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Dept. Forestry and Environmental Resources
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INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
Michigan Technological University, Houghton, MI <i>Advisor: David F. Karnosky</i>	PhD	2001	Forest Science
Michigan Technological University, Houghton, MI <i>Advisor: David F. Karnosky</i>	MS	1997	Forest Science
Tartu University, Estonia, <i>summa cum laude</i> <i>Advisors: Olevi Kull, Andres Koppel</i>	BS	1995	Biology

PROFESSIONAL EXPERIENCE

- 07.10 – current Research Associate Professor, Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, NC
- 12.06 – 06.10 Research Assistant Professor, DFER, NCSU, Raleigh, NC
- 12.06 – current Adjunct Assistant Professor of Ecology, Department of Environmental Sciences, University of Toledo
- 05.02 – 11.06 Research Assistant Professor, and Special Graduate Faculty, Department of Earth, Ecological and Environmental Sciences (EEES), University of Toledo (UT), Toledo, OH
- 10.01 – 05.02 Postdoctoral Research Associate, Laboratory of landscape Ecology and Ecosystem Sciences, EEES, UT. *Supervisor: Jiquan Chen*
- 05.01 – 08.01 Postdoctoral Research Associate, School of Forestry, Michigan Technological University (MTU), Houghton, MI
- 06.96 – 04.01 Graduate Research Assistant, School of Forestry and Wood Products, MTU
- 10.92 – 05.96 Laboratory Assistant, Institute of Zoology and Botany, Tartu, Estonia

RESEARCH SUPPORT (Total received: \$3,648,598)

- “Southeast Climate Science Center (SECSC) Graduate Research Assistantship at NC State” 09.2011-08.2012 (King, Noormets, Domec), Department of the Interior US Geological Survey Southeast Climate Science Center, \$21,000.
- “Quantifying the Effect of Nighttime Interactions Between Roots and Canopy Physiology and Their Control of Water and Carbon Cycling on Feedbacks Between Soil Moisture and Terrestrial Climatology Under Variable Environmental Conditions” 09.2011-08.2013 (Domec, Noormets, King, Oren, Katul, Palmroth), DOE-TCCR, \$450,000.
- “Integrating research, education and extension for enhancing southern pine climate change mitigation and adaptation” 03.2011-12.2015 (Martin et al.), USDA-AFRI, \$20,000,000. \$1,058,846 subaward to Noormets, Domec and King.
- “Partitioning ecosystem respiration in lower coastal plain forests: Quantifying sensitivity of soil C and N cycling to variation in the water table” 06.2008-11.2011 (King, Noormets), DOE-NICCR, \$369,964.
- “Coupling the effects of management and climate on carbon and water fluxes in forests of Eastern U.S. and P.R.C.” 07.2006-06.2007 (Chen, Noormets, DeForest, Sun), USDA FS Southern Global Climate Change Program, \$159,800.

- “Coupling the effects of management and climate on carbon and water fluxes in forests of Eastern U.S. and P.R.C.” 08.2005-07.2006 (Chen, Noormets, Sun), USDA FS Southern Global Climate Change Program, \$165,252.
- “Effects of Land Use Change on the Energy and Water Balance of the Semi-Arid Region of Inner Mongolia, China” 07.2005-07.2008. (Chen, Noormets, McNulty, Sun, Xiao, Lin, Wang) NASA Energy and water-cycle sponsored research, \$600,870.
- “Coupling the effects of management and climate on carbon and water fluxes in forests of Eastern U.S. and P.R.C.” 08.2004-07.2005 (Chen, Noormets, Sun) (1) USDA FS Southern Global Climate Change Program, \$251,610. (2) Ohio Board of Regents Action Fund, \$60,000. (3) The University of Toledo, \$241,075.
- “Coupling the effects of management and climate on carbon and water fluxes in forests of Eastern U.S. and P.R.C.” 08.2003-05.2004. (Chen, Noormets, Sun, Mickler, Wang). USDA FS Southern Global Climate Change Program, \$225,177.
- “Cumulative carbon flux at managed landscapes in northern Wisconsin” 08.2003-12.2003. (Chen & Noormets) USDA FS Northern Global Climate Change Program, \$40,000.

TEACHING

FOR303 (2011) – Silvics and Tree Physiology, co-instructor

FOR575 (2011) – Advanced Terrestrial Ecosystem Ecology, Primary instructor

FOR595A (2009) – Advanced Terrestrial Ecosystem Ecology. Sections: (i) Carbon inputs to ecosystem, (ii) Terrestrial Production, (iii) Terrestrial decomposition (instructor J. King, NCSU)

FOR503 (2008) – Tree Physiology, Section: (i) Photosynthesis and Respiration (instructor J. King, NCSU)

EEES 4980/6980 (2003) – Environmental Stress Physiology, primary instructor

EEES 4660/6660 (2002, 2005) – Environmental Biophysics, Sections: (i) Water vapor and other gases, (ii) Liquid water in organisms and their environment, and (iii) Atmospheric turbulence (instructor J. Chen, UT)

EEES 6980 (2002) - Current Issues In Eco- & Geo-Sciences, Section: FACE and elevated CO₂ research (instructor J. Chen, UT)

FW560 (2000) – Tree Physiology, Section: Photosynthesis (instructor D.F. Karnosky, MTU)

GRADUATE STUDENTS ADVISED

Primary or co-adviser

1. Wen Lin, PhD, NCSU, 2011-, topic to be determined (co-advised with Jean-Christophe Domec)
2. Guofang Miyao, PhD, NCSU, 2008-, Partitioning ecosystem respiration in lower coastal plain forests: Quantifying sensitivity of soil C and N cycling to variation in the water table (co-advised with John King)
3. Siyao Zhang, PhD, NCSU, 2008-, Partitioning ecosystem respiration in lower coastal plain forests: Quantifying sensitivity of soil C and N cycling to variation in the water table (co-advised with John King)
4. Ilona Ilinczki, PhD, UT, 2004-2005, transferred without defending (co-advised with Jiquan Chen)

