# Curriculum Vitae

***DAVID ARTHUR SAMPSON***
October 2020

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Decision Center for a Desert City, Global Institute of Sustainability,
Arizona State University, 800 S. Cady Mall, Wrigley Hall, Rm 454, Tempe, Arizona 85287

## Education:

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| ***Ph.D.*** | Forestry: Systems Modeling | Colorado State University, *Cum Laude* | 1992. |
| ***M.S.*** | Forestry: Systems Ecology | Northern Arizona University, *Magna Cum Laude* | 1988. |
| ***B.S.*** | Forest Science: Ecology | Michigan Technological University | 1982. |
| ***A.S.*** | General Studies: Biology | Washtenaw Comm. College, *Summa Cum Laude* | 1978. |

## Research Experience:

**Academic Professional/Senior Sustainability Scientist/ Research Scientist:** 2008-Current.
Decision Center for a Desert City, Arizona State University. Systems Modeling. The development of a water policy and planning model—**WaterSim**. The development of a browser interface to the **WaterSim 5 and WaterSim 6** models.

**Research Scientist:** 2006-2008.
Department of Forestry, Virginia Polytechnic Institute and State University, 319 Cheatham Hall, Blacksburg, VA 24063, USA. *Forest Process Modeling*. Functional modeling of forest productivity/ ecophysiology: development/ use of the hybrid process model **SECRETS-3PG**.

**Visiting Professor:** 2005.
Department of Biology, University of Antwerp (UA), Wilrijk, BE. *Forest Process Modeling*. Multi-species, multiple patch simulations from a mixed coniferous/ deciduous Belgian forest; $CO_2$ fluxes – the process model **SECRETS and SECRETS-3PG.**

**Research Scientist:** 2001-2004.
Department of Forestry, Virginia Polytechnic Institute and State University in cooperation with the USDA Forest Service, Southern Research Station, Research Triangle Park, NC. USA. *Forest Process Modeling*. Joint project: functional modeling of forest health and loblolly pine productivity/ecophysiology: the process model SECRETS.

**Visiting Professor:** 1999 & 2000.
Department of Biology, University of Antwerp (UIA), Wilrijk, BE. *Forest Process Modeling*. Multi-species, multiple patch simulations from a mixed coniferous/ deciduous Belgian forest; $CO_2$ fluxes – the process model **SECRETS** and eddy covariance.

**Research Scientist:** 1997 to 1998.
Department of Biology, University of Antwerp (UIA), Wilrijk, BE. *Forest Process Modeling*. Multi-species, multiple patch simulations from a mixed coniferous/ deciduous Belgian forest; $CO_2$ fluxes – development of the process model **SECRETS**.

## Teaching & Service:

### *Teaching:*

Florence Unified School District: Copper Basin
2007. 6th Grade Math (and spelling/grammar). One Semester.

### *Guest Teacher:*

Durant Road Elementary School, Raleigh, NC.
2003. 5th Grade – Camp Kanata Forestry Field Class. 1.5 Contact Hours.
2002. 5th Grade - Camp Kanata Forestry Field Class. 1.5 Contact Hours.
East Wake Middle School, Raleigh, NC.
2002. 6th Grade Science: Ten contact hours.
Raleigh Middle School, Raleigh, NC.
2002. 8th Grade Science: Forestry in the 21st Century. Three contact hours.
2001. 6th Grade Science: Introduction to Forest Soils and Soil Mapping. Two contact hours.

### *Substitute Teacher:*

Substitute Teachers, Unlimited, Inc.
2008. Valley-wide; Phoenix, Mesa, Tempe AZ. Perhaps 60 contact hour's to-date.
2007. Valley-wide; Phoenix, Mesa, Tempe AZ. Perhaps 80 contact hour's to-date.
Canon City School Systems (RE-1), Canon City, CO.
2000. K-12 instruction. English, Biology, Math, Algebra, Art. 70 contact hours.

