Kathleen M. Bergen, Ph.D.

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Research & Teaching Interests	Human Dimensions of Environmental Change Land-Cover/Land-Use Change Remote Sensing/GIS/Biodiversity Informatics Environmental Health & Informatics
Education	**Ph.D.** School of Natural Resources & Environment, University of Michigan, Ann Arbor, MI. May 1997. Concentration: Ecology and Remote Sensing/GIS. Ph.D. Dissertation: *Classification, Biomass Estimation, and Carbon Dynamics of a Northern Forest using SIR-C/X-SAR Imagery.* Ph.D. Core Curricula: Computer Mapping, GIS: Georeferenced Data Applications, Remote Sensing of Environment, Interpretation of Remote Sensing Data, Principles of Radiation for Remote Sensing, Imaging Radar Remote Sensing, Woody Plants: Biology and Identification, Forest/Terrestrial Ecology, Forest Hydrology and Watershed Management, Forest Ecosystem Dynamics, Soil Properties and Processes, Process Geomorphology, Global Biogeochemical Cycles, Introduction to Statistics, Natural Resources Data Applications, Natural Resources Measurements, Forest Measurements, Field Surveying, Advanced Natural Resources Data Analysis (advanced statistics), Multivariate Statistical Analysis, Forest Sampling Methodology, Research Paradigms in Ecology, Fortran Programming, Dissertation research on forest ecology, biomass and carbon. **M.S.** School of Information and Library Science, University of Illinois, Urbana, IL, August 1982. (#1 ranked program, nationally) Concentrations: Academic Information Services; Government and Geographic Information; Research Instruction. **B.S.** Department of Geography, Western Illinois University, Macomb, IL, May 1981. Major: Geography; Minors: Music and Psychology; Secondary Education Teaching Certification in Social Sciences.
Professional Experience	**Associate Research Scientist**, School for Environment & Sustainability (SEAS), The University of Michigan, Ann Arbor, Michigan (2009-present; administrative oversight for Environmental Spatial Analysis Laboratory 2015-present); see also below for research programs. **Assistant Research Scientist**, School of Natural Resources and Environment (SNRE), The University of Michigan, Ann Arbor, Michigan (2002 – 2008)

Research program 2000-present focuses at the landscape scale on i) land-cover/land-use change (LCLUC) and its human dimensions and ii) ecological informatics (remote sensing, GIS, biodiversity informatics). Work uses a combination of remote sensing/GIS, field and analytical approaches. Program supported by NSF, NASA, NIH and USFS. Newer projects include: analysis and synthesis of natural and human-driven LCLUC trends in the Russian Far East; major synthesis of LCLUC and human socio-economic drivers in Siberian Russia; LCLUC in grasslands of China; Agriculture, logging and roads LCLU in Congo Basin forested landscapes; LCLU and environmental health; and forest and LCLUC at the SNRE forest properties. Engage in research, manage research programs, communicate results in presentations and publications, mentor students, and participate in NSF, NASA, USDA agency and other professional activities. Re-develop (in 2000, 2008, 2011, 2017) the SEAS Remote Sensing of Environment course, adding new lectures and labs; Develop and teach new seminar course in Biodiversity Informatics in 2007. Update and teach the SEAS Principles of GIS core course 2016-present. Update and teach SNRE GIS course Fall 2015, 2017. 2018. Develop new course in Field Remote Sensing (taught 2018 at UMBS). Mentoring and informal teaching of many students in remote sensing and science applications in SEAS in my lab 2000-present. Started as Assistant Research Scientist; promoted to Associate Research Scientist 2008/2009; administrative oversight of Environmental Spatial Analysis Laboratory 2015-present.

Manager, Environmental Spatial Analysis Laboratory (ESALab) and Assistant Research Scientist, School of Natural Resources and Environment, The University of Michigan, Ann Arbor, MI (2000 – 2001).

Primary portion of position was to manage the ESALab on a daily basis including research support, hardware/software/networks, and personnel (50%). In addition to its SNRE focus, the ESALab served as a busy default central location for campus GIS support prior to establishment of the campus-wide CSCAR Spatial Services. Also revised and taught NRE441 Remote Sensing of Environment (25%) and engaged in start-up research activities (25%). Moved from this position to full-time Assistant Research Scientist.

Research Scientist, Terrestrial Sciences, Earth Sciences Group, ERIM International, Ann Arbor, MI (August 1998-June 2000).

In this industry position, had responsibility for basic and applied research at the interface of forestry, ecosystem ecology, and land management with remote sensing and geographic information systems. Research-oriented projects included effects of human settlement on forest harvesting and fire patterns in the boreal forest including Russia; SAR forest characterization: height, volume, and biomass; remote sensing analysis of wetland ecosystems; estimation of forest carbon and NPP; effects of disturbance on forest succession; forest and land-cover classification and change; and forest monitoring indicators. Applied projects for government and commercial forest agencies include analysis of forest change and forest health indicators and associated publications. Experience provided significant insight into non-academic (i.e., industry and agency) applications and management of geospatial technologies.

Post-Doctoral Research Associate, Center for Remote Sensing, Boston University, Boston, MA (August 1997- July 1998).

Through primarily contract-supported work, used remote sensing data to investigate groundwater hydrology in the Middle East as part of a team of researchers. Completed post-dissertation analysis and publication on integration of imaging radar data with other methods of measuring, modeling and monitoring terrestrial net primary production in forested regions.

Ph.D. Program Research & Teaching

Research Assistant: Microwave Image Processing Laboratory, University of Michigan (July 1990 - July 1997).

Research appointment consisted of a series of projects over seven years all related to the goals of a long-term NASA SIR-C/X-SAR Ecology research site. The ecology goals for the Michigan Forests Test Site (MFTS) were to use field experiments to calibrate new remotely sensed data and to quantify and map structure and function of a mixed forested/wetland/agricultural region: land cover/forest type, forest height, biomass, and productivity. Initial appointment was as the forest ecology and tree ID scientist on the team. Asked to take central role in planning forest sampling; forest and other field data collection efforts (63,000 trees in 70 4-ha stands over 4 years, LAI, vegetation and soil moisture, weather, roughness); managing field personnel; completing extensive biometric statistical analyses; and completing GPS mapping missions. Research culminated in analysis of forest field data and radar imagery for land-cover classification and derivation of biophysical parameters related to carbon (forest height, biomass/carbon, and productivity). Communicated results in journals, conferences and technical reports.

Teaching Assistant: Geography 100, LS&A Program in Geography, University of Michigan (1991, 1992).

Taught weekly discussion sections for this lecture-discussion course, provided individual instruction and assisted in grading exams.

Teaching Assistant: Map and Image Interpretation NRE 441, School of Natural Resources and Environment, University of Michigan (1991, 1992).

Supervised the lab portion of this course. Prepared and organized lab materials. Provided assistance to students as they worked through their lab assignments. Assisted in grading assignments.

Previous Professional Experience

M-Link, University of Michigan Library System (1989-1991).

Appointed to coordinate start-up of grant-funded (W.K. Kellogg Foundation) M-Link project to link other institutions in Michigan with MIRLYN and UM Library information and information technology resources, including specialized databases. Responsibility for purchase of computer facilities, hiring and supervision of professional and graduate student staffs, implementation, and administration of this research and information network. Left this position for full-time Ph.D. research.

MIRLYN Implementation Team, University of Michigan Library System (1987-1989).

Member of four-person team selected to work for the University of Michigan Library Administration to implement MIRLYN, a first-tme campus-wide integrated computerized bibliographic system. The Team's charge was to analyze software capabilities as well as procedures and policy and to make detailed

recommendations for automating all functions of the University Library System (including moving from the paper catalog to the online environment). Also major responsibility for writing training materials and conducting in-depth training for 400 permanent staff.   The MIRLYN implementation was initially a $6 million project funded by the W.K. Kellogg Foundation and the State of Michigan.

Head, Map Library, University of Michigan Library System (1985-1987).

Head of an internationally recognized map and cartographic information (topographic, geologic, hydrologic, as well as digital data) center affiliated with the Program in Geography and University Library. Directed all facets of collection of 300,000 maps, atlases, and rare materials including: planning, personnel, budget, facilities, acquisitions, cataloging, and reference/research service. Managed staff consisting of librarian, professional, graduate student field experience students (School of Information and Library Science), and student assistants. Responsible for annual merit review process for permanent staff. Managed annual personnel and collection/acquisitions budget. Supervised reference services and staff and provided research service to the University community and researchers from other institutions. Guest lecturer for various courses and groups. Committee service including 2 years on the Collection Management Development Council which appropriated the Library's $6 million acquisitions budget.

Reference & Instruction, University of Michigan (1982-1985).

Reference services, research methods instruction librarian in the Undergraduate Library. Performed reference service to diverse undergraduate student researchers primarily in the social sciences and humanities. Developed and taught library and information research skills in classroom format to multiple sections per semester of introductory English and Psychology courses. Provided hands-on training in use of MLA Bibliography, Social Science Citation Index, Psychological Abstracts and others.

Teaching	*Courses Developed & Taught*

EAS 501.034 Field Remote Sensing & Analysis at UMBS. 2018-present (2 cr)

EAS 541 Remote Sensing of Environment. 1999-present (4 cr lec/lab)

EAS 531 Principles of Geographic Information Systems. 2015-present (4 cr lec/lab)

NRE 501.034 Biodiversity Informatics. 2006 (3 cr)

Research Projects	*Funded Projects*

USDA Forest Service: A New Model of Climate and Forest Health Pressures on Forest Succession and Biomass at The University of Michigan Biological Station (PI Kathleen Bergen (UM SEAS) with Co-I Bill Currie (SEAS) and Collaborators Hana Qoronfleh, Jason Tallant, Shannon Brines and Sucila Fernandes (UM SEAS) ($140,000) 2019-2021.

Ann Arbor Community Foundation. *Internships for Saginaw Forest Management* (Co-PI Kathleen Bergen (UM SEAS) with Bob Grese, SEAS and Matthai) ($12,000) 2018-2019.

Power Foundation. *Saginaw Forest Grant.*   Kathleen Bergen fund and project

manager (UM SEAS) ($50,000) 2017-2020.

USDA Forest Service: *SNRE Forest Properties: Forest Research, Data Sharing and Outreach*. PI Kathleen Bergen (UM SNRE), (USDA Forest Service) ($60,001) 2015-2017.

NASA: LCLUC SYNTHESIS: *Forested Land Cover and Land Use Change in the Far East of the Northern Eurasia Under the Combined Drivers of Climate and Socio-Economic Transformation*. PI Kathleen Bergen with Co-I Josh Newell and Dan Brown (SNRE); Tatiana Loboda (University of Maryland); Co-I Hank Shugart, (University of Virginia) (NASA Land-Cover/Land-Use Change Program) ($999,144 total; $476,788 Michigan/SNRE) 2012-2017.

NASA: LCLUC Synthesis: *Ecosystem-Society Interactions on a Changing Mongolian Plateau.* Collaborator Kathleen Bergen with PI Jiquan Chen (Uni. of Toledo), Co-I Daniel Brown (SNRE) (NASA Land-Cover/Land-Use Change Program) total; $350,304 Michigan/SNRE) 2014-2017.

Bristol Myers Squibb Foundation. *Durham Diabetes Collaborative.* Califf, Robert (PI) 2011/07/01-2016/06/30 (K. Bergen hired as Research Scientist).

Centers for Medicare & Medicaid Services. *From Clinic to Community: Achieving Health Equity in Southern United States*. Califf, Robert (PI) Direct research. 2012/07/01-2015/06/30. (K. Bergen hired as Research Scientist).

USDA Forest Service: *Broadening Research Contexts for the SNRE Forest Properties Through Collaboration with the IFRI Program*. PI Kathleen Bergen (UM SNRE), (USDA Forest Service) ($60,001) 2010-2012.

NASA: *Grassland Ecosystems and Societal Adaptations under Changing Grazing Intensity and Climate on the Mongolian Plateau.* Co-I Kathleen Bergen with PI Dan Brown and Co-I Arun Agrawal (University of Michigan SNRE); and Co-Is Yichun Xie and William Welsh (Eastern Michigan University). (NASA Land-Cover/Land-Use Change Program) ($800,000) 2009-2012.

NASA: A Segmentation Approach for Combining RaDAR Backscatter, InSAR and LiDAR Measurements to Determine Vegetation 3d Structure and Biomass from Space. Co-I Kathleen Bergen with PI Paul Siqueira (University of Massachusetts), Co-I Bruce Chapman, (NASA Jet Propulsion Laboratory), Co-I Richard Lucas, University of Wales, AU), (NASA Terrestrial Ecology Program) ($915,148 total; $170,000 Michigan/SNRE sub-contract) 2009-2012.

NASA: *VEGEX3D: LIDAR-SAR/INSAR Fusion-Extrapolation and Simulation Models for Retrieving Vegetation 3D Structure and Biomass.* Co-I Kathleen Bergen with PI Kamal Sarabandi and Co-I Leland Pierce (University of Michigan Engineering), (NASA Terrestrial Ecology Program) ($667,042) 2009-2013.

USDA Forest Service: Supplement to: *SNRE-Affiliated Forest Properties: Developing a Long-Term GIS and Scenarios for Ecosystem Management*. PI Kathleen Bergen (UM SNRE), (USDA Forest Service), ($25,000) 2009-2010.

NASA: *Remotely Sensed LCLUC over Changing Socio-Economic Eras in the Former Soviet Union and Eastern Bloc: Proposal toward Regional Synthesis*. PI Kathleen Bergen, (NASA Land-Cover/Land-Use Change Program) ($35,114) 2008-2010.

University of Michigan School of Natural Resources and Environment: *Collaborative Seed Project to Enhance Forest Structure Research at UMBS*. PI Kathleen Bergen with Collaborator Leland Pierce, (UM SNRE) ($9,511) 2008-2009.

NSF: *Planning Visit for U.S.-China-EU Research on Coupled Ecological and Human Dynamics at Poyang Lake Basin, China*. PI Kathleen Bergen with Co-Is Dan

Brown, Shuming Bao, Jeb Barzen (NSF OISE) ($20,000) 2007-2008.

USDA Forest Service: *SNRE-Affiliated Forest Properties: Developing a Long-Term GIS and Scenarios for Ecosystem Management.* PI Kathleen Bergen with Co-I J. David Allan (UM SNRE), (USDA Forest Service) ($60,115) 2008-2010.

NASA: *The Impact of Temporal Decorrelation on InSAR Vegetation 3-D Structure Algorithms.* NASA Carbon Science. Co-I Kathleen Bergen with PI Paul Siqueira (University of Massachusetts) and Co-I Bruce Chapman, (NASA Jet Propulsion Laboratory), (NASA Terrestrial Ecology Program) ($700,000 total; $90,919 Michigan/SNRE sub-contract) 2006-2009.

NASA: *Land Dynamics, Social Vulnerability, and Ecological Effects of Flooding Under Policy and Environmental Change around Poyang Lake, China.* Co-I Kathleen Bergen with PI Dan Brown (UM SNRE) and Shuming Bao (UM International Center), (NASA Land-Cover/Land-Use Change Program) ($591,801) 2005-2008.

NASA: *Supplement to NASA Grant Modeling Boreal Forests Land-Cover Land-Use Change under Changing Economic Paradigms.* PI Kathleen Bergen, (NASA LCLUC) ($50,000) 2004-2006.

USDA Forest Service: *Northern Michigan Forest Productivity across a Complex Landscape.* Co-PI Kathleen Bergen with Co-PI David Ellsworth (UM SNRE), (USDA Forest Service) ($60,000) 2003-2005.

NASA: *A Workshop Planning Proposal for a Regional GOFC Workshop: GOFC Satellite Information Products for Forest and Land Management in Siberia/Far East.* PI Kathleen Bergen, (NASA LCLUC) ($34,091) 2002-2003.

START/NASA: *NASA GOFC Workshop: Support for Scientists from Developing Countries.* PI Kathleen Bergen (NASA LCLUC and START) ($7,975) 2002-2003.

USDA Forest Service: *Hotspots of Land-Cover Change in the North Central Region. USDA Forest Service.* Co-PI Kathleen Bergen with Co-PI Dan Brown (UM SNRE) (USDA Forest Service ($65,000) 2001-2003.

NSF: *BDEI: Radar Remote Sensing of Multi-Dimensional Habitat Structure.* NSF Biodiversity and Ecosystem Informatics. PI Kathleen Bergen with Co-I Dan Brown (UM SNRE) and Collaborators Craig Dobson (NASA) and Eric Gustafson (USFS), (NSF Biodiversity and Ecosystem Informatics) ($50,000) 2001-2003.

NASA: *Modeling Land-Cover Land-Use Change and Carbon in Siberian Boreal Forests under Changing Economic Paradigms.* PI Kathleen Bergen with Co-PIs Dan Brown (UM SNRE), Herman Shugart (Virginia), Eric Kasischke (Maryland), (NASA LCLUC/Carbon Cycle Science Program) ($582,991) 2001-2005.

NASA: *Developing Land-Cover Scenarios in Metropolitan and Non-Metropolitan Michigan, USA: A Stochastic Simulation Approach.* Co-I Kathleen Bergen with PI Dan Brown and Co-I Pierre Goovaerts (UM Engineering), (NASA LCLUC/Carbon Cycle Science Programs) ($598,589) 2001-2005.

USDA Forest Service. Hotspots of Land-Cover Change in the Upper Midwest. Co-Is Kathleen Bergen and Dan Brown, (USDA North Central Research Station Changing Midwest Assessment) ($60,000) 2001-2003.

NASA: *Influence of Humans, Climate, and Fire on Forest Ecosystems and Carbon Dynamics in Indonesian Borneo.* Co-I Kathleen Bergen with PI Lisa Curran (Yale) and Eric Kasischke (Maryland), (NASA LCLUC/Carbon Cycle Science Program) (approx. 600,000 total; $90,000 Michigan Contract) 2001-2004.

NSF: *Project SLUCE: Spatial Land-Use Change and Ecological Effects at the Urban-Rural Interface: Agent-Based Modeling and Evaluation of Alternative Policies*

and Interventions. Co-I Kathleen Bergen with PI Dan Brown and Co-Is Steve Yaffee, Bobbi Low, Rick Riolo, Joan Nassauer (NSF Biocomplexity and the Environment) (2,484,020) 2001-2005.

USDA Forest Service: *An Integrated Geoecosystem-Remote Sensing Approach to Ecosystem Management of Aspen-Dominated Forests in Northern Lower Michigan*. Co-PI with Co-PIs Burt Barnes (UM SNRE) and Tom Crow (USFS), (USDA Forest Service) ($69,476) 2000-2002.

Publications	**Submitted 2018-2019**

<u>Articles</u>

Benson, M., Pierce, L., **Bergen, K.**, and Sarabandi, K. (revised & resbumitted 2018). Model-Based Estimation of Forest Canopy Height and Biomass using Radar and Optical Remote Sensing with limited LiDAR Data.

Krawczyk, Eric, Foufopolous, J. and **K. Bergen**. (submitted 2019). The Effect of Touristic Development on Mediterranean Island Wildlife.

Papers Submitted and under Revision

<u>Articles</u>

Gentile, M., **Bergen, K**. (submitted 2018, under revision 2019). How are Mature Plantation Forests Affected by Long-Term Management Cessation? Findings from two Southeastern Michigan Landscapes. *Michigan Academician: Papers of the Michigan Academy of Science, Arts & Letters*.

Bergen, K., Loboda, T., Sun, G., Newell, J., Kharuk, V., Hitztaler, S., Johnson, T., Hoffman-Hall, A., Ouyang, W., Park, K., Fort, C. (submitted 2018, under revision 2019). How are landscapes changing in southern Siberia and the Russian Far East? A review and synthesis from Landsat.

Bergen, K.M., Ouyang, W., Xin, Y., Newell, J., Fort, C., Shugart, H.H., Brown, D., Loboda, T. & Shuman, J.K. (under revision 2019) How do natural and human factors affect forests in the Russian Far East?

Published

<u>Articles</u>

Bergen, Kathleen, Zhang, Zhenzhen, Tyrrell, Gerald, Von Kluge, Karen and Jacob Rumschlag (2018) Mapping Forest and Surrounding Landscape Changes 1949-2015 at The University of Michigan's Historic Forestry Education Properties. *Michigan Academician: Papers of the Michigan Academy of Science, Arts & Letters*, Vol. 45, no. 2, pp. 241-264. (Cover Photo of Saginaw Forest)

Cordero-Sancho, S. and **K. Bergen**. 2018. Relationships of Agricultural Land Use to an Expanded Road Network within Tropical Forest Landscapes of Cameroon and Republic of the Congo. *The Professional Geographer*, 70:60-72 DOI: 10.1080/00330124.2017.1325752.

Groisman, P., Shugart, H., Kicklighter, D., Henebry, G., Tchebakova, N., Maksyutov, S., Monier, E., Gutman, G., Gulev, S., Qi, J., Prishchepov, A., Kukavskaya, E., Porfiriev, B., Shiklomanov, A., Loboda, T., Shiklomanov, N., Nghiem, S., **Bergen, K.**, Albrechtová, J., Chen, J., Shahgedanova, M., Shvidenko, A., Speranskaya, N., Soja, A., de Beurs, K., Bulygina, O., McCarty, J., Zhuang, Q., and O. Zolina. 2017. Northern Eurasia Future Initiative (NEFI):

facing the challenges and pathways of global change in the twenty-first century. *Progress in Earth and Planetary Science.* 4:41 DOI 10.1186/s40645-017-0154-5.

Hitztaler, S. and **K. Bergen**. 2013. Mapping Resource Use over a Russian Landscape: An Integrated Look at Harvesting of a Non-Timber Forest Product in Central Kamchatka. *Environmental Research Letters*, 8: 045020.

Ahmed, R., Siqueira, P., Hensley, S. **Bergen, K.** 2013. Uncertainty of Forest Biomass Estimates in North Temperate Forests Due to Allometry: Implications for Remote Sensing, *Remote Sensing* 5:3007-3036.

Benson, M., Pierce, L., **Bergen, K**. and Sarabandi, K. Classifying the Canadian Boreal Forest's Structure using Multi-Modal Remote Sensing. 2012. *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Munich (July 2012), pp. 5329-5332.

Siqueira, P., C. Dickinson, R. Ahmed, B. Chapman, S. Hensley, **K. Bergen**, R. Lucas, D. Clewley, and IEEE. 2012. Analysis and Error Assessment on the use of Segmentation for Estimating Forest Structural Characteristics from Lidar and RADAR, in *2012 Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Munich (July 2012), pp. 5337-5339.

Ahmed, R., P. Siqueira, S. Hensley, B. Chapman, and **K. Bergen**. 2011. A Survey of Temporal Decorrelation from Spaceborne L-Band Repeat-Pass INSAR. *Remote Sensing of Environment*, 11:2887-2896.

Hall, F. G., **K. Bergen**, J. B. Blair, R. Dubayah, R. Houghton, G. Hurtt, J. Kellndorfer, M. Lefsky, J. Ranson, S. Saatchi, H. H. Shugart, and D. Wickland. 2011. Characterizing 3D vegetation structure from space: Mission requirements. *Remote Sensing of Environment*, 115:2753-2775.

Benson, M., Pierce, L., **Bergen, K**. and Sarabandi, K. Forest Structure Estimation using SAR, Lidar, and Optical Data in the Canadian Boreal Forest. 2011. *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Vancouver (July 2011).

Dronova, I, **Bergen, K.,** Ellsworth, D. 2011. Forest Canopy Properties and Variation in Aboveground Net Primary Production over Upper Great Lakes Landscapes. *Ecosystems*, 865-879.

Pierce, L. Benson, M. Sarabandi, K., **Bergen, K.,** Zhang K., Ryan, C. 2010. Extrapolation of Lidar for Forest Structure Estimation using SAR, IFSR, and Optical Data. *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Hawaii, July.

Ahmed, R., Siqueira, P., **Bergen, K.,** Chapman, B., Hensley, S. 2010. Biomass Estimate Over the Harvard Forest using Field Measurements with Radar and Lidar Data. *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Hawaii, July.

Bergen, K. M., S. J. Goetz, R. O. Dubayah, G. M. Henebry, C. T. Hunsaker, M. L. Imhoff, R. F. Nelson, G. G. Parker, and V. C. Radeloff. 2010. Remote Sensing of Vegetation 3-D Structure for Biodiversity and Habitat: Review and Implications for Lidar and Radar Spaceborne Missions. *Journal of Geophysical Research-Biospheres,* G00E06, doi:10.1029/2008JG000883.

Zhao, T., **Bergen, K.M.**, Brown, D.G., and H. Shugart. 2009. Scale-Dependence in Quantification of Land-Cover Change and Biomass in Siberian Boreal Forests. *Landscape Ecology,* 24: 1299-1313.

Qi S., Brown, D.G., Jiang, L., Tian, Q., Zhao, T., and **K. Bergen**. 2009. Inundation Extent and Flood Frequency Mapping for Poyang Lake Floodplain Using LANDSAT TM and DEM. *GIScience and Remote Sensing*, 46: 101-127.

Peterson, L.K., **Bergen, K.M.**, Brown, D.G., Vashchuk, L., and Y. Blam. 2009. Forested Land-Cover Patterns and Trends over Changing Forest Management Eras in the Siberian Baikal Region. *Forest Ecology & Management*, 257: 911-922.

Siqueira, P., Ahmed, R. **Bergen, K.**, Chapman, B. and S. Hensley. 2009. Biomass and Vegetation Structure Estimates from Combined LiDAR, SAR, and InSAR Observations Over the Harvard Forest. *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Cape Town, July 2009.

Bergen, K., Zhao, T., Kharuk, V., Blam, Y., Brown, D. Peterson, L., Miller, N. 2008. Changing Regimes: Forested Land-Cover Dynamics in Central Siberia 1974-2001, Special Issue on Mapping & Modeling Land Use/Land Cover Dynamics in Frontiers Settings, *Photogrammetric Engineering & Remote Sensing*, 74:787-798.

Luguang J., **K. Bergen**, D. Brown, Q. Tian, Q. Shuhua, T. Zhao, 2008. Land-Cover Change and Vulnerability to Flooding near Poyang Lake, Jiangxi Province, China, Special Issue on Mapping & Modeling Land Use/Land Cover Dynamics in Frontiers Settings, *Photogrammetric Engineering and Remote Sensing*, 74: 775-786.

Ahmed, R., P. Siqueira, S. Hensley, B. Chapman, and **K. Bergen**. 2008. Temporal Decorrelation Studies for Vegetation Parameter Estimation with Spaceborne Radars, *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Boston, July 7-11.

Bergen, K.M. and I. Dronova. 2007. Observing Succession on Aspen-Dominated Landscapes using a Remote Sensing-Ecosystem Approach, *Landscape Ecology*, 22(9): 1395-1410.

Bergen, K.M., A.M. Gilboy and D.G. Brown. 2007. Multi-Dimensional Vegetation Structure in Modeling Avian Habitat, *Ecological Informatics*, 2(1): 9-22.

Zhao, T.T., D.G. Brown and **K.M. Bergen**. 2007. Increasing Gross Primary Production (GPP) in the Urbanizing Landscapes of Southeastern Michigan, *Photogrammetric Engineering and Remote Sensing*, 73(10): 1159-1167.

Zhao, T., Brown, D., **Bergen, K.**, and A. Powers. 2005. Landscape and Productivity Changes in Southeastern Michigan, USA. *Proceedings: 9th International Symposium on Physical Measurements and Signature in Remote Sensing (ISPMSRS)*, Oct. 17-19, Beijing, China.

Bergen, K.M., D.G. Brown, J. Rutherford, E. Gustafson. 2005. Change Detection with Heterogeneous Data using Ecoregional Stratification, Statistical Summaries and a Land Allocation Algorithm. *Remote Sensing of Environment*, 97(4): 434-446.

Bergen, K., S. G. Conard, R. A. Houghton, E. S. Kasischke, S. Kharuk, O. Krankina, J. Ranson, H. H. Shugart, A. Sukhinin and R. F. Treyfeld. 2003. NASA and Russian Scientists Observe Land-Cover/Land-Use Change and Carbon in Russian Forests. *Journal of Forestry*, Special Issue on Technologies in Forestry, 34-41.

Bergen, K. M., E. Vaganov, G. Gutman and C. Justice. 2002. GOFC/GOLD Regional Workshop: GOFC/GOLD Information Products for Forest and Land Management in Siberia/Far East. *The Earth Observer* 14(6): 19-21.

Bergen, K.M., D.G. Brown, M.C. Dobson and E. Gustafson. 2002. Integrating Radar Remote Sensing of Forested Habitat Structure: A Pilot Project for Biodiversity Informatics. *Proceedings, National Science Foundation National Conference on Digital Government Research*, Los Angeles, pp. 149-154.

Bergen, K. M., Brown, D. G., Rutherford, J.R. and E. Gustafson. 2002. Remote Sensing of Hotspots of Land-Cover Change in the USFS North Central Region Using Heterogeneous USGS LUDA and NOAA AVHRR Data. *Proceedings,*

International Geosciences and Remote Sensing Symposium (IGARSS), Toronto, Canada, pp 1210-1212.

Karwan, D., D.A. Allan and **K.M. Bergen**. 2001. Changing Near-Stream Land Use and River Channel Morphology in the Venezuelan Andes. *Journal of American Water Resources Association*, December, pp. 1579-1587.

Bergen, K.M., J. Colwell, F. Sapio and J. Spruce. 2000. Forestry and Remote Sensing: Collaborative Implementation. *Journal of Forestry* Special Issue on Remote Sensing in Forestry, 98:4-9.

Bergen, K., D. Brown, C.E. Olson and T. Lillesand, 2000. Profiles in Curricula - Remote Sensing at the University of Michigan-Ann Arbor and University of Wisconsin-Madison (short feature), *Journal of Forestry*, 98(4): 32-33.

Bergen, K.M. and M.C. Dobson. 1999. Integration of Remotely Sensed Radar Imagery in Modelling and Mapping of Forest Biomass and Net Primary Production. *Ecological Modelling*, 122: 257-274.

Kasischke, E.S., **K. Bergen**, R. Fennimore, et al. 1999. Mapping the Severe 1998 Forest Fires in the Russian Far East using NOAA AVHRR Imagery. EOS Transactions. 80(13).

Dobson, M.C. and **K.M. Bergen**. 1999. Land-Cover Classification and Forest Biophysical Retrieval from SAR. *Proceedings of the Society American Foresters.*

Bergen, K.M. and M.C. Dobson. 1999. Monitoring Forest Biomass, Harvest, and ANPP using SAR*. Proceedings of the Society American Foresters.*

Pierce, L.E., **K.M. Bergen**, M.C. Dobson, and F.T. Ulaby. Multi-Temporal Land-Cover Classification Using SIR-C/X-SAR Imagery. *Remote Sensing of Environ*ment, 64:20-33, 1998.

Bergen, K.M., M.C. Dobson, L.E. Pierce, and F.T. Ulaby. 1998. Characterizing Carbon in a Northern Forest by using SIR-C/X-SAR Imagery. *Remote Sensing of Environment*, 63:24-39.

Bergen, K.M., R. DeRoo, C. Robinson and L.E. Pierce. 1998. A SIR-C Analysis of Coastal Sabkha*. Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS),* Seattle, WA.

Bergen, K.M., M.C. Dobson, and L.E. Pierce. 1997. Effects of Within-Season Moisture Variations on Terrain Classification Using SIR-C/X-SAR. *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS)*, Singapore, 1997.

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Selected Seminars, Papers, Presentations & Workshops

Bergen, K. *A New Model of Forest Succession at UMBS.* 2018. Presented at the UMBS Winter Research Meeting, Ann Arbor, February 2019.

Bergen, K. 2019. Linking drivers and Consequences of Land-Cover/Land-Use Change using Remote Sensing & Spatial Analysis. SEAS Lightning Talks – Conservation and Restoration, January 2019, SEAS, Ann Arbor

Bergen, K. and Wanqi Ouyang. 2017. *How do Natural and Human Factors affect Forests in the Russian Far East?* Presented at the American Association of Geographers East Lakes Annual Conference. November 2017, Eastern Michigan University, Ypsilanti MI.

Bergen, K. 2016. *Forest & Land-Cover/Land-Use Change at the SNRE Forest Properties.* Invited presentation to the Natural Areas Managers meeting. March 2016, Matthai Botanical Gardens.

Bergen, K. 2016. *Local Research: Forest & Land-Cover/Land-Use Change at the SNRE Forest Properties.* Presentation to the SNRE Faculty, as part of the Properties Committee Mandate, December 2016.

Soja, A., G. Henebry, D. Cahoon, B. Stocks, W. de Groot, N. Tchebakova, E. Parfenova, E. Kukavskaya, T. Loboda, J. McCarty, J. Shuman, H. Shugart, J. Chen, **K. Bergen**, S. Conard, B. Rogers, K. de Beurs, A. Prishchepov and Q. Zhuang. *Synthesis of Decades of Change in Northern Eurasian Ecosystems: Current Assessment and Future Projections.* Paper presented at the *American Geophysical Union Annual Conference*, San Francisco, Dec. 2015.

Bergen, K., T. Loboda, H. Shugart, J. Newell, J. Shuman, D. Brown, G. Sun, S. Hitztaler, W. Poon, A. Hall, A. Bowe. 2015. *LCLUC Synthesis: Forested Land-Cover and Land-Use Change in the Far East and East Siberia of Northern Eurasia under the Combined Drivers of Climate and Socio-Economic Transformation.* Poster presented at the NASA Carbon Cycle and Ecosystems Joint Science Workshop 2015, College Park MD.

Bergen, K. *Remote Sensing of Vegetation 3D Structure for Biodiversity and Habitat.* Invited Featured Presentation: NASA ICESAT-Landsat meeting, Ann Arbor, MI, May 2014.

Bergen, K., Loboda, T., Shugart, H. Sun, G., Newell, J., Brown, D., Shuman, J., Krankina, O., Hitztaler, S. LCLUC SYNTHESIS: *Forested Land Cover and Land Use Change in Central Siberia and the Far East of the Northern Eurasia Under the*

Combined Drivers of Climate and Socio-Economic Transformation. Invited Featured Presentation: NASA Land-Cover/Land-Use Change Program annual meeting, Rockville, MD, April 2014.

Bergen, K. Bergen, K., Loboda, T. Newell, J., Sun, G., Krankina, O., Blam, Y., Cui, L., Estrada, J., Hall, A., Hitztaler, S., Johnson, T., Park, K., Wang, Y., Wang Y.C., Wen, X. (2014) *Synthesis of Long-Term Datasets and of Trends and Variation of Landscape LCLUC Across The Russian Far East and Central Siberia*. Poster presented at NASA LCLUC Annual Meeting, Rockville, MD, April 2014.

Hitztaler, S. and **Bergen, K**. *Linking 'People and Pixels' in the Russian Far East: an Integrated Look at Harvesting of a Non-Timber Forest Product in Central Kamchatka.* Poster presented at NASA LCLUC Annual Meeting, Rockville, MD, April 2014.

Cordero-Sancho, S. and K. Bergen*. Relationships of Small-Scale Agricultural Land Uses to Roads and other Anthropogenic Features within Congo Basin Frontier Forested Landscapes.* Central African Forests and Institutions Conference, Paris, France, October 2013.

Bergen, K., Loboda, T., Shugart, H. Sun, G., Newell, J., Brown, D., Shuman, J., Krankina, O., Hitztaler, S. LCLUC SYNTHESIS: *Forested Land Cover and Land Use Change in the Far East of the Northern Eurasia Under the Combined Drivers of Climate and Socio-Economic Transformation*. Invited Featured Presentation: NASA Land-Cover/Land-Use Change Program annual meeting, Rockville, MD, 2013.

Bergen, K., Kharuk, V., Loboda, T., Shugart, H. Sun, G., Newell, J., Brown, D., Shuman, J., Krankina, O., Hitztaler, S. LCLUC SYNTHESIS: *Forested Land Cover and Land Use Change in the Far East of the Northern Eurasia Under the Combined Drivers of Climate and Socio-Economic Transformation*. NASA Land-Cover/Land-Use Change Program annual meeting, Rockville, MD, 2012.

Siqueira, P., Ahmed, R., Dickinson, C., Chapman, B., Hensley, **B., Bergen, K**. 2011. *A segmentation approach for estimating forest structural characteristics from lidar and radar: analysis and error assessment*. Poster given at NASA Carbon Cycle & Ecosystems Annual Conference, Alexandria, VA 2011.

Benson, M., Pierce, L., **Bergen, K.**, Sarabandi, K., Zhang, K. 2011. *Forest structure estimation using SAR, lidar and optical data in the Canadian Boreal forest*. Poster given at NASA Carbon Cycle & Ecosystems Annual Conference, Alexandria, VA 2011.

Bergen, K., Hitztaler, S., Kharuk, V., Krankina, O., Zhao, T., Loboda, T. and G. Sun. *Human Dimensions of Environmental Change in Siberia.* NASA Land-Cover/Land-Use Change annual meeting, College Park, MD, March 2011 (given by Bergen).

Wang, J., Brown, D., Xie, Y., **Bergen, K.**, Agrawal, A. and W. Welsh. 2011. *Grassland Ecosystems and Societal Adaptations under Changing Climate and Grazing Intensity on the Mongolian Plateau.* NASA Land-Cover/Land-Use Change annual meeting, College Park, MD, March 2011 (given by Wang).

Cordero-Sancho, S., **Bergen, K.**, Kornak, R., Brown, D., Hardin, R., and A. Agrawal. *Fine Scale Land Cover and Human-Natural Disturbances in Congo Basin Forests.* Association of American Geographers, Seattle, WA, April 2011 (given by Cordero-Sancho).

Wang, J., Brown, D., Xie, Y., **Bergen, K.**, Agrawal, A. and W. Welsh. 2011. *Grassland Ecosystems and Societal Adaptations under Changing Climate and Grazing Intensity on the Mongolian Plateau.* Association of American

Geographers, Seattle, WA, April 2011 (given by Wang).

Bergen, K. M., Dubayah, R.O., Goetz, S.J. *Desdyni Biodiversity and Habitat Key Variables and Implications for Lidar-Radar Fusion. International Geosciences and Remote Sensing Symposium (IGARSS*), Hawaii, July 2010. (given by Dubayah).

Bergen, K., Kornak, R., Cordero-Sancho, S. *State-of-the-Art of Remote Sensing of Congo Basin Forests: A Review.* CAFI (Central African Forests and Institutions) Conference & Advisory Meeting, Ann Arbor, May 2010.

Kornak, R., **Bergen, K**., Cordero-Sancho, S. *Spatial Analysis of Changes in Forest Management and Logging Roads in Cameroon and the Republic of Congo, 1985 - 2008.* CAFI (Central African Forests and Institutions) Conference & Advisory Meeting, Ann Arbor, May 2010.

Cordero-Sancho, S. **Bergen, K**., Kornak, R., *Fine Resolution Imagery Observations in The Congo Basin.* CAFI (Central African Forests and Institutions) Conference & Advisory Meeting, Ann Arbor, May 2010.

Cook, B., Dubayah, R., **Bergen, K**. and multiple co-authors. *Field and Aircraft Observations in Support of DESDynI. NASA Terrestrial Ecocystems.* Annual Meeting. Pasadena. March 2010.

Bergen, K. M., S. J. Goetz, R. O. Dubayah, G. M. Henebry, C. T. Hunsaker, M. L. Imhoff, R. F. Nelson, G. G. Parker, and V. C. Radeloff. *Remote Sensing of Vegetation 3-D Structure for Biodiversity and Habitat: Review and Implications for Lidar and Radar Spaceborne Missions.* Silvilaser Conference 2010. College Station, TX, October 2010. (invited Keynote)

Bergen, K., Kornak, R., Cordero-Sancho, S. *CAFI GIS and Remote Sensing.* CAFI (Central African Forests and Institutions) Advisory Meeting, Ann Arbor, May 2009.

Bergen, K. 2008. *DESDynI Biodiversity & Habitat Requirements.* DESDynI Planning Meeting, Greenbelt MD, October 2008.

Dubayah, R., Saatchi, S., Shugart, H., Houghton, R., Hall, F., Moorcroft, P., **Bergen, K**., Ranson, J., Kellndorfer, J., Emmanuel, W. Wickland, D. 2008. *Global Vegetation Structure from NASA's DESDynI Mission: An Overview.* American Geophysical Union Conference, San Francisco, Dec. 8-12.

Asner, G., Goetz, S., **Bergen, K.,** Coops, N., Fan, W., Follows, M., Nightingale, J., Oliver, M., Radeloff, V., Smith, T., Waring, R. 2008. *Biodiversity Studies in the NASA Remote Sensing Programs.* Plenary delivered (by S. Goetz) at NASA Carbon Cycle and Ecosystems: Joint Science Workshop College Park, MD, May 2-6.

Siquiera, P., Ahmed, R., Chapman, B., **Bergen, K**. *Temporal Decorrelation over Harvard Forest.* 2008. Poster presented at NASA Carbon Cycle and Ecosystems: Joint Science Workshop, College Park, MD, May 2-6.

Ahmed, R. Siqueira, P., Chapman, B., Hensley, S., **Bergen, K**. *A Survey of Temporal Decorrelation from Spaceborne L-band Repeat-pass InSAR.* Poster presented at NASA Carbon Cycle and Ecosystems: Joint Science Workshop, College Park, MD, May 2-6.

Bergen, K., Kwaiser, K. Brown, D. et al. 2008 *Poyang Lake Wetlands: Cover Types, Gradients and Habitats.* Illustrated paper presented at: Association of American Geographers Annual Conference, Boston, MA April 14-18.

Bergen, K., Luguang J., Brown, D., Zhao, T., Tian, Q., Shuhua, Q. *Land-Cover Change and Vulnerability to Flooding in the Poyang Lake Region, China.* 2008. Seminar presented at the 2008 SNRE Faculty-Ph.D. Seminar Series.

Bergen, K. and Goetz, S. (plenary paper). 2008. *The Importance of Vegetation 3D Structure and Biomass to Biodiversity Science and Management.* Workshop on Vegetation 3D Structure and Biomass held March 3-5, 2008 at the University of Virginia, Charlottesville.

Siquiera, P., Ahmed, R., **Bergen, K.** 2008. *Temporal Decorrelation over Harvard Forest.* Poster presented at NASA Vegetation 3D Structure & Biomass Workshop, Charlottesville, VA.

Jiang, L. and **Bergen, K.M.** (Co-Presenters). 2007. *Land-Cover Change and Vulnerability to Flooding Near Poyang Lake China,* NSF Poyang Lake Coupled Human-Natural Systems International Planning Meeting. November 5-9.

Siquiera, P., Chapman, B., Hensley, S., **Bergen, K.M.** 2007. *Temporal Decorrelation Studies Relevant for an InSAR Vegetation Mission: Early Results.* Poster presented at NASA DESDYNI Workshop, Orlando, FL, July 16-19.

Bergen, K., Gilboy, A., Brown, D. 2007. *Multi-Dimensional Vegetation Structure in Modeling Avian Habitat.* Poster presented at NASA DESDYNI Workshop, Orlando, FL, July 16-19.

Bergen, K.M., Brown D.G., Tingting Zhao and Qing Tian, Shuming Bao. 2006. *Changing Responses of Land Dynamics and Vulnerability to Flooding under Policy and Environmental Change, Poyang Lake China.* Poster presented at NASA Carbon and Ecosystems Workshop, University of Maryland, College Park, MD, August 20-24.

Zhao, T., **Bergen, K.M.**, Brown, D., Powers, A. 2005*. Land-Cover and Productivity Changes in Southeastern Michigan, USA.* International Society of Photogrammetry and Remote Sensing, Beijing, October 4-6, 2005.

Bergen, K.M., Zhao, T., Peterson, L., Kharuk, S., Brown, D. 2005. *Changing Trends in Forest Type and Age in Central Siberian Russia, 1975-2000.* Association of American Geographers Annual Conference, Denver, CO, April 6-10. Presenter and Session Chair.

Zhao, T., **Bergen, K.**, Brown, D. 2005*. Scales of Land-Cover and Disturbance in Siberian Russia: Landscapes Identified at Landsat and MODIS Resolutions.* Association of American Geographers Annual Conference, Denver CO, April 6-10.

Zhao, T., **Bergen, K.M.**, Brown, D., Powers, A. 2005. *Land-Cover and Productivity Changes in Southeastern Michigan, USA.* Association of American Geographers Annual Conference, Denver, CO, April 6-10.

Hitztaler, S. and **K. Bergen**. 2005. *Spatial Analysis of Siberian Boreal Forest Land-Cover Change and Case Study in Kamchatka.* International Conference on Land-Cover and Land-Use Change Processes in Far East Asia Region. Harbin, China, Feb. 2-5.

Bergen, K.M. et al. 2004. *Modeling Siberian Boreal Forest Land-Cover Change and Carbon under Changing Economic Paradigms.* Invited presentation for Annual NASA LCLUC Meeting - Boreal Section, College Park, MD., Jan. 20-22.

Bergen, K.M. *InSAR & Land-Cover.* 2004. Vegetation/Land-Cover Section Leader and Speaker. *NASA and Interagency workshop on Interferometric SAR.* Reported in: Standing Room Only Signals Zeal for Earth Imaging, *Nature*, Nov. 4, plus post-workshop report.

Bergen, K.M. 2004. *Forest Structure and Disturbance.* Invited speaker at the NASA Terrestrial Ecology Program annual Focus Area Review. NASA Headquarters, Washington, D.C.

Bergen, K.M. and T. Zhao. 2004. *Land-Cover Classification and Change Detection in the Siberian Boreal Forest.* NASA MODIS Validation Workshop. Boston

University, Boston, MA. February 2-4.

Bergen, K.M. 2004. *Pioneering NASA LCLUC Research Projects Mature 1997-2004.* Invited Keynote research results presentation for Annual NASA LCLUC Meeting - Boreal Section, College Park, MD., Jan. 20-22.

Hunsaker, C. T. and **K. M. Bergen.** 2003. *Importance of Vegetation Multi-Dimensional Structure to Biodiversity and Habitat Science and Management.* NASA Workshop: Multi-Dimensional Forested Ecosystem Structure - Requirements for Remote Sensing Observations, Annapolis, MD. June 23-25.

Bergen, K. M., Brown. D. G. and A. Gilboy. 2003. *Moving beyond a horizontal definition of landscape structure: the importance of forest multi-dimensional structure to biodiversity analyses in changing landscapes.* AGU (American Geophysical Union) Chapman Conference on Ecosystem Interaction with Land-Use Change, Santa Fe, NM. June 14-18.

Bergen, K. M., B. D. G. and J. R. Rutherford. 2003. *Using Remote Sensing to Update a National Land-Cover Classification in the Upper Midwest, USA for Mapping Hotspots of Land-Cover Change.* AGU Chapman Conference on Ecosystem Interactions with Land-Use Change, Santa Fe, NM. June 14-18.

Bergen, K.M., Peterson, L. 2003. *Linking Research and Education in the Study of the Boreal Forest.* Northern Eurasia Earth Science Partnership Initiative (NEESPI) Meeting, Suzdal, Russia, April 21-25.

Bergen, K. M., T. Zhao, L. Peterson, K. V. I., A. Soja, H. H. Shugart and Y. Blam. 2003. *Forest Dynamics in the East Siberian Boreal Forest: Analysis using Time-Series Statistical and Satellite Data.* 18th Annual Symposium of the International Association for Landscape Ecology-US Chapter, Banff, Alberta, CA.

Peterson, L., **K. M. Bergen**, L. Vaschuk, V. Olenik and W. A. Kurz. 2003. *Modeling forest land-cover change in the Irkutsk Region of Siberia.* 18th Annual Symposium of the International Association for Landscape Ecology-US Chapter, Banff, Alberta, CA.

Bergen, K. M., A. Gilboy, B. D. G. and E. J. Gustafson. 2003. *Radar Remote Sensing of Multi-Dimensional Habitat Structure: A Pilot Project for Biodiversity and Ecosystem Informatics.* National Science Foundation BDEI Workshop, Arlington, VA.

Bergen, K.M., D. Brown, H. Shugart, N. Miller, S. Kharuk, E. Kasischke. 2002. *LCLUC under Changing Socio-Economic Paradigms in Central Siberia.* Poster presented at NASA Land-Cover Land-Use Change Annual Meeting, College Park, October 2002.

Bergen, K. M. 2002. *Biodiversity and Ecosystem Informatics: VLDB Scientific Research or an Applications Area for Computer Database Technology?* VLDB: Very Large Databases, Hong Kong.

Bergen, K. M., N. Miller and J. E. Colwell. 2002. *A Categorical-Radiometric Method for Forest Land-Cover Change Detection in Russia Using Hybrid Landsat MSS, TM and ETM+ Data.* GOFC/GOLD Regional Workshop: GOFC/GOLD Information Products for Forest and Land Management in Siberia/Far East, Krasnoyarsk, Russia.

Bergen, K. M., D. G. Brown, C. M. Dobson and E. J. Gustafson. 2002. *Integrating Radar Remote Sensing of Habitat Structure: A Pilot Project for Biodiversity Informatics.* NSF National Conference on Digital Government Research, Los Angeles.

Miller, N., **K. Bergen**, S. Kharuk and J. Colwell (2002). *A categorical-radiometric method for forest land-cover change detection in Russia using hybrid Landsat*

MSS, Landsat TM, and Landsat ETM+ data. International Geosciences and Remote Sensing Symposium (IGARSS), Toronto, CA.

Bergen, K. M., Brown, D. G., J. R. Rutherford and E. J. Gustafson (2002). *Remote Sensing of Hotspots of Land-Cover Change in the USFS North Central Region Using Heterogeneous USGS LUDA and NOAA AVHRR Data.* International Geosciences and Remote Sensing Symposium (IGARSS), Toronto, Canada.

Bergen, K.M. *Forest Composition, Structure, and Carbon ... and Structure.* 2002. Faculty/Ph.D. Seminar, School of Natural Resources and Environment, University of Michigan, invited seminar.

Bergen, K.M. 2002. *NASA LCLUC: Effect of Changing Economics on LCLUC and Carbon in Central Siberian Boreal Forest.* NASA-Russian Academy of Sciences Northern Eurasian Earth Science Planning Initiative (NEESPI) working meeting, Moscow, Russia, February 2002.

Bergen, K.M. USDA Forest Service, North Central Research Station, Rhinelander, WI. Hotspots of Land-Cover Change in the Upper Midwest Workshop, invited participant, October 2001.

Bergen, K.M., D. Brown, H. Shugart, S. Kharuk, E. Kasischke 2001. *Modeling Siberian Boreal Forest Change and Carbon under Changing Economic Paradigms: Early Results.* Poster presented at NASA Land-Cover Land-Use Change Annual Meeting, College Park, invited poster, October 2001.

Bergen, K.M. Research and Education *Case Study: The University of Michigan Joint Program in Natural Resources & Environment and Russian & East European Studies.* GOFC Regional Workshop, Center for International Environmental Cooperation of Russian Academy of Sciences, St. Petersburg, Russia, invited poster, June 2001.

Bergen, K. 2001. *Assessing Biomass and Carbon in Michigan and Siberia from Remote Sensing.* European Commission. Joint Research Center, Ispra, Italy, invited seminar.

Bergen, K. 2001. NASA Earth Sciences Joint Working Group (ESJWG) Meeting, Washington, D.C., invited speaker and participant, April 2001.

Bergen, K. 2000. GOFC Global Boreal Forest Workshop, North America Working Group, invited rapporteur, August 2000.

Bergen, K. *Characterizing Carbon in a Northern Forest using SIR-C/S-SAR.* The Ecosystems Center, Marine Biological Laboratory, seminar, May 2000.

D. Karwan, D. Allan and **K. Bergen**. 2000. International Conference on Riparian Ecology and Management in Multi-Land Use Watersheds, Portland, Oregon.

Bergen, K., E. Kasischke, H. Shugart, A. Soja, and D. Clark. 2000. *LCLUC along the Baikal-Amur Railway, Siberia.* NASA Land-Cover Land-Use Change Annual Meeting, Reston.

USDA Forest Health Workshop, St. Louis, MO, invited poster February 1999.

Bergen, K., and C. Dobson. 1998. *Land-Cover Classification and Forest Biophysical Retrieval from SAR,* Society of American Foresters 1998 National Convention, Traverse City, MI.

Bergen, K., and C. Dobson. 1998. *Monitoring Forest Biomass, Harvest, and ANPP using SAR,* Society of American Foresters 1998 National Convention, Traverse City, MI.

Archaeological Institute of America 99th Annual Meeting, Chicago, Illinois, invited panel (representing Farouk El-Baz), December, 1997.

Bergen, K., *Integration of Remotely Sensed Radar Imagery in Modelling and Mapping of Forest Biomass and Net Primary Production.* International Society for Ecological Modeling, Annual Meeting, Montreal, invited paper, August 1997.

Bergen, K.M., M.C. Dobson, and L.E. Pierce. 1997. *Effects of Within-Season Moisture Variations on Terrain Classification Using SIR-C/X-SAR.* 1997. The International Geoscience and Remote Sensing Symposium, Singapore.

Bergen, K.M., M.C. Dobson, and L.E. Pierce. 1996. Carbon Dynamics in Northern Forests using SIR-C/X-SAR Imagery. The International Geoscience and Remote Sensing Symposium Lincoln, Nebraska.

Bergen, K.M., L.E. Pierce, M.C. Dobson, and F.T. Ulaby. 1996. *A Multi-Temporal Classifier for SIR-C/X-SAR Imagery,* presented at International Geoscience and Remote Sensing Symposium (IGARRS), Lincoln, Nebraska, pp. 1568-1570.

Reviewing Activities	Journals

Ecological Informatics, Bioscience, Ecography, Bird Conservation International, Ecological Applications, Forest Science, Environmental Management, IEEE Transactions on Geoscience & Remote Sensing, International Journal of Remote Sensing, Journal of Forestry, Landscape Ecology, Oikos, Photogrammetric Engineering and Remote Sensing, Progress in Physical Geography, Remote Sensing of Environment, Geosciences and Remote Sensing Letters.

Granting Agencies

National Science Foundation, 2005, 2010; NASA Cryosphere 2009; NASA Terrestrial Ecology, 2003, 2004, 2005, 2008, 2009; NASA Biodiversity, 2004, 2008; NASA LBA, 2002; NASA New Investigator, 2002; NASA Graduate Student Fellowship 2004; NASA LCLUC, 2001, 2003, 2004, 2007, 2011, 2012, 2014, 2017; U.S. Forest Service, 2002, 2004; U.S. National Parks Service, 1999; U.S. State Department Civilian Research & Development Foundation Cooperative Grants Program, 2004, 2005; University of Michigan OVPR, 2007.

Service to the University of Michigan

Administrative oversight, SEAS Environmental Spatial Analysis Laboratory (ESALab), 2015-present.

Acting Director, University campus-wide Certificate Program in Spatial Information, 2018-present, faculty member 2001-present

Michigan Institute for Data Science. Affiliated faculty, 2017-present

UM Center for Russian and East European Studies (CREES), Faculty Associate, 2000-present

University of Michigan Life Sciences Orchestra (an auditioned ensemble, two performances at Hill Auditorium annually), representing SEAS, 2013-present.

GIS Day Activities – SEAS, annually 2000-present

Committee to develop a database for SEAS forest properties 2017-present

SEAS/SNRE Environmental Informatics faculty group, SNRE, 2006 – present

SEAS/SNRE Conservation Ecology faculty group, SNRE, 2006-present

SEAS/SNRE Properties committee, SNRE 2012 - present

SNRE Terrestrial Ecosystems faculty group, SNRE, 2000 – 2009

SNRE Resource Ecology and Management faculty group, SNRE, 2000 – 2003

SNRE-wide Ph.D. Program Committee, Member, 2008

Member, University of Michigan Spatial Analysis/GIS Initiative (UM SAGIS), speaker series 2000-2003

Chair, UM SAGIS Data & Metadata Committee, 2000-2002

Distinguished Faculty and Student Seminar Series in Spatial Information, The University of Michigan, Organizing Committee Member, 1996-1997

SNRE Promotion & Tenure Committee, Graduate Student Rep, 1994-1995.

UROP Program, 2000, 2001

Professional Experience & Service

NASA Northern Eurasia Future Initiative (NEFI), member and Science Plan contributor, 2016-present

NASA Headquarters DESDynI Ecology Science Study Team, 2008-2012

Workshop Organizing Committee, NASA Vegetation 3D Structure and Biomass 2007-2008

Co-Organizer, NSF-Sponsored Poyang Lake Coupled Human-Natural Systems International Planning Meeting

NASA DESDYNI Workshop. Co-chair for Ecosystem Biodiversity and Structure Science breakouts. Orlando, FL, July 16-19 (also post-workshop written report)

NASA Carbon and Ecosystems Workshop 2007. Co-chair, breakout for vegetation 3D structure mission planning (also post-workshop recommendations)

NASA DESDYNI planning committees (space sensor data and mission planning), 2006-present

NASA Terrestrial Ecology Annual Review presentation, NASA HQ, 2005

NASA/Interagency InSAR Workshop, Land-Cover Section Leader, 2004 (and post-workshop report)

NASA Northern Eurasia Earth Science Partnership Initiative (NEESPI), member and Science Plan contributor, 2003 – 2015

NSF Digital Government Program – Biodiversity and Ecosystem Informatics team member 2002 – 2004

Co-Chair, NASA Terrestrial Ecology workshop: Multi-Dimensional Forested Ecosystem: Requirements for Remote Sensing Observations, 2003 (and post-workshop report)

Team member: NASA LCLUC/Carbon Cycle Science, 2001 – present

Team member, NSF Biodiversity and Ecosystem Informatics, 2001 – 2004

Consulting Scientist, ERIM, 2000 – 2001

Chair: NASA Global Observation of Forest Cover (GOFC) Workshop: Krasnoyarsk, Russia, 2000 (and post-workshop summary paper)

NASA-NOAA-Russia Earth Science Joint Working Group (ESJWG), 2000 – 2003

Kyoto Protocol Workshop, University of Michigan, Ann Arbor, participant, 1999

USFS Remote Sensing Analysis Center, Salt Lake City, Utah, seminar, Aug 1999

Decision Support Systems in Forest Management, Asheville, NC, USFS SE Research Station, participant

Editorial Board, Society of American Foresters, Journal of Forestry, 1998 – 2003

Durfee Foundation EARTHWATCH field experience (NASA SIR-C ecology, 1992, 1994)

Honors / Awards / Appointments

(for Service Appointments, please see above)

Nominated by SNRE for a UM-wide Research Scientist Achievement Award

Promoted to Associate Research Scientist, University of Michigan, 2009

Offered Assistant Professor, 1998, Michigan State University – declined

Offered Assistant Professor, 1996, Virginia Technological University – declined

Listed in Who's Who in America, 2002, 2004, 2005, 2008 (and invited subsequently)

Listed in Who's Who in American Women, 2001, 2002, 2003 (and invited subsequently) (requested thereafter but I decided not to)

NASA SIRC Terrestrial Ecology grant supported 100% of Ph.D. program

Member of *Xi Sigma Pi* Forestry Honor Society. Elected Secretary/Treasurer, The University of Michigan Chapter of *Xi Sigma Pi*, 1993

Recipient of the 1986 SLA Geography & Map Division Bulletin Award (for best article pub. in the Bulletin)

Recipient of the 1982 "Donald H. Wing Award" (for best graduate research paper), School of Information Science, University of Illinois

University of Illinois Library Graduate Assistantships supported 100% of M.S. program

Gamma Theta Upsilon Geography Honor Society

Beta Phi Mu Information Science Honor Society

Recipient of the 1981 Western Illinois University Gamma *Theta Upsilon* Award for outstanding undergraduate research paper

Professional Affiliations	Member, Association of American Geographers (1997 – present)
	Member, Association for Member, Ecological Society of America (1995 – 2005)
	Member of the Society of American Foresters (1998 – 2004)
	Member, American Library Association (1981-1991)
	Member North American Cartographic Information Society (NACIS), (1985-1988)
	Member, Michigan Library Association (1982-1985)
	Member, Michigan Map Society (1982-1992)

Students	From 2000-present Dr. Bergen has advised and/or mentored PhD, Graduate, Undergraduate students in SEAS/SNRE, Data Science, School of Information (formerly SILS), and Russian & East European Studies. She has also regularly employed students of many other SEAS/SNRE faculty through her many sponsored projects over the past two decades.

PhD Students

PhD Co-Chair: Dr. Silvia Cordero-Sancho (SNRE), Dr. Tingting Zhao (SNRE)

PhD Committee Member: Dr. Amy Burnicki (SNRE), Dr. Juliet Estrada (Anthropology), Dr. David Marvin (EEB), Dr. Jun Wang (SEAS); Current: Maria Rodriguez Mustafa (Earth & Environmental Sciences)

PhD Prelim Committee: Dr. Dan Obenour

SEAS/SNRE MS Students

13 MS thesis advisees (Chair); 6 MS advisees (Committee member); 9 MS advisees (Project students); Mentored/Employed over 70 students of mine and other SEAS faculty as Research Assistants in the ESALab; these students worked on NASA and USFS research projects and some became co-authors on published papers and reports.

SI/SILS/Data Science Students

Employed/Mentored 3 students from SI and Data Science in the ESALab, 2011-2018

Director Field Experience Advisor for 1-2 SILS (School of Information) MS students per most semesters (~11 total) from 1982-1988 in the University of Michigan Library and Map Library.