Committee member

1. Laurie Gharis, PhD, NCSU, 2010-, (Adviser: Joseph Roise)
2. Jianye Xu, PhD, UToledo, 2009-, (Adviser: Jiquan Chen)
3. Nan Lu, PhD, UT, 2005-2009, (Adviser: Jiquan Chen)
4. Dan Wang, PhD, UT, 2005-2008 (Adviser: Scott Heckathorn)
5. Gwendolyn Tenney, MS, UT, 2005-2007 (Adviser: Jiquan Chen)
6. John Rademacher, MS, UT, 2002-2004 (Adviser: Jiquan Chen)

7. Stephen Mather, MS, UT, 2003-2005 (Adviser: Jiquan Chen)
8. Li Wu, PhD, UT, 2004, transferred without defending (Adviser: Jiquan Chen)

REFEREED PUBLICATIONS

Statistics 12/15/2011: career average 83 citations per year, *h-index*=19 (number of papers that each have been cited as many times), *g-index*=35 (number of papers that all combined have earned $35^2=1225$ citations).

1. Domec JC, Sun G, **Noormets A**, Gavazzi MJ, Treasure EA, Cohen E, Swenson J, McNulty SG, King JS. 2012. Water flux components and their responses to drought in two intensively managed coastal plain loblolly pine forests: method comparisons. *Forest Science* (Accepted).
2. John R, Chen J, **Noormets A**, Xiao X, Xu J, Lu N, Chen S. 2012. Modeling gross primary production in semi-arid Inner Mongolia using MODIS imagery and eddy covariance data. *International Journal of Remote Sensing* (Accepted).
3. Domec JC, Ogee J, **Noormets A**, Jouangy J, Gavazzi MJ, Treasure EA, Sun G, McNulty SG, King JS. 2012. The impact of soil texture and future climatic conditions on root hydraulic redistribution and consequences for the carbon and water budgets of Southern US pine plantations. *Tree Physiology* (Accepted).
4. Sun G, Caldwell P, **Noormets A**, McNulty SG, Cohen E, Moore Myers J, Domec JC, Treasure EA, Mu Q, Xiao J, John R, Chen J. 2011. Upscaling key ecosystem functions across the conterminous United States by a water-centric ecosystem model. *Journal of Geophysical Research-Biogeosciences* doi:10.1029/2010JG001573.
5. Xiao J, Zhuang Q, Law BE, Baldocchi DD, Chen J, Richardson AD, Melillo JM, Davis KJ, Hollinger DY, Wharton S, Oren R, **Noormets A**, Fischer ML, Verma SB, Cook DR, Sun G, McNulty S, Wofsy SC, Bolstad PV, Burns SP, Curtis PS, Drake BG, Falk M, Foster DR, Gu L, Hadley JL, Katul GG, Litvak M, Ma S, Martin TA, Matamala R, Meyers TP, Monson RK, Munger JW, Oechel WC, Paw UKT, Schmid HP, Scott RL, Starr G, Suyker AE, Torn MS. 2011. Assessing net ecosystem carbon exchange of U.S. terrestrial ecosystems by integrating eddy covariance flux measurements and satellite observations. *Agricultural and Forest Meteorology* 151:60-9.
6. Sun G, Alstad KP, Chen J, Chen S, Ford CR, Lin G, Liu C, Lu N, McNulty SG, Miao H, **Noormets A**, Vose JM, Wilske B, Zeppel M, Zhang Y, Zhang Z. 2010. A general predictive model for estimating monthly ecosystem evapotranspiration. *Ecohydrology*, DOI: 10.1002/eco.194.
7. Yi C, Ricciuto DA, Li R, Wolbeck J, Xu X, Nilsson M, Aires L, Albertson JD, Ammann C, Arain MA, de Araujo AC, Aubinet M, Aurela M, Barcza Z, Barr A, Berbigier P, Beringer J, Bernhofer C, Black TA, Bolstad PV, Bosveld FC, Broadmeadow MSJ, Buchmann N, Burns SP, Cellier P, Chen J, Chen J, Ciais P, Clement R, Cook BD, Curtis PS, Dail BD, Dellwik E, Delpierre N, Desai AR, Dore S, Dragoni D, Drake BG, Dufrene E, Dunn A, Elbers J, Eugster W, Falk M, Feigenwinter C, Flanagan LB, Foken T, Frank J, Fuhrer J, Gianelle D, Goldstein A, Goulden M, Granier A, Grünwald T, Gu L, Guo H, Hammerle A, Han S-J, Hanan NP, Haszpra L, Heinesch B, Helfter C, Hendriks D, Hutley LB, Ibrom A, Jacobs C, Johansson T, Jongen M, Katul GG, Kiely G, Klumpp K, Knohl A, Kolb T, Kutsch WL, Lafleur PM, Laurila T, Leuning R, Lindroth A, Liu H, Loubet B, Manca G, Marek M, Margolis HA, Martin TA, Massman WJ, Matamala R, Matteucci G, McCaughey H, Merbold L, Meyers T, Migliavacca M, Miglietta F, Misson L, Mölder M, Moncrieff J, Monson RK, Montagnani L, Montes-Helu M, Moureaux C, Mukelabai MM, Munger JW, Myklebust M, Nagy Z, **Noormets A**, Oechel W, Oren R, Pallardy SG, Paw U KT, Pereira JS, Pilegaard K, Pinter K, Pio C, Pita G, Powell TL, Rambal S, Randerson J, von Randow C, Rebmann C, Rinne J, Rossi F, Roulet N, Ryel RJ, Sagerfors J, Saigusa N, Sanz MJ, Scarascia Mugnozza G, Schmid HP, Seufert G, Siqueira M, Soussana JF, Starr G, Sutton MA, Tenhunen J, Tuba Z, Tuovinen J, P., Valentini R, Vogel CS, Wang J, Wang S, Wang W, Welp LR, Wen XF, Wharton S, Wilkinson M, Williams CA, Wohlfahrt G, Yamamoto S, Yu GR, Zampedri R, Zhao B, Zhao X. 2010. Climate control of terrestrial carbon

exchange across biomes and continents. *Environmental Research Letters* 5: 034007. doi: 10.1088/1748-9326/5/3/034007.