### *Instructor:*

North Carolina State University (NCSU).
1993. Process Modeling in Ecology. Graduate seminar.

### *Guest Lecturer:*

Arizona State University (ASU)
2018-current. SOS 111. Video presentation on Water Sustainability in Phoenix.
2012. ATE 598- Water sustainability in the Phoenix Metropolitan Area. 22 October.
2012. SOS 533/ BIO 591- Climate change, water policy and water use. 18 January, 2013

University of Antwerp (UIA).
2001. Topics in Ecology. Process Modeling in Forest Ecosystem Science.
2000. Topics in Ecology. *Topic*: Scientific writing in English for non-native English speakers.

Duke University.
1997. ENV 296. *Topic*: Measurement and measurement error of leaf area index.

North Carolina State University (NCSU).
1997. FOR 572. *Topic*: Canopy architecture and light interception.
1996. Silvics. *Topic*: Process Modeling in ecology.
1995. Forest Production Ecology. *Topic*: Process Models in Production Ecology.
1994. Forest Productivity. *Topic*: Process Modeling.
1993. Ecology of Forest Production. *Topic*: Models and Modeling in Forestry.
1992. Forest Productivity: Edaphic Relationships. *Topic*: Empirical/Simulation Modeling.

***Service:***

Officer:

2020 **– Corporate Board Representative:** Arizona Hydrological Society; Phoenix Chapter.
2019 **– Corporate Board Representative:** Arizona Hydrological Society; Phoenix Chapter.
2018 **– Vice President:** Arizona Hydrological Society; Phoenix Chapter.
2015 **– President:** Arizona Hydrological Society; Phoenix Chapter.
2014 **– President:** Arizona Hydrological Society; Phoenix Chapter.
2013 – **Secretary:** Arizona Hydrological Society; Phoenix Chapter.

Committee Member:

2018. Arizona Hydrological Society Annual Symposium- Planning Committee member.
2015. Arizona Hydrological Society Annual Symposium- Planning Committee member.
2012. Arizona Hydrological Society Annual Symposium- Planning Committee member.

Panel Member:

2010 – Governor Jan Brewer' **Blue Ribbon Panel on Water Sustainability: *Water Conservation/Recycling/Efficiency/Energy Nexus*** working group. **Chair:** Steve Olson.
2002 - USDA CSREES (NRI) panel member: Managed Ecosystems.
2003 - USDA CSREES (NRI) panel member: Managed Ecosystems.

Journal Editor:

2020. Editor; Water-water@mdpi.com- an open access journal from MDPI
2019. Guest Editor; Water-water@mdpi.com- an open access journal from MDPI

Reviews (4 recent):

2020: Socio-hydrological Modelling to Assess Reliability of 2 an Urban Water System under Formal-Informal Supply Dynamics. Water 925331
2019: Variation in canopy structure, leaf area, light interception and light use efficiency among Eucalyptus clones. FORECO_2019_2023
A flexible framework for assessing the sustainability of alternative water supply options. STOTEN-D-18-13338R1
2018: Relationships between net primary productivity and forest stand age under different site conditions and its implication for regional carbon cycle study. Forests.

## Private and Industry Experience:

***Private***

Terra Guild. Owner/operator. Consultant. 1988 - Present.
Ft. Collins, CO.; Phoenix AZ; Raleigh, NC. Modeling: resource management.

Recent Contracts

ASU Decision Center for a Desert City. August – November 2008.
USDA Forest Service, RTP, NC. March 2000 and February 2001.
University of Antwerp, Dept. Biology. November 1999.
North Carolina State University, Dept. Forestry. May to August 1999.

SAMLIN Company**. Owner/ operator**. Land management consultants. 1982 -1986. Hancock Michigan. Urban forestry and small woodlot management.

***Industry***

Consultant: USDA Forest Service - Wetlands Research. 2007-2008. LAI of emergent vegetation following a harvest; loblolly pine simulations and the process model SECRETS-3PG.

Consultant: Westvaco Corporation. 2006. Douglas Fir Simulations. Environmental controls and productivity using the process model SECRETS-3PG.

Consultant: Westvaco Corporation. 1999. Brazilian loblolly pine productivity. Environmental controls and production ecology.

Consultant: Weyerhaeuser Company. 1992 - 1996. Leaf area relations/ research.

## Publications:

***In Process:***

Sampson, D.A., Ray Quay, Mitch Horrie, and Greg Fisher. On the Relationship between Population, housing density, and water use. In preparation.

Sampson, D.A., X. Guan, A. Mounir, C. Duan, G. Mascaro, R. Maciejewski, D.D. White. Parameter sensitivity of WEAP and LEAP. In preparation.

***Refereed:***

Sampson, D.A., E.M. Cook, M. J. Davidson, N.B. Grimm, D.M. Iwaniec. 2020. Simulating Alternative Sustainable Water Futures. Sustainability Science 15, 1199-1210. https://doi.org/10.1007/s1162 5-020-00820 -y

Iwaniec DM, Cook E, Davidson M, Berbes-Blazquez M, Georgescu M, Krayenhoff S, Middel A, **Sampson D**, Grimm N. 2020. The Co-production of Sustainable Future Scenarios. Landscape and Urban Planning 197. DOI 10.1016/j.landurbplan.2020.103744.

Guan, Xin, Giuseppe Mascaro, **David Sampson**, Ross Maciejewski. 2019. A Metropolitan Scale Water Management Analysis of the Food-Energy-Water Nexus. Science of the Total Environment, 701, 20 January 2020. https://doi.org/10.1016/j.scitotenv.2019.134478

Wang, Zhi-Hua, Rachel von Gnechten, **David Sampson**, Dave White. 2019. Wastewater reclamation holds the key for water sustainability in future urban development of Phoenix Metropolitan Area. Sustainability 11(13), 3537. doi:10.3390/su11133537.

Thomas, R. Quinn, Evan Brooks, Annika Jersild, Eric Ward, Randolph Wynne, Timothy J. Albaugh, Heather Dinon Aldridge, Harold E. Burkhart, Jean-Christophe Domec, Thomas R. Fox, Carlos A. Gonzalez-Benecke, Asko Noormets, **David A. Sampson**, Robert O. Teskey. 2017. Leveraging 35 years of *Pinus taeda* research in the southeastern U.S. to constrain forest carbon cycle predictions: regional data assimilation using ecosystem experiments. Biogeosciences. 14: 1-23.

Gober, Patricia., **Sampson, David A**., Quay, Ray., White, Dave D., Chow, Winston T.L., Urban adaptation to mega-drought: Anticipatory water modeling, policy, and planning for the urban Southwest. **Sustainable Cities and Society**. http://dx.doi.org/10.1016/ j.scs.2016.05.001.

Moreno, H.A., H. V. Gupta, D. D. White, **D. A. Sampson**. Modeling the distributed effects of forest thinning on the long-term water balance and stream flow extremes for a semi-arid basin in the southwestern US. **Hydrology and Earth System Sciences** 20: 1241-1267. doi:10.5194/hess-20-1241-2016, 2016.

Sampson, D. A., R. Quay, D. D. White. 2016. Anticipatory modeling for water supply sustainability in Phoenix, Arizona. **Environmental Science and Policy** 55: 36-46. DOI: 10.1016/j/envsci.2015.08.014.

Withycombe Keeler, L., A. Wiek, D. D. White **D. A. Sampson**. 2015. Linking stakeholder survey, scenario analysis, and simulation modeling to explore the long-term impacts of regional water governance regimes. **Environmental Science and Policy** 48:237-249.

Gober, P., D.D. White, R. Quay, **D.A. Sampson**, C.W. Kirkwood. 2014. Socio-hydrology modelling for an uncertain future, with examples from the USA and Canada. In *Model Fusion: Integrating Environmental Models to Solve Real World Problems.* **Geological Society of London**, Special Publications Series.

Murray, A.T., P.D. Padegimas, P. Gober, L. Anselin, R.J. Sergio, **D.A. Sampson**. 2012. Spatial optimization models for water supply allocation. **Water Resources Management** 26(8): 2243-2257. DPI: 10.1007/s11269-012-0013-5.

Sampson, D.A., D.M. Amatya, C.D. Blanton Lawson, R.W. Skaggs. 2011. Leaf area index (LAI) of loblolly pine and emergent vegetation following a harvest. **Transactions of the ASABE** 54: 2057-2066.

Sampson, D.A., V. Escobar, M.K. Tschudi, T. Lant, P. Gober. 2011. A provider-based water planning and management model—WaterSim 4.0—for the Phoenix Metropolitan Area. **Journal of Environmental Management** 92: 2596-2610.

Gielen, B., H. Verbeeck, J. Neirynck, **D.A. Sampson**, F. Vermeiren, I.A. Janssens. 2010. Decadal water balance of a temperate Scots pine forest (*Pinus sylvestris* L.) based on measurements and modeling. **Biogeosciences** 7: 1247-1261.

Sampson, D. A., R. H. Wynne, J. R. Seiler. 2008. Edaphic and climatic effects on forest stand development, net primary production, and net ecosystem productivity simulated for Coastal Plain loblolly pine in Virginia, **Journal Geophysical Research**, 113, G01003, doi: 10.1029/2006JG000270.

Sampson, D.A., I.A. Janssens, J. Curiel Yuste, R. Ceulemans. 2007. Basal rates of soil respiration are correlated with photosynthesis in a mixed temperate forest. **Global Change Biology** 13: 2008-2017.

Tyree, M.C., Seiler, J.R., Aust, W.M., **Sampson, D.A.**, Fox, T.R. 2006. Long-term effects of site preparation and fertilization on total soil $CO_2$ efflux and heterotrophic respiration in a 33-year-old Pinus taeda L. plantation on the wet flats of the Virginia Lower Coastal Plain. **Forest Ecology and Management** 234: 363-369.

Sampson, D.A., I. A. Janssens, R. Ceulemans. 2006. Under-story contributions to stand level GPP using the process model SECRETS. **Agricultural and Forest Meteorology** 139: 94-104.

Siqueira, M.B., Katul, G.G., **Sampson, D.A.**, Stoy, P.C., Juang, J.-Y., McCarthy, H.R., Oren, R. 2006. Multi-scale model inter-comparisons of $CO_2$ and $H_2O$ exchange rates in a maturing southeastern U.S. pine forest. **Global Change Biology** 12: 1189-1207.

Sampson, D.A., Waring, R.H., Maier, C.A., Gough, D.M., Ducey, M.J., Johnsen, K.H. 2006. Fertilization effects on forest carbon storage and exchange and net primary production; a new hybrid process model for stand management. **Forest Ecology and Management** 221: 91-109.

Sampson, D.A., Albaugh, T.A., Johnsen, K.H., Allen, H.L., Zarnoch, S.J. 2003. Monthly leaf area index estimates from point-in-time measurements and needle phenology for *Pinus taeda.* **Canadian Journal of Forest Research** 33: 2477-2490.

Gough, C.M., Seiler, J.R., Johnsen, K., **Sampson, D.A.** 2003. Seasonal photosynthesis in fertilized and non-fertilized loblolly pine. **Forest Science** 50: 1-9.

Meiresonne, L., **Sampson, D.A.**, Kowalski, A.S., Janssens, I.A., Nadezhdina, N., Cermak, J., Van Slycken, J., Ceulemans, R. 2003. Water flux estimates from a Belgian Scots pine stand: A comparison of different approaches. **Journal of Hydrology** 270: 230-252.

Deckmyn,G., Ceulemans, R., Rasse, D., **Sampson, D.A.**, Garcia, J., Muys, B. 2003. Modeling the carbon sequestration of a mixed, uneven-aged, managed forest using the process model SECRETS. Pp. 143-155 *IN:* Amaro, A., Reed, D., and Soares, P. (eds). Modelling Forest Systems**. CABI Publishing**, Wallingford, UK.

Lin J., **Sampson D.A.**, Deckmyn, G., Ceulemans, R. 2002. Significant overestimation of needle surface area estimates based on needle dimensional in Scots pine trees (*Pinus sylvestris* L.). **Canadian Journal of Botany** 80: 927-932.

Janssens I.A., **Sampson D.A.**, Curiel-Yuste J., Carrara A., Ceulemans, R. 2002. The carbon cost of fine root turnover in a Scots pine forest. **Forest Ecology and Management** 168: 233-242.

Lin, J., **Sampson, D.A.**, Ceulemans, R. 2001. The effect of crown position and tree age on resin-canal density in Scots pine (*Pinus sylvestris* L.) needles. **Canadian Journal of Botany** 79: 1257-1261.

Sampson D.A., Johnsen K.H., Ludovici K.H., Albaugh T.J., Maier C. 2001. Stand scale correspondence in empirical and simulated labile carbohydrates in loblolly pine. **Forest Science** 47: 60-68.

Sampson D.A., Janssens I.E., Ceulemans R. 2001. Simulated soil $CO_2$ efflux and net ecosystem exchange in a 70-year-old Belgian Scots pine stand using the process model SECRETS. **Annals of Forest Science** 58: 31- 46.

Cooter Ellen J., Richman Michael B., Lamb Peter J., **Sampson David A.** 2000. A climate change database for biological assessments in the southeastern United Stated: Development and case study. **Climate Change** 44: 89-121.

Sampson D.A., Ceulemans R. 2000. **SECRETS**: Simulated carbon fluxes from a mixed coniferous/deciduous Belgian forest. In: Forest Ecosystem Modelling,Upscaling and Remote Sensing. Edited by R. Ceulemans, F. Veroustraete, V. Gond and J. Van Rensbergen, **SPB Academic Publishing**, The Hague, The Netherlands; pp. 95-108.

Sampson D.A., Allen H.L. 1999. Regional influences of soil available water and climate, and leaf area index on simulated loblolly pine productivity. **Forest Ecol. and Manage.** 124: 1-12.

Janssens I., **Sampson D.A.**, Cermak J., Meiresonne L., Riguzzi F., Overloop S., Ceulemans R. 1999. Above- and below-ground phytomass and carbon storage in a Belgian Scots pine stand. **Annales des Sciences Forestieres** 56: 81-90.

Sampson D.A., Allen H.L. 1998. Light attenuation in a 14-yr-old loblolly pine stand as influenced by fertilization and irrigation. **Trees** 13: 80-87.

Sampson D.A., Dougherty P.M., Allen H.L. 1997. Development of an index for assessing climate change and elevated carbon dioxide effects on loblolly pine productivity. Pp 367-389 *IN*: The productivity and sustainability of Southern Forest Ecosystems. Mickler, R and Fox, S (eds.). **Springer-Verlag** Inc, New York.

Dougherty P.M., Allen H.L., Kress L.W., Murthy R., Maier C., Albaugh T.J., **Sampson D.A.** 1997. An investigation of the impacts of elevated $CO_2$, irrigation, and fertilization on the physiology and growth of loblolly pine. Pp. 1-23 *IN*: The productivity and sustainability of Southern Forest Ecosystems. Mickler, R and Fox, S (eds.). **Springer-Verlag** Inc, New York.

Sampson D.A., Cooter E.J., Dougherty P.M., Allen H.L. 1996. Comparison of the UKMO and GFDL GCM climate projections in simulations of NPP for southeastern loblolly pine stands. **Climate Research** 7: 55-69.

Sampson D. A., Allen H.L. 1995. Direct and Indirect Estimates of leaf area index (LAI) for lodgepole and loblolly pine stands. **Trees** 9: 119-122.

Sampson D. A., Smith F.W. 1993. The influence of canopy architecture on light penetration in lodgepole pine (*Pinus contorta* spp. *latifolia*) Forests. **Agricultural and Forest Meteorology** 64: 63-79.

Smith F. W., **Sampson D.A.**, Long J.L. 1991. Comparison of leaf area index estimates from tree allometrics and measured light interception. **Forest Science** 37: 1682-1688.

***Non-Refereed***

Sampson, D.A. A multi-language, regional, water management model. Proceedings of MODFLOW and MORE 2011: Integrated Hydrologic Modeling. IGWMC.

Gough, C, Seiler, J., Johnsen, K., **Sampson, D.A.** 2002. GPP in loblolly pine: a monthly comparison of empirical and process models. Pages 66-71 *IN:* Outcalt, Kenneth W., ed. 2002. **Proceedings of the eleventh biennial southern silvicultural research conference.** Gen. Tech. Rep. SRS-48. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 622 p.

Johnsen, K. Samuelson, L., Butnor, J., **Sampson, D.A.**, Maier, C. 2003. Carbon sequestration in loblolly pine plantations: degrees of certainty among storage pools. **Proceedings of the eleventh biennial southern silvicultural research conference.** Gen. Tech. Rep. SRS-48. Asheville, NC: U.S. D.A. Forest Service, Southern Res. Station. 622 p

Randle, T., Broadmeadow, M., Matteucci, G., Dewar, R., Ceulemans, R., Medlyn, B.E., **Sampson, D.**, Kellomäki, S., Dufrene, E., Bergh, J., McMurtrie, R.E. & Scarascia- Mugnozza, G. 1999. Chapter 7: Short-term modelling of forest stands. In: P.G. Jarvis (ed.) Predicted Impacts of Rising Carbon Dioxide and Temperature on Forests in Europe at Stand Scale, pp. 136-168. Final Report for ECOCRAFT (Environment R&D Contracts ENV4-CT95-0077 & IC20-CT96-0028).

Sampson D.A., Vose J.M., Allen H.L. 1998. A conceptual approach to stand management using leaf area index as the integral of stand structure, physiological function and resource supply & use. Pp. 447-451 *IN*: Waldrop, Thomas. A. [ed]. Proceedings for the Ninth Biennial Southern Silvicultural Research Conference. Clemson University, Clemson, South Carolina, USA. SRS Gen Tech. Report 20.

NCSFNC 1996. Climate and soil water holding capacity effects on carbon assimilation by loblolly pine stands - a modeling analysis. North Carolina State Forest Nutrition Cooperative Research Note 12. College of Forest Resources. North Carolina State University, Raleigh.

Sampson D. A. 1993. The potential effects of increased temperatures and elevated ambient carbon dioxide on loblolly pine productivity: results from a simulation model. Symposium proceedings for the Conference on Sustainable Ecological Systems: Implementing an Ecological Approach to Land Management, Northern Arizona University, Flagstaff, Arizona, USA. 12-15 July 1993.

Sampson D. A. 1988. A Pinyon-Juniper Ecosystem Model. Proceedings of the Firs Annual Northern Arizona University Student Symposium on Management Science for Multiresource Management. School of Forestry, Northern Arizona University, Flagstaff, AZ. USA. 1987.

## Contributed Papers, Posters, and Community Outreach:

***Papers***

"Alternative sustainable water futures." Sampson, D. A. 31st Annual Symposium of the Arizona Hydrological Society: "The Importance of Hydrology in a Vibrant Southwest" **19-21 September 2018, Desert Willow Conference Center, Phoenix, AZ, USA.**

"Rainwater/ Gray Water Potential in Phoenix Metro for Meeting Outdoor Water Demands: WaterSim 6." Sampson, D. A. The Arizona Hydrological Society 2017 Annual Water Symposium: "How to keep the water flowing" **6-9 September 2017, Flagstaff, AZ, USA.**

"Urban adaptation to mega-drought: Anticipatory water modeling, policy, and planning in Phoenix." Patricia Gober, David A Sampson, Ray Quay, Dave D. White, and Winston Chow. American Geophysical Union (AGU) Annual Meeting, **12-16 December, 2016, San Francisco California**, **U.S.A.**

"Co-developing Urban Sustainability and Resilience Scenarios." David M. Iwaniec, Elizabeth M. Cook, Melissa J. Davidson, Nancy B. Grimm, **David A. Sampson**, Matei Georgescu. Ecological Society of America (ESA) annual meeting, **7-12 August, 2016, Fort Lauderdale, FL, USA**.

"Predicting future productivity if Southeastern U.S. Pine ecosystems in a changing climate using data assimilation with diverse data sources." Thomas, R.Q., A. Jersild, E. Brooks, R. Wynne, **D. Sampson**, C. Gonzalez-Benecke, R. Teskey, and E. Ward. American Geophysical Union (AGU) Annual Meeting, **14-18 December, 2015, San Francisco California**, **U.S.A.**

"Relative role of parameter vs. climate uncertainty for predictions of future Southeastern U.S. pine carbon cycling." Jersild, A, R.Q. Thomas, E. Brooks, R. Teskey, R. Wynne, **D. Arthur** Sampson, C. Gonzalez-Benecke, V. Thomas, T. Fox, and L. Smallman. American Geophysical Union (AGU) Annual Meeting, **14-18 December, 2015, San Francisco California**, **U.S.A.**

"A browser interface to WaterSim 5: water 201 for the Phoenix Metropolitan Area." Sampson, D. A., R. Quay, D. D. White. The Arizona Hydrological Society 2015 Annual Water Symposium: "Where Did the Water Go?" **16-19 September 2015, Phoenix, AZ, USA.**

"Anticipatory water management in Phoenix using advanced scenario analyses: WaterSim 5." Quay, R. and **D. A. Sampson**. 2014. Presentation at the AZ Water Association's 87th Annual Conference & Exposition: Public Investment in Water for a Strong Economy and Healthy Communities, **May 7-9, 2014, Glendale, AZ**, **USA**.

"Socio-hydrology modelling for an uncertain future, with examples from the USA and Canada." White, D.D., P. Gober, **D.A. Sampson**, R. Quay, and C. Kirkwood. 2013. The American Geophysical Union Fall Meeting, **9-13 December, 2013, San Francisco, CA, U.S.A.**

"Linking a MODFLOW Groundwater Flow Model with an Urban Water Policy and Management Model." David Arthur Sampson. The National Groundwater Association Theis Conference, **8-10 November, 2013, Phoenix, AZ. U.S.A.**

"A dynamic, georeferenced, data management interface to link MODFLOW with an urban water policy and management model." Sampson, David Arthur, Ray. Quay, and Michael. Lacey. MODFLOW and More 2013**, 2-5 June, 2013, Golden, CO, U.S.A.**

"A workshop forum: Dry cell hammering and other exceptions (and resolutions) for the SRV groundwater flow model." Sampson, D.A. 2013. The AZ Water Association's 86th Annual Conference & Exposition; Sustainable Water, Sustainable Arizona, **1-3 May, 2013, Glendale, AZ., U.S.A.**

"A water policy and planning model for the Phoenix Metropolitan Area." Sampson, D.A., and R. Quay. The Arizona Hydrological Society 2012 Annual Water Symposium, **18-21 September 2012, Phoenix, AZ, USA.**

"A coupled surface and groundwater management model for Metropolitan Phoenix." D.A. Sampson. The Arizona Hydrological Society 2011 Annual Symposium, **18-20 September 2011, Flagstaff, AZ**, **USA.**

"A multi-language, regional, water management model." D.A. Sampson. MODFLOW and MORE 2011: Integrated Hydrologic Modeling. International Groundwater Management Center, **5-8 June, 2011, Golden CO. USA**.

"Carbon exchange and sequestration of pine ecosystems and the hybrid process model SECRETS_3-PG." D.A. Sampