric Agency (NOAA), 2012.

Research Committee, *SNSF Fellowships Commission: Fellowships For Prospective Researchers*, Swiss National Science Foundation (SNSF), 2012.

Proposal Review Panel, *National Estuarine Research Reserve System (NERRS) Science Collaborative Program*, National Oceanic and Atmospheric Agency (NOAA), 2013.

Proposal Review Panel, *Partnerships for Innovation (PFI) Program*, U.S. National Science Foundation (NSF), 2014.

Research Committee, *SNSF Fellowships Commission: Fellowships For Prospective Researchers*, Swiss National Science Foundation (SNSF), 2016.

External Reviewer, *NSFC/RGC Joint Research Program*, National Natural Science Foundation of China (NSFC) / Research Grants Council (RGC), 2017.

## PUBLICATIONS AND CREATIVE WORKS

### Doctoral thesis

Deal, Brian. *Sustainable Land-Use Planning: The Integration of Process and Technology*, Ph.D. Dissertation, Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign, 2003.

### Books Authored

Deal, Brian. *Sustainable Land-Use Planning: The Integration of Process and Technology* (Saarbrücken, Germany: VDM Publishing, 2008).

### Book Chapters

- Deal, Brian, Farello, C. Lancaster, M., Kompare, T. and Hannon, B. "A Dynamic Model of the Spread of an Infectious Disease: The Case of Fox Rabies in Illinois," in *Landscape Simulation Modeling: A Spatially Explicit, Dynamic Approach*, ed. R. Costanza and A. Voinov (New York, NY: Springer, 2004): pp. 275-300.
- Deal, Brian, and Z. Sun. "A Spatially Explicit Urban Simulation Model: Landuse Evolution and Impact Assessment Model (LEAM)," in *Smart Growth and Climate Change: Regional Development, Infrastructure and Adaptation*, ed. M. Ruth (Northampton, MA: Edward Elgar, 2006): pp. 181-203.
- Deal, Brian, and V. Pallathucheril. "Developing and Using Scenarios," in *Engaging the Future: Forecasts, Scenarios, Plans, and Projects*, ed. L.D. Hopkins, M.A. Zapata (Cambridge MA: Lincoln Institute for Land Policy, 2007): pp. 221-242.
- Deal, Brian, and V. Pallathucheril. "Simulating Regional Futures: The Land-use Evolution and impact Assessment Model (LEAM)," in *Planning Support Systems for Cities and Regions*, ed. R. Brail (Cambridge MA: Lincoln Institute for Land Policy, 2008): pp. 61-84.
- Deal, Brian, and V. Pallathucheril. "A Use-Driven Approach to Large-Scale Urban Modeling and Planning Support," in *Planning Support Systems: Best Practice and New Methods*, ed. S. Geertman, J. Stillwell (New York, NY: Springer, 2009): pp. 29-51.
- Deal, Brian, E. Jenicek, W. Goran, N. Meyers, and J. Fittipaldi. "Strategic Sustainability Assessment," in *Societal Challenges and GeoInformatics*, ed. by A.K. Sinha, L. Gundersen, D. Arctur, J. Ian (Boulder, CO: Geological Society of America, 2011): 482, pp. 41-57.
- Deal, Brian, J.H. Kim, and G. Hewings. "Complex Urban Systems Integration: The LEAM Experiences in Coupling Economic, Land Use, and Transportation Models in Chicago, IL," in *Employment Location in Cities and Regions: Models and Applications*, ed. F. Pagliara, M. de Bok, D. Simmonds, A.G. Wilson (Heidelberg: Springer, 2012): pp. 107-131.
- Deal, Brian, D. Fournier, and B. Sliwinki. "Energy Efficiency In Niche Markets: A Smart Energy Approach," in *Local Economic Development and Environment: Finding Common Ground*, ed. S. Opp, J. Osgood (Boca Raton, FL: Taylor and Francis, 2013).
- Deal, Brian, V. Pallathucheril and T. Heavisides. "Ecosystem Services, Green Infrastructure and the Role of Planning Support Systems," in *Planning Support Systems for Sustainable Urban Development*, ed. S. Geertman, F. Toppen, J. Stillwell (Berlin Heidelberg: Springer, 2013): pp. 187-207.



- Deal, Brian, V. Pallathucheril, Y.W. Kim, and H. Pan. "Sentient PSS for Smart Cities," in *Planning Support Systems and Smart Cities*, ed. S. Geertman, J. Ferreira, R. Goodspeed, J. (Heidelberg: Springer, 2015): pp. 281-296.
- Deal, Brian, and H. Pan. "Operationalizing Planning Support Systems," in *Smart Governance and New Forms of Collaborative Planning*, ed. Y.L. Lin, S.F. Wang, S. Geertman, Z.H. Deng (Beijing: China Commerce and Trade Press, 2017).
- Deal, Brian, A. Petri, and H. Pan. "Big Data, Socio-Environmental Resilience and Planning Support," in *Big Data for Regional Science*, ed. L.A. Schintler and Z. Chen (Routledge, 2017).
- Deal, B., H. Pan, and Y. Zhaung. "Modeling Land-use Change in Complex Urban Environments," in *Comprehensive Geographic Information Systems*, ed. B. Huang, T. Cova, M.H. Tsou, G. Bareth, C. Song, Y. Song, K. Cao, and E. Silva (Elsevier, 2017).

### Journal Publications

- Chalifoux, Alan, A. McNamee, B. Deal, and B. Lynn. "The Model Energy Installation Program: Progress and Lessons Learned," *ASHRAE Transactions* 102 (1996).
- Deal, Brian, J. Adams, and M. Adams. "The Green Neighborhood Process: Energy Conservation through Collaboration," *ASHRAE Transactions* 102 (1996).
- Beasley, Robert, B. Deal and L. DeBaillie. "Systematic Estimating End-Use Energy Consumption Patterns at Large Military Installations." *Journal of Environmental Systems* 25, 3 (1996): pp. 241-53.
- Larsen, Larissa, J. Adams, B. Deal, B. Kweon, and E. Tyler. "Productivity in the Interior Work Environment," *Journal of Environment Behavior* 30, 3 (1998): pp. 261-82.
- Deal, Brian, C. Farrello, M. Lancaster, T. Kompare, and B. Hannon. "A Dynamic Model of the Spatial Spread of an Infectious Disease," *Environmental Modeling and Assessment* 5, 1 (2000): pp. 47-62.
- Deal, Brian. "Ecological Urban Dynamics: the Convergence Spatial Modeling and Sustainability," *Journal of Building Research and Information* 29, 5 (2001): pp. 381-93.
- Goran, William, and B. Deal. "Technologies to Help Installations Plan Across Fence Lines." *Army Acquisition, Logistics, and Technology* (Sep-Oct 2002): pp. 32-34.
- Yang, Limin, G. Xian, J. Klaver, and B. Deal. "Urban Land Cover Change Detection Through Sub-Pixel Imperviousness Mapping Using Remotely Sensed Data," *Photogrammetric Engineering & Remote Sensing* 69, 9 (2003): pp. 1003-1010.
- Deal, Brian, and D. Schunk. "Spatial Dynamic Modeling and Urban Land Use Transformation: A Simulation Approach to Assessing the Costs of Urban Sprawl," *Journal of Ecological Economics* 51, 1-2 (2004): pp. 79-95.
- Wang, Yun, W. Choi, and B. Deal. "Long-Term Impacts of Land-Use Change on Non-Point Source Pollutant Loads for the St. Louis Metropolitan Area," *Journal of Environmental Management* 35, 2 (2005): pp. 194-205.
- Aurambout, Jean P., A. G. Endress, and B. Deal. "A Spatial Model to Estimate Habitat Fragmentation and its Consequences on Long-Term Persistence of Animal Populations," *Environmental Monitoring and Assessment* 109, 1-3 (2005): pp. 199-225.
- Fournier, D, and B. Deal. "Toward an Energy Efficient Future: The Illinois Smart Energy Design Assistance Program," *Journal of Green Building* 2, 3 (2007): pp. 52-59.

- Choi, Woonsup, and B. Deal. "Assessing the Hydrological Impact of Potential Land Use Change through Hydrological and Land Use Change Modeling for the Kishwaukee River Basin," *Journal of Environmental Management* 88 (2008): pp. 1119-30.
- Deal, Brian, and V. Pallathucheril. "Sustainability and Urban Dynamics: A Determination of Development Stress on Local Resources," *Sustainability Journal* 1, 3 (2009): pp. 346-362
- Sun, Zanli, B. Deal, and V. Pallathucheril. "The Land-use Evolution and Impact Assessment Model: A Comprehensive Urban Planning Support System," *URISA Journal* 21, 1 (2009): pp. 57.
- Deal, Brian, J.H. Kim, and A. Chakraborty. "Growth Management and Sustainable Transport: Do Growth Management Policies Promote Transit Use?" *Journal of Public Transportation* 12, 4 (2009): pp. 21-40.
- Deal, Brian, and A. Chakraborty. "Cyber-physical Planning Support Systems: Advancing Participatory Decision Making in Complex Urban Environments," *International Journal of Operations and Quantitative Management* 16, 4 (2010): pp. 353-367.
- Chakraborty, Arnab, N. Kaza, G. Knaap, and B. Deal. "Robust Plans and Contingent Plans: Scenario Planning for an Uncertain World," *Journal of the American Planning Association* 77, 3 (2011): pp. 251-266.
- Deal, Brian, E. Jenicek, W. Goran, N. Myers, and J. Fittipaldi. "Strategic Sustainability Assessment," *Geological Society of America Special Papers* 482 (2011): pp. 41-57.
- Mortberg, Ulla, J. Haas, A. Zetterberg, J. Franklin, D. Jonsson, and B. Deal. "Urban ecosystems and sustainable urban development – analyzing and assessing interacting systems in the Stockholm region," *Urban Ecosystems* 16, 4 (2013): pp. 763-782.
- Kim, Jae H, B. Deal, and A. Chakraborty. "Parsing density changes: an outcome oriented growth management policy analysis." *Journal of Housing and the Built Environment* 28, 3 (2013): pp. 529-546.
- Jiang, Bin, L. Larsen, B. Deal, W. Sullivan. "A dose–response curve describing the relationship between tree cover density and landscape preference," *Landscape and Urban Planning* 139 (2015): pp. 16-25.
- Timm, Stephanie, B. Deal. "Effective or Ephemeral? The role of energy information dashboards in changing occupant energy behaviors," *Energy Research & Social Science* 19 (2016): pp. 11-20.
- Deal, Brian, H. Pan. "Discerning and Addressing Environmental Failures in Policy Scenarios Using Planning Support System (PSS) Technologies," *The Sustainability Journal* 9, 1 (Dec 2016): pp. 13.
- Jiang, Bin, B. Deal, H.Z. Pan, L. Larsen, C.H. Hsieh, C.Y. Chang, W.C. Sullivan. "Remotely-sensed imagery vs. eye-level photography: Evaluating associations among measurements of tree cover density," *Landscape and Urban Planning* 157 (2017): pp. 270-281.
- Deal, B, H. Pan, G. Fulton, V. Pallathucheril, Y.W. Kim. "Planning Support Systems: The Need for Sentience," *Journal of Urban Technologies* 24, 1 (Mar 2017).
- Mörtberg, Ulla, R. Goldenberg, Z. Kalantari, O. Kordas, B. Deal, B. Balfors, V. Cvetkovic. "Integrating Ecosystem Services in Urban Energy Trajectories," *Energy Policy Journal* 100 (Jan 2017): pp. 338–349.

- Deal, Brian, H. Pan, S. Timm, V. Pallathucheril. "The Role of Multidirectional Temporal Analysis in Scenario Planning Exercises and Planning Support Systems," *Journal of Computers, Environment and Urban Systems* 64 (2017): pp. 91-102.
- Goldenberg Romain, Z. Kalantari, V. Cvetkovic, U. Mörtberg, B. Deal, G. Destouni. "Distinction, quantification and mapping of potential and realized demand and supply of ecosystem services," *Science of the Total Environment* 593 (2017): pp. 599-609.
- Timm, Stephanie, B. Deal. "Comparative Planning in Practice: The Pitfalls and Possibilities of Learning from International Sustainability Solutions," *Planning Practice and Research* (2017) In press. No. CPPR-2016-0062.
- Dongying Li, B. Deal, X. Zhou, M. Slavenas, W. C. Sullivan. "Moving beyond the neighborhood: Daily exposure to nature and adolescents' mood," *Landscape and Urban Planning*, Volume 173, May 2018, Pages 33-43,
- Pan, H., B. Deal, Y. Chen, and G. Hewings. "A Reassessment of urban structure and land-use patterns: distance to CBD or network-based?—Evidence from Chicago." *Regional Science and Urban Economics*. April (2018).
- Gu, Yexuan, B. Deal. "Coupling Systems Thinking and Geodesign Processes in Land-use Modelling, Design, and Planning." *Journal of Digital Landscape Architecture* 3 (2018): 2.
- Deal, Brian, Y. Gu. "Resilience Thinking Meets Social-Ecological Systems (SESs): A General Framework for Resilient Planning Support Systems (PSSs)." *Journal of Digital Landscape Architecture* (2018): 200-207.
- Pan H, Deal B, Destouni G, Zhang Y, Kalantari Z. "Sociohydrology modeling for complex urban environments in support of integrated land and water resource management practices". *Land Degrad Dev*. 2018;1–14.
- Li, Dongying, Brian Deal, Xiaolu Zhou, Marcus Slavenas, and William C. Sullivan. "Moving beyond the neighborhood: Daily exposure to nature and adolescents' mood." *Landscape and Urban Planning* 173 (2018): 33-43.
- Gu, Yexuan, Brian Deal, and Linda Larsen. "Geodesign Processes and Ecological Systems Thinking in a Coupled Human-Environment Context: An Integrated Framework for Landscape Architecture." *Sustainability* 10, no. 9 (2018): 3306.
- Allen, James, and Brian Deal. "Military Climate Resilience Planning and Contemporary Systems Thinking." *Projections* (2018).
- Timm, Stephanie N., and Brian M. Deal. "Understanding the behavioral influences behind Singapore's water management strategies." *Journal of Environmental Planning and Management* 61, no. 10 (2018): 1654-1673.
- Gu, Yexuan, Xuesong Zhang, Brian Deal, and Lujia Han. "Biological systems for treatment and valorization of wastewater generated from hydrothermal liquefaction of biomass and systems thinking: A review." *Bioresource technology* 278 (2019): 329-345.
- Pan, Haozhi, Le Zhang, Cong Cong, Brian Deal, and Yutao Wang. "A dynamic and spatially explicit modeling approach to identify the ecosystem service implications of complex urban systems interactions." *Ecological Indicators* 102 (2019): 426-436.
- Gu, Yexuan, Xuesong Zhang, Brian Deal, Lujia Han, Jilu Zheng, and Haoxi Ben. "Advances in energy systems for valorization of aqueous byproducts generated from hydrothermal processing of biomass and systems thinking." *Green Chemistry* (2019).

Pan, Haozhi, and Brian Deal. "Reporting on the Performance and Usability of Planning Support Systems—Towards a Common Understanding." *Applied Spatial Analysis and Policy* (2019): 1-23.

Kalantari, Zahra, Carla Sofia Santos Ferreira, Brian Deal, and Georgia Destouni. "Nature-based solutions for meeting environmental and socio-economic challenges in land management and development." *Land Degradation & Development* (2019).

### **Bulletins, Reports, and Conference Proceedings**

Timlin, Diane M, D. Johnston, and B. Deal. "Guidelines for Developing Historic Urban Growth Series for Military Installation Risk Assessment," in *USACERL Technical Report TR02-06*. U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Deal, Brian, D. M. Timlin, and W. D. Goran. "Urban Encroachment of Military lands: Military Installations at Risk," in *USACERL Technical Report TR02-3.*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories. Champaign, IL (2002).

Jenicek, Elisabeth, B. Deal, A. Sagert. "Sustainable Indices and Metrics: An Annotated Bibliography," in *USACERL Technical Report TR02-25*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Deal, Brian, D. Fournier, and D. M. Timlin. "An Assessment of Encroachment Mitigation Techniques for Army Lands," in *USACERL Technical Report TR02-27*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Fournier, D, and B. Deal. "Sustainability and the Adaptive Reuse of Historic Structures," in *USACERL Technical Report TR02-22*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Jenicek, Elisabeth, B. Deal, and D. Fournier. "Sustainable Indices and Metrics," in *USACERL Technical Report TR02-29*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Fournier D, B. Deal, E. Jenicek, and A. Sagert. "Sustainable Installation Risk Assessment and Stationing Implications," in *USACERL Technical Report SR02*, U.S. Army Corps of Engineers, Construction Engineering Research Laboratories, Champaign, IL (2002).

Millican, Daniel, W. Lutterschmidt, and B. Deal. "Physiological and Behavioral Sensitivity to Environmental Stressors Measured by Changes in Fish Guild Structure in Urbanized Streams," in *Proceedings of the American Physiological Society Meeting, 24-28 August, San Diego, CA* (2002).

Lutterschmidt, William, D. Millican, and B. Deal. "A Discussion of Biological Integrity in Evaluating the Impacts of Urban Development and Changes in Land Use," in *Proceedings of the 56th Annual Conference of Southeastern Association of Fish and Wildlife Agencies, 26-30 October, Baltimore, MD* (2002).

Case, Michael, B. Deal, W. Goran, R. Lacey, and J. Westervelt. "Fort Future: Installation Transformation Using a Virtual World," in *Proceedings of the US Army Science and Technology Conference*, Washington, DC (2003).

Deal, Brian, and V. George. "The Land Evolution and impact Assessment Model (LEAM): Will it Play in Peoria?" in *Proceedings of Computers in Urban Planning and Urban Management*, Sendai, Japan (2003).

- Sun, Zanli, and B. Deal. "The Urban Land-Use Evolution and Impact Assessment Model (LEAM)," in *Proceedings of the Annual Conference of the Urban and Regional Information System Association (URISA)*, Reno, NV (2004).
- Deal, Brian, V. Pallathucheril, and B. Hannon. "Annual Report on the Integration of blueprintLEAM," prepared for the East West Gateway Council of Governments, St Louis, MO (2005).
- Dale, Virginia and B. Deal. "A White Paper Comparing Model Projections Generated by RSim and LEAM for Fort Benning," in *A Report to the Strategic Environmental Research and Development Program*, Washington DC (July 2007).
- Deal, Brian, and V. Pallathucheril. "Coupled Land Use and Transportation Models: The LEAM/TransEval Experience in St Louis, MO," in *Proceedings of the Computers in Urban Planning and Urban Management (CUPUM)*, Iguassu Falls, Brazil (July 2007).
- Deal, Brian. "The Socio-Economics of Landuse Change: Coupling Landuse and Transportation Models," in *Proceedings of the Annual Conference of the Urban and Regional Information System Association (URISA)*, Washington, DC (September 2007).
- Deal, Brian, V. Pallathucheril, and B. Hannon. "A Report on the integration of the CMAP TDM and LEAM," prepared for The Chicago Metro Agency for Planning. Chicago, IL (2008).
- Deal, Brian, "LEAMplan: Planning for the Future of McHenry County," submitted to the McHenry County Planning and Development Committee (May 2009).
- Deal, Brian, Y.W. Kim. "Impact Analysis and Resource Mapping Using LEAM GeoPortal Technologies in the Republic of Korea," submitted to the Rural Development Agency, Republic of Korea (January 2010).
- Kim, Jae H., G.J.D. Hewings, and B. Deal. "Assessing the macroeconomic effects of reactive land use controls: A simulation study," in *Regional Economics Applications Laboratory Discussion Paper 10-T-7* (2010).
- Deal, Brian, R. Boyer. "Will Urban Planning Change with the Climate?" in *Change and the Heartland 1* (2010): p. 5.
- Deal Brian, A. Chakraborty, and Y.W. Kim. "Developing mega-regional land use (LEAM) model for Chesapeake Bay Mega-region," submitted to the US Federal Highway Administration (March 2012).
- Mörtberg, Ulla, B. Deal, V. Cvetkovic, B. Balfors, J. Azcarate, J. Haas, X. Pang. "Integrating ecosystem services in urban energy trajectories," in *Proceedings of BIWAES 2015* (2015): p. 189.
- Allen, James P., and Brian M. Deal. *Military Climate Resilience Planning and Contemporary Urban Systems Thinking*. No. ERDC/CERL MP-17-4. ERDC-CERL CHAMPAIGN United States, 2017.

### **Abstracts**

- Sun, Zhanli, and B. Deal. "Managing the Dynamics of Geographic Information Systems: The Case of Urban Land Use Transformation in St Louis, MO," in *GeoInformatics 2006 - Abstracts: The US Geological Survey Scientific Investigators Report*, ed. by S.R. Brady, A. K. Sinha, and L.C. Gunderson (Washington: USGS, 2006): pp. 52-3.

Deal, B., A. Petri, H. Pan, R. Goldenberg, Z. Kalantari, V. Cvetkovic. "Socio-Environmental Resilience and Complex Urban Systems Modeling," in *EGU General Assembly Conference Abstracts* 19 (2017): p. 18478.

### **Book and Exhibition Reviews**

Deal, Brian. "Review of *Ecological Planning: A Historical and Comparative Synthesis* by Forster Ndubisi (Baltimore, MD: Johns Hopkins University Press, 2002)," for *Journal of Planning Literature* 18, 3 (2004): pp. 309-10.

Deal, Brian. "Review of *Measuring Landscapes: A Planner's Handbook*, by Andre Botequilha Leitao, Joseph Miller, Jack Ahern, and Kevin McGarigal (Washington, DC: Island Press, 2006)," for *Journal of Planning Education and Research* 22 (2007): pp. 126-127.

### **Refereed Conference Papers**

Deal, Brian. "Urban Dynamics and Sustainability: and Ecological Approach," The Association of Collegiate Schools of Planning Annual Conference, Cleveland (November 8-11, 2001).

Deal, Brian. "Evolving Urban Dynamics: the Land Use Evolution and Impact Assessment Model," Planning Matters: Illinois Planning and Zoning Institute, Champaign (March 2002).

Deal, Brian. "The Land Use Evolution and Impact Assessment Model," Metro St. Louis American Planning Association, St. Louis (May 21, 2002).

Deal, Brian. "The Military Land Use Evolution and Impact Assessment Model," Federal Planning Division of the American Planning Association Conference, Chicago (April 2002).

Deal, Brian. "Planning for Smart Growth." American Planning Association Conference, Denver, CO (March 31, 2003).

Deal, Brian. "The Modeling Process and Stakeholder Interaction," Livable Communities Conference, University of Missouri St Louis, St. Louis (May 15-16, 2004).

Deal, Brian. "Modeling Future Land Uses," ESRI Users Conference, San Diego (July 25-29, 2005).

Deal, Brian. "LEAM: Modeling Landscape Futures," Champaign County Land Use Summit, Champaign County Farm Bureau, Champaign (August 2, 2005).

Deal, Brian. "The Socio-Economics of Land Use Change: Coupling Land Use and Transportation Models," Urban and Regional Information System Association (URISA), Washington, D.C. (August 20-23, 2007).

Deal, Brian. "Coupled Land Use and Transportation Models: The LEAM/TransEval Experience in St Louis, MO," Computers in Urban Planning and Urban Management (CUPUM), Iguassu Falls, PR, Brazil (July 11-13, 2007).

Deal, Brian. "Calculating the Environmental Stresses of Development Pressures," American Collegiate Schools of Planning, Milwaukee (October 18-21, 2007).

Deal, Brian. "Operational Land Use Modeling: the LEAM experiences," American Collegiate Schools of Planning, Chicago (July 6-11, 2008).

Deal, Brian. "Next generation planning support systems: Advancing participatory decision making in complex urban environments," The 50th Annual ACSP Conference, Washington, DC (October 2009).

Deal, Brian. "Climate And Planning: A Planning Response to the Climate Problem," The 51st Annual ACSP Conference, Minneapolis (October 2010).

Deal, Brian. "Urban Systems Science," World Congress on Urban Challenges, Chicago (November 2014).

Deal, Brian. "Planning Support Systems in the Rear View Mirror," The 54th Annual ACSP Conference, Philadelphia (October 2013).

Deal, Brian. "Urban Systems Science: Toward Urban Sustainability," The 54th Annual ACSP Conference, Philadelphia (October 2014).

Deal, Brian. "Smart Sentient Cities: The Case for Sentience in Planning Support Systems," Computers in Urban Planning and Urban Management (CUPUM), MIT, Cambridge, MA (July 7-10, 2015).

Deal, Brian. "Land Use Evolution and Impact Assessment Model (LEAM)," Scenario Planning Applications Network Symposium, University of Illinois, Champaign (November 2016).

### **Other Publicatons**

Deal, B. Participating contributor to The Sustainable Grand Canyon Workshop. Published by the Grand Canyon National Park, U.S. Department of the Interior, National Park Service, Washington, DC (1995).