8. Amiro BD, Barr AG, Barr JG, Black AT, Branco R, Brown M, Chen J, Clark KL, Davis KJ, Desai AR, Dore S, Engel VC, Fuentes JD, Goldstein AH, Goulden ML, Kolb TE, Lavigne MB, Law BE, Margolis HA, Martin T, McCaughey JH, Misson L, Montes-Helu M, **Noormets A**, Randerson JT, Starr G, Xiao J (2010) Ecosystem carbon dioxide fluxes after disturbance in forests of North America. *Journal of Geophysical Research. G. Biogeosciences* doi:10.1029/2010JG001390.
9. **Noormets A**, Sun G, McNulty SG, Gavazzi M, Chen J, Domec JC, King JS, Amatya DM, Skaggs RW, 2010. Corrigendum: "Energy and water balances of two contrasting loblolly pine plantations on the lower coastal plain of North Carolina, USA" *Foreco* 259: 1299-1310. *Forest Ecology and Management* 260: 169.
10. Domec JC, King JS, **Noormets A**, Treasure EA, Gavazzi MJ, Sun G, McNulty SG. 2010 Hydraulic redistribution of soil water affects whole stand evapotranspiration and net ecosystem carbon exchange. *New Phytologist* 187: 171-183.
11. Lenz KE, Host GE, Roskoski K, **Noormets A**, Sôber A, Karnosky DF. 2010. Analysis of a Farquhar-von Caemmerer-Berry leaf-level photosynthetic rate model for *Populus tremuloides* in the context of modeling and measurement limitations. *Environmental Pollution* 158: 1015-1022.
12. **Noormets A**, Kull O, Sôber A, Kubiske ME, Karnosky DF. 2010. Elevated CO₂ response of photosynthesis depends on ozone concentration in aspen. *Environmental Pollution* 158: 992-999.
13. **Noormets A**, McNulty SG, Gavazzi MJ, Sun G, Domec JC, King J, Chen J, 2010. Response of carbon fluxes to drought in a coastal plain loblolly pine forest. *Global Change Biology* 16: 272-287.
14. Sun G, **Noormets A**, Gavazzi M, McNulty SG, Chen J, Domec JC, King JS, Amatya DM, Skaggs RW, 2010. Energy and water balances of two contrasting loblolly pine plantations on the lower coastal plain of North Carolina, USA. *Forest Ecology and Management* 259: 1299-1310.
15. Xiao J, Zhuang Q, Law BE, Chen J, Baldocchi DD, Cook DR, Oren R, Richardson AD, Wharton S, Ma S, Martin TA, Verma SB, Suyker AE, Scott RL, Monson RK, Litvak M, Hollinger DY, Sun G, Davis KJ, Bolstad PV, Burns SP, Curtis PS, Drake BG, Falk M, Fischer ML, Foster DR, Gu L, Hadley JL, Katul GG, Matamala R, McNulty SG, Meyers TP, Munger JW, **Noormets A**, Oechel WC, Paw U KT, Schmid HP, Starr G, Torn MS, Wofsy S. 2010. A continuous measure of gross primary productivity for the conterminous U.S. derived from MODIS and AmeriFlux data. *Remote Sensing of Environment* 114: 576-591.
16. Guo HQ, **Noormets A**, Zhao B, Chen J, Sun G, Gu YL, B., Chen J. 2009. Tidal effects on net ecosystem exchange of carbon in an estuarine wetland. *Agricultural and Forest Meteorology* 149: 1820-1828.
17. Van Gorsel E, Delpierre N, Leuning R, Black AT, Munger JW, Wofsy SC, Aubinet M, Feigenwinter C, Beringer J, Bonal D, Chen BZ, Chen J, Clement R, Davis KJ, Desai A, Dragoni D, Etzold S, Grunwald T, Gu L, Heinesch B, Hutryra LR, Jans W, Kutsch W, Law BE, Leclerc MY, Mammarella I, Montagnani L, **Noormets A**, Rebmann C, Wharton S, 2009. Estimating nocturnal ecosystem respiration from the vertical turbulent flux and change in storage of CO₂. *Agricultural and Forest Meteorology* 149: 1919-1930.
18. Domec JC, **Noormets A**, King JS, Sun G, McNulty SG, Gavazzi MJ, Boggs JL, Treasure EA, 2009. Decoupling the influence of leaf and root hydraulic conductances on stomatal conductance and its sensitivity to vapor pressure deficit as soil dries in a drained loblolly pine plantation. *Plant, Cell and Environment* 32: 980-991.
19. Wilske B, Lu N, Wei L, Chen S, Zha T, Liu C, Xu W, **Noormets A**, Huang J, Wei Y, Chen J, Zhang Z, Ni J, Sun G, Guo K, McNulty SG, John R, Chen J, Han XG, Lin G. 2009. Poplar plantation has the potential to alter the water balance in semiarid Inner Mongolia. *Journal of Environmental Management* 90: 2762-2770.

20. Chen J, Bridgham SD, Pastor J, **Noormets A**, Keller J, Weltzin JF, 2008. Temperature responses to infrared-loading and water table manipulations in peatland mesocosms. *Journal of Integrative Plant Biology* 50: 1484-1496.
21. Xiao J, Zhuang Q, Baldocchi DD, Law BE, Richardson AD, Chen J, Oren R, Starr G, **Noormets A**, Ma S, Verma SB, Wharton S, Wofsy SC, Bolstad PV, Burns SP, Cook DR, Curtis PS, Drake BG, Falk M, Fischer ML, Foster DR, Gu L, Hadley JL, Hollinger DY, Katul GG, Litvak M, Martin TA, Matamala R, McNulty SG, Meyers TP, Monson RK, Munger JW, Oechel WC, Paw U KT, Schmid HP, Scott RL, Sun G, Suyker AE, Torn MS, 2008. Estimation of net ecosystem carbon exchange for the conterminous United States by combining MODIS and AmeriFlux data. *Agricultural and Forest Meteorology* 148: 1827-1847.
22. **Noormets A**, McNulty SG, DeForest JL, Sun G, Li Q and Chen J, 2008. Drought during canopy development has lasting effect on annual carbon balance in a deciduous temperate forest. *New Phytologist* 179: 818-828.
23. Desai AR, Richardson AD, Moffat AM, Kattge J, Hollinger DY, Barr A, Falge E, **Noormets A**, Papale D, Reichstein M, Stauch VJ, 2008. Cross site evaluation of eddy covariance GPP and RE decomposition techniques. *Agricultural and Forest Meteorology* 148: 821-838.
24. John R, Chen J, Lu N, Guo K, Liang C, Wei Y, **Noormets A**, Ma K, Han X. 2008. Predicting plant diversity based on remote sensing products in the semi-arid region of Inner Mongolia. *Remote Sensing of Environment* 112: 2018-2032.
25. **Noormets A**, Desai A, Cook BD, Euskirchen E, Ricciuto D, Davis KJ, Bolstad PV, Schmid HP, Vogel CV, Carey EV, Su HB, Chen J, 2008. Moisture sensitivity of ecosystem respiration. Comparison of 14 forest ecosystems in northern Wisconsin, USA. *Agricultural and Forest Meteorology* 148: 216-230.
26. Ryu S-R, Chen J, **Noormets A**, Bresee MK, Ollinger SV, 2008. Comparisons and insights of predicted (PnET-Day) and measured gross carbon exchange in northern Wisconsin forests. *Agricultural and Forest Meteorology* 148: 247-256.
27. Sun G, **Noormets A**, Chen J, McNulty SG, 2008. Evapotranspiration estimates from eddy covariance towers and hydrologic modeling in managed forests in Northern Wisconsin, USA. *Agricultural and Forest Meteorology* 148: 257-267.
28. Desai AR, **Noormets A**, Bolstad PV, Chen J, Cook BD, Curtis PV, Davis KJ, Euskirchen ES, Gough C, Martin JM, Ricciuto DM, Schmid HP, Su HB, Tang J, Vogel C, Wang W, 2008. Influence of vegetation type, stand age and climate on carbon dioxide fluxes across the Upper Midwest, USA: Implications for regional scaling of carbon flux. *Agricultural and Forest Meteorology* 148: 288-308.
29. Oren R, Kull K, **Noormets A**, 2008. Olevi Kull's lifetime contribution to ecology. *Tree Physiology* 28: 483-490.
30. Moffat AM, Papale D, Reichstein M, Barr AG, Beckstein C, Braswell BH, Churkina G, Desai AR, Falge E, Gove JH, Heimann M, Hollinger DY, Hui D, Jarvis AJ, Kattge J, **Noormets A**, Richardson AD, Stauch VJ. 2007. Comprehensive comparison of gap filling techniques for eddy covariance net carbon fluxes. *Agricultural and Forest Meteorology* 147: 209-232.
31. **Noormets A**, Chen J, Crow T, 2007. Age-dependent changes in ecosystem carbon fluxes in managed forests in northern Wisconsin, USA. *Ecosystems* 10: 187-203.
32. DeForest JL, **Noormets A**, McNulty SG, Tenney G, Sun G, Chen J, 2006. Phenophases alter the soil respiration-temperature relationship in an oak-dominated forest. *International Journal of Biometeorology*, 51: 135-144.
33. Zheng D, Chen J, **Noormets A**, Euskirchen ES, Le Moine J, 2005. Effects of climate and land use on landscape soil respiration in northern Wisconsin, USA: 1972 to 2001. *Climate Research* 28: 163-173.
34. **Noormets A**, Chen J, Bridgham SD, Weltzin JF, Pastor J, Dewey B, LeMoine J, 2004. The effects of infrared loading and water table on soil energy fluxes in northern peatlands. *Ecosystems* 7: 573-582.

35. Chen J, Brosofske KD, **Noormets A**, Crow TR, Bresee MK, LeMoine JM, Euskirchen ES, Mather SV, Zheng D, 2003. A Working framework for quantifying carbon sequestration in disturbed land mosaics. *Environmental Management* **33**: S210-S221. art. no. 10.1007/s00267-003-9131-4.
36. Karnosky DF, Zak DR, Pregitzer KS, Awmack CS, Bockheim JG, Dickson RE, Hendrey G, Host GE, King JS, Kopper BJ, Kruger EL, Kubiske ME, Lindroth RL, Mattson WJ, McDonald EP, **Noormets A**, Oksanen E, Parsons WFJ, Percy KE, Podila GK, Riemenschneider DE, Sharma P, Thakur R, Sôber A, Sôber J, Jones WS, Anttonen S, Vapaavuori E, Isebrands JG, 2002. Tropospheric O₃ moderate responses of temperate hardwood forests to elevated CO₂: A synthesis of molecular to ecosystem results from the Aspen FACE project. *Functional Ecology* **17**: 289-304.
37. Karnosky DF, Percy KE, Xiang B, Callan B, **Noormets A**, Mankovska B, Hopkin A, Sôber J, Jones W, Dickson RE, Isebrands JG, 2001. Interacting elevated CO₂ and tropospheric O₃ predispose aspen (*Populus tremuloides* Michx.) to infection by rust (*Melampsora medusae* f. sp. *tremuloidae*). *Global Change Biology* **8**: 329-338.
38. Wustman BA, Oksanen E, Karnosky DF, **Noormets A**, Isebrands JG, Pregitzer KS, Hendrey GR, Sober J, Podila GK, 2001. Effects of elevated CO₂ and O₃ on aspen clones varying in O₃ sensitivity: can CO₂ ameliorate the harmful effects of O₃? *Environmental Pollution* **115**: 473-481.
39. **Noormets A**, McDonald EP, Dickson RE, Kruger EL, Sôber A, Isebrands JG, Karnosky DF, 2001. The effect of elevated CO₂ and O₃ on leaf and branch level photosynthesis and potential plant level carbon gain in aspen. *Trees – Structure and Function* **15**: 262-270.
40. **Noormets A**, Sôber A, Pell EJ, Dickson RE, Podila GK, Sôber J, Isebrands JG, Karnosky DF, 2001. Stomatal and non-stomatal limitation to photosynthesis in two trembling aspen (*Populus tremuloides* Michx.) clones exposed to elevated CO₂ and/or O₃. *Plant, Cell & Environment* **24**: 327-336.
41. **Noormets A**, Podila GK, Karnosky DF, 2000. Rapid response of antioxidant enzymes to O₃-induced oxidative stress in *Populus tremuloides* clones varying in O₃ tolerance. *Forest Genetics* **7**: 339-342.
42. Akkapeddi AS, **Noormets A**, Deo BK, Karnosky DF, Podila GK, 1999. Gene structure and expression of the aspen cytosolic copper/zinc-superoxide dismutase (PtSodCc1). *Plant Science* **143**: 151-162.
43. Karnosky DF, Mankovska B, Percy K, Dickson RE, Podila GK, Sôber J, **Noormets A**, Hendrey G, Coleman MD, Kubiske M, Pregitzer KS, Isebrands JG, 1999. Effects of tropospheric O₃ on trembling aspen and interaction with CO₂: Results from an O₃-gradient and a FACE experiment. *Water, Air and Soil Pollution* **116**: 311-322.
44. Kull O, Koppel A, **Noormets A**, 1998. Seasonal changes in leaf nitrogen pools in two *Salix* species. *Tree Physiology* **18**: 45-51.

BOOKS

1. **Noormets A** (Ed.), 2009. Phenology of ecosystem processes: Applications in global change research. Springer, New York, pp. 275.

BOOK CHAPTERS

1. **Noormets A**, 2009. Olevi Kull, metsapuude ökoloogia parim teadja. In: Lehed ja Tähed 5: Vaim ja Aeg (Eds. Rohtmets I and Kukk T). MTÜ Loodusajakiri, Tartu, pp. 220-227
2. **Noormets A**, 2009. Preface. In: Phenology of ecosystem processes (Ed. Noormets A), Springer, New York, pp. vii-x.
3. **Noormets A**, Chen J, Gu L, Desai A, 2009. The phenology of gross ecosystem productivity and ecosystem respiration in temperate hardwood and conifer chronosequences. In: Phenology of ecosystem processes (Ed. Noormets A), Springer, New York, pp. 59-85.
4. Silbernagel J, Chen J, **Noormets A**, Song B, 2006. Conducting sound ecological studies at the landscape scale: hypotheses, experiments and challenges. In: Ecology of Hierarchical Landscapes:

From Theory to Application (Eds. Jiquan Chen, Sari C. Saunders, Kimberly D. Brosofske, and Thomas R. Crow), Nova Publishing, Carbondale, IL, USA, pp. 283-297.

5. **Noormets A**, Ewers B, Sun G, Mackay S, Zheng D, McNulty S, Chen J, 2006. Water and carbon cycles in heterogeneous landscapes: an ecosystem perspective. In: Ecology of Hierarchical Landscapes: From Theory to Application (Eds. Jiquan Chen, Sari C. Saunders, Kimberly D. Brosofske, and Thomas R. Crow), Nova Publishing, Carbondale, IL, USA, pp. 89-123.
6. Karnosky DF, Percy K, Mankovska B, Prichard T, **Noormets A**, Dickson RE, Jepsen E, Isebrands JG, 2003. Ozone affects the fitness of trembling aspen. In: Air Pollution, Global Change and Forests in the New Millennium (Eds. David F. Karnosky, Kevin E. Percy, Art H. Chappelka, C. Simpson and Janet Pikkarainen), Elsevier, Amsterdam, pp. 199-209.
7. Wustman BA, Oksanen E, Karnosky DF, **Noormets A**, Isebrands JG, Pregitzer KS, Hendrey GR, Sôber J, Podila GK, 2003. Effects of elevated CO₂ and O₃ on aspen clones of varying O₃ sensitivity: Can CO₂ ameliorate the harmful effects of O₃? In: Air Pollution, Global Change and Forests in the New Millennium (Eds. David F. Karnosky, Kevin E. Percy, Art H. Chappelka, C. Simpson and Janet Pikkarainen), Elsevier, Amsterdam, pp. 391-409.
8. Karnosky DF, Mankovska B, Percy K, Dickson RE, Podila GK, Sôber J, **Noormets A**, Hendrey G, Coleman MD, Kubiske M, Pregitzer KS, Isebrands JG, 1999. Effects of tropospheric O₃ on trembling aspen and interaction with CO₂: Results from an O₃-gradient and a FACE experiment. In: Forest Growth Responses to the Pollution Climate of the 21st Century (Eds. Lucy J. Sheppard and J. Neil Cape), Kluwer Academic Publishers, London, 116:311-322.

COMPUTER PROGRAMS

1. Noormets A, Zhou R, Chen J, 2004. EC_Processor (<http://www4.ncsu.edu/~anoorme/ECP/index.html>).

CONFERENCE PRESENTATIONS (Where presented by self, § - invited talk)

1. **Noormets A**, Miao G, Domec JC, Zhang S, McNulty SG, Sun, King JS, 2011. New site: Lower coastal plain forested wetland at Alligator River National Wildlife Refuge, NC. Ameriflux Science Meeting & NACP All-Investigators Meeting. New Orleans, LA, January 31-February 4.
2. **Noormets A**, McNulty SG, Domec JC, Gavazzi M, Sun G, Treasure E, Miao G, Zhang S, Chen J, King JS, 2011. Forest carbon balance over its production cycle. The remaining uncertainties. Ameriflux Science Meeting & NACP All-Investigators Meeting. New Orleans, LA, January 31-February 4.
3. **Noormets A**, Domec JC, King JS, Gavazzi MJ, Miao G, Zhang S, McNulty SG, Sun G, Treasure E, 2011. Carbon sequestration potential of SE coastal plain forests. 16th Biennial Southern Silvicultural Research Conference (BSSRC), Charleston, SC, February 16, 2011.
4. **Noormets A**, McNulty SG, Domec JC, Gavazzi M, Treasure E, Sun G, King JS, Chen J, 2010. The contribution of Post-harvest source phase respiration to rotation cycle carbon balance in managed forests. American Geophysical Union, Fall Meeting, San Francisco, CA, December 13-17, 2010.
5. § **Noormets A**, Gavazzi M, McNulty SG, Domec JC, Treasure E, Sun G, King JS, Chen J, 2009. Soil carbon balance in the coastal plain loblolly pine plantations. ASA-CSSA-SSSA International Annual Meetings. Pittsburgh, PA, November 4.
6. **Noormets A**, Domec JC, Gavazzi M, McNulty SG, Sun G, Treasure E, Miao G, Zhang S, King JS, Chen J, 2009. Can the interacting effects of hydrology and management help us predict the effect of sea-level rise on vegetation and carbon dynamics in coastal plain forests? Ameriflux Principal Investigator Workshop. Washington, D.C., September 21-23.
7. § **Noormets A**, Domec JC, Gavazzi M, McNulty SG, Treasure E, Sun G, King JS, Chen J, 2009. Drought effects on carbon and water exchange in coastal plain loblolly pine plantations. 2nd International

Conference on Forests and Water in a Changing Environment. USDA Forest Service, Raleigh, NC, September 15.

8. § **Noormets A**, Zhou G, Chen S, Zhao B, 2009. Progress in carbon and water cycle measurements at the USCCC study sites. Ecological Society of America, Albuquerque, NM, August 6.
9. **Noormets A**, McNulty SG, Gavazzi M, Domec JC, Sun G, King JS, Chen J, 2008. Ecosystem carbon balance and vulnerability of soil carbon in a drained lower coastal plain loblolly pine plantation. American Geophysical Union, Fall Meeting, San Francisco, CA, December 15-19, 2008.
10. **Noormets A**, Gavazzi M, McNulty SG, Sun G, Domec JC, King JS, Chen J, 2008. Carbon balance of lower coastal plain forests. Ecological Society of America, Milwaukee, WI, August 4.
11. **Noormets A**, Gavazzi M, Sun G, Chen J, McNulty SG, 2007. Changes in temperature-moisture covariance could increase soil carbon loss. Ecological Society of America, San Jose, CA, August 7.
12. **Noormets A**, 2005. Regulation of ecosystem respiration. ChEAS VIII Annual Meeting, Kemp Natural Resources Station, Woodruff, WI, June 1-2.
13. **Noormets A**, Chen J, 2004. Environmental regulation of ecosystem carbon fluxes in a managed landscape in northern Wisconsin. Ecological Society of America, Portland OR, August 5.
14. **Noormets A**, Chen J, 2004. Landscape level variation in ecosystem carbon fluxes. ChEAS VII Annual Meeting, University of Minnesota, St. Paul, MN, June 23-25.
15. **Noormets A**, Chen J, Crow T, Gustafson E, 2003. Carbon exchange in managed forest ecosystems: Seasonal dynamics. Annual Ameriflux Meeting, October 14-16, 2003, Boulder, CO.
16. **Noormets A**, Chen J, Crow T, 2003. Carbon exchange in managed forest ecosystems: Environmental regulation. Annual Ameriflux Meeting, October 14-16, 2003, Boulder, CO.
17. Ryu S, **Noormets A**, Chen J, Crow T, 2003. Comparisons of modeled (PnET-Day) and measured carbon exchange in managed forest ecosystems in Northern Wisconsin. Annual Ameriflux Meeting, October 14-16, 2003, Boulder, CO.
18. **Noormets A**, Chen J, 2003. Eddy covariance - estimating ecosystem fluxes of carbon and water. BAE-NCSU Meeting, Sept. 10, 2003. Raleigh, North Carolina.
19. **Noormets A**, Chen J, 2003. Carbon fluxes in a managed Northern Wisconsin landscape. Chequamegon Ecosystem-Atmosphere Study (ChEAS) 2003 Meeting. Kemp Natural Resources Station, Woodruff, WI. June 29 - July 2, 2003.
20. **Noormets A**, Chen J, Crow TR, Brososke K, 2003. Water use efficiency in a managed Northern Wisconsin landscape: variation among ecosystems. Western Great Lakes Research Conference and Chequamegon Bay Area Natural Resources Conference. April 9-11, 2003. Western Great Lakes Visitor Center, Ashland, WI.
21. **Noormets A**, Chen J, Bridgham S, Pastor J, Weltzin JF, Harth C, Dewey B, LeMoine J, 2002. The effect of infrared loading and soil water table on soil energy fluxes in northern peatlands. The Ecological Society of America. 87th Annual Meeting. Understanding and restoring ecosystems. A Convention.
22. **Noormets A**, Chen J, Brososke K, Crow TR, Gustafson E, Euskirchen E, 2002. Carbon exchange and cumulative NEP of disturbed land mosaics. Conceptual model. IUFRO Landscape Ecology Section.
23. **Noormets A**, McDonald E, Kruger E, Isebrands JG, Dickson RE, Karnosky DF, 2000. Aboveground carbon budgets under elevated atmospheric CO₂ and/or O₃ for two aspen genotypes differing in O₃ tolerance. Proceedings: Air Pollution, Global Change and Forests in the New Millennium. The 19th International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems, Houghton, Michigan USA (Abstract, p. 60).
24. **Noormets A**, Isebrands JG, Karnosky DF, 2000. The effect of elevated CO₂ and/or O₃ on the seasonal changes of leaf photosynthesis and respiration in aspen (*Populus tremuloides*). Plant Biology 2000. The Annual Meeting of the American Society of Plant Physiologists. American Society of Plant Physiologists.

25. **Noormets A**, Isebrands JG, Podila GK, Karnosky DF, 1999. Stomatal versus mesophyll control of instantaneous photosynthesis in trembling aspen exposed to elevated CO₂ and/or O₃. Plant Biology '99. The Annual Meeting of the American Society of Plant Physiologists. American Society of Plant Physiologists. pp. 119.
26. **Noormets A**, Karnosky DF, Podila GK, 1998. Antioxidant response of *Populus tremuloides* Michx. in early stages of oxidative stress. Plant Biology '98. The Annual Meeting of the American Society of Plant Physiologists. American Society of Plant Physiologists. pp. 91.
27. **Noormets A**, Kull O, Koppel A, 1995. Nitrogen dynamics in *Salix* leaves during the first production year. In: Perttu K, Koppel A (Eds). Short Rotation Willow Coppice for Renewable Energy and Improved Environment. Proceedings of a joint Swedish-Estonian seminar on Energy Forestry and Vegetation Filters held in Tartu 24-26 September 1995. Swedish University of Agricultural Sciences, Uppsala. pp. 51-60.

INVITED PRESENTATIONS (does not include interviews)

1. **Noormets A**, McNulty SG, Sun G, Domec JC, Gavazzi M, Treasure E, Zhang S, Miao G, King JS, Chen J, 2009. Carbon sequestration potential of terrestrial ecosystems. Principles and a case study. For a delegation from the Chinese State Forestry Administration on Forestry Carbon Sequestration and Climate Change. Raleigh, NC, December 09.
2. **Noormets A**, McNulty SG, Chen J, Sun G, Gavazzi M, Domec JC, King JS, 2008. Data quality assurance. The 5th Annual Meeting of US-China Carbon Consortium, Beijing, China, September 13.
3. **Noormets A**, McNulty SG, Chen J, Sun G, Gavazzi M, Domec JC, King JS, 2008. Update of US flux sites – temperate oak forest in Ohio and two loblolly pine plantations in lower coastal plain, North Carolina. The 5th Annual Meeting of US-China Carbon Consortium, Beijing, China, September 13.
4. **Noormets A**, 2006. Gapfilling eddy covariance data with dynamic parameter mechanistic models. Gap Filling Comparison Workshop, Max Planck Institute for Biogeochemistry, Jena, Germany, September 18.
5. **Noormets A**, 2005. Ecosystem carbon balance in a managed forest landscape: respiration. Tartu University, Tartu, Estonia, May 2.
6. **Noormets A**, 2005. Sensitivity of ecosystem respiration to temperature and moisture in temperate forests. Chinese Academy of Forestry, Beijing, China, April 11.
7. **Noormets A**, Zhou R, Chen J, 2005. Forest-atmosphere carbon exchange of the Oak Openings oak savanna. Third Oak Openings Research Forum, Toledo Area Metroparks, Toledo, January 28.
8. **Noormets A**, 2004. The use of eddy covariance in integrative landscape carbon balance studies: an example. Workshop on carbon flux and stocks of terrestrial ecosystems in a changing climate. Institute of Atmospheric Environment, China Meteorological Administration, Shenyang, China, June 1.
9. **Noormets A**, 2004. Carbon fluxes in a managed forest landscape in Northern Wisconsin. Fudan University, Shanghai, China, May 31.
10. **Noormets A**, 2004. Eddy covariance. Methodological issues: Sources of error and flux corrections. Institute of Botany, Chinese Academy of Sciences, Beijing, China, May 25.
11. **Noormets A**, 2004. Carbon fluxes in a managed forest landscape in Northern Wisconsin. Beijing Forestry University, Beijing, China, May 24.
12. **Noormets A**, 2004. Carbon fluxes in a managed forest landscape in Northern Wisconsin. Chinese Academy of Forestry, Beijing, China, May 22.
13. **Noormets A**, Chen J, 2004. Eddy covariance - estimating ecosystem fluxes of carbon and water. Second Oak Openings Research Forum, Toledo Area Metroparks, Toledo, January 23.

PROFESSIONAL MEMBERSHIPS

2007-current – Research Triangle SAS Users' Group

2006-current – American Geophysical Union (AGU)

2000-current – Ecological Society of America (ESA)

a) Physiological Ecology Section, b) Biogeosciences Section

2005-2006 – Midwest SAS Users Group (MWSUG), Michigan SAS Users Group (MSUG)

2003-2006 – International Union of Forestry Research Organizations (IUFRO), Ecosystems and Landscape Ecology (Sections 8.01.00 and 8.01.03)

1998-2003 – American Society of Plant Biologists (ASPB)

PROFESSIONAL ACTIVITIES

FUNDRAISING:

Prof. Olevi Kull's Memorial Fund. Managed by Tartu University Foundation. Total assets 269,300 EEK (\$26,380 USD). <http://www.ut.ee/sihtasutus/index.php?lk=13&stipendium=61>

REVIEWER FOR JOURNALS (accept ca 12-20 a year):

Agricultural and Forest Meteorology, Biogeochemistry, Ecological Modelling, Ecosystems, Ecohydrology, Environmental Monitoring and Assessment, Environmental Pollution, Forest Ecology and Management, Forest Science, Functional Ecology, Global Change Biology, Journal of Geophysical Research, Journal of Integrative Plant Biology, New Phytologist, Philosophical Transactions of the Royal Society of London, Plant Biology, Plant, Cell and Environment, Trees – Structure and Function

GRANT REVIEWS:

National Science Foundation – EAR – Instrumentation and facilities (2010)

De Nederlandse Organisatie voor Wetenschappelijk Onderzoek (Netherlands Organization for Scientific Research, 2009)

Deutsche Forschungsgemeinschaft (German Research Foundation, 2009)

Academy of Sciences of the Czech Republic (2008)

DOE-NICCR. Department of Energy, National Institute for Climate Change Research (2007, 2008, 2009)

DOE-BER CESD, Department of Energy, Office of Biological and Environmental Research, Climate and Environmental Sciences Division (2011).

DOD-SERDP. Department of Defense, Strategic Environmental Research and Development Program

USDA-CSREES. Department of Agriculture, Cooperative State Research, Education, and Extension Service

ORGANIZED CONFERENCE SECTIONS:

“Carbon Sequestration in the Biosphere: Biogeochemistry and Biophysics”, AGU 2010 Fall Meeting, San Francisco, CA (Session Organizer)

“Phenology and ecosystem processes”, Organized Oral Session at the ESA 2006 Annual Meeting, Memphis, TN (Session Organizer)

COORDINATED RESEARCH PROGRAMS:

USA-National Phenology Network (Invited member of the Scientific Advisory Committee, 2009-current)

The Nature Conservancy's Climate Change Adaptation Project (Invited member of the Scientific Advisory Committee, 2009-current)
Prof. Olevi Kull's Memorial Fund (Secretary and Committee Member, 2007-current)
US-China Carbon Consortium (USCCC, Panel Member, 2004-current)
University of Toledo NEON-GLACEO Team (Member, 2005-2006)

AWARDS AND HONORS

2007 – FLUXNET Travel Award, FLUXNET-TCO synthesis workshop, LaThuile, Italy
2006 – Travel Award, Gap filling comparison workshop, Max Planck Institute for Biogeochemistry, Jena, Germany
2006 – Scholarship, Uncertainty and variability in ecological Inference, forecasting, and decision making. Summer Institute at Duke University's Center on Global Change
2006, 2007, 2008 – Who's Who in America, Marquis' Who's Who
2005 – Scholarship, SEEK Early Career Faculty and Post-Doctoral Training in EcolInformatics
2004 – Who's Who in Sciences Higher Education (WWSHE), AcademicKeys
2001 – Doctoral Finishing Fellowship, Michigan Technological University
2000 – Travel Grant, Graduate Student Council, Michigan Technological University
2000-1999 – Challenge Fellowship, Michigan Technological University
2000-1998 – Invited member to Xi Sigma Pi, National Forestry Honors Society, Alpha Eta Chapter
2001-1996 – Graduate Research Assistantship, Michigan Technological University
1999 – Travel Grant, American Society of Plant Physiologists
1998 – Visiting Scholarship, Pennsylvania State University
1995-1994 – Visiting Scholarship, Swedish Agricultural University
1994 – Visiting Scholarship to University of Joensuu, Finland, Open Estonia Foundation

OUTREACH

1. Judge for Outstanding Student Paper Awards (Biogeosciences section), American Geophysical Union, Fall Meeting, San Francisco, CA, December 13-17, 2010.
2. Volunteer judge at the North Carolina State Science and Engineering Fair, Meredith College, Raleigh, NC, March 27, 2010.
3. Volunteer expert for American Geophysical Union Question and Answer session for Copenhagen. December 7 and 14, 2009.
4. Buell-Braun Student Awards Judge. Ecological Society of America, Albuquerque, NM, August 2-7, 2009.
5. Billings & Student Poster Awards Judge. Physiological Ecology Section, Ecological Society of America, Albuquerque, NM, August 2-7, 2009.
6. Eddy covariance data processing and quality assurance. Workshop at Beijing Forestry University. Beijing, China, September 14-26, 2008.
7. Buell-Braun Student Awards Judge. Ecological Society of America, Milwaukee, WI, August 3-8, 2008.
8. Billings & Student Poster Awards Judge. Physiological Ecology Section, Ecological Society of America, Milwaukee, WI, August 3-8, 2008.
9. Buell-Braun Student Awards Judge. Ecological Society of America, San Jose, CA, August 5-10, 2007.
10. Billings & Student Poster Awards Judge. Physiological Ecology Section, Ecological Society of America, San Jose, CA, August 5-10, 2007.
11. Buell-Braun Student Awards Judge. Ecological Society of America, Memphis, TN, August 7-11, 2006.
12. Billings & Student Poster Awards Judge. Physiological Ecology Section, Ecological Society of America, Memphis, TN, August 7-11, 2006.
13. Sigma Xi, The Scientific Research Society, University of Toledo chapter. Judge, 2003, 2006.

14. University of Toledo Community Charitable Campaign, coordinator for EEES Department, 2003, 2004, 2005.
15. Billings & Student Poster Awards Judge. Physiological Ecology Section, Ecological Society of America, Portland, OR, August 3-6, 2004.
16. Buell-Braun Student Awards Judge. Ecological Society of America, Portland, OR, August 2-5, 2004.
17. Eddy covariance workshop for US-China Carbon Consortium (USCCC), coordinator & presenter, LEES, The University of Toledo, Toledo, OH, March 27-May 18, 2004.
18. Northwest Ohio District 2 Science Day Invited Judge, The University of Toledo, Toledo, OH, March 20, 2004.
19. US-China Carbon Consortium (USCCC) Training Workshop. Introduction to eddy covariance technique. Prerequisites for measurement and issues of practical importance. Data processing and corrections. University of Toledo, Toledo, OH, April 8-9, 2004.

SERVICE AT NCSU

1. Travel Reimbursement Processes Improvement Task Force (sub-committee of the Finance and Business, Administrative Processes Steering Committee), 2009, 2010.
2. CNR-FER Web page improvement committee, 2008, 2009, 2010, 2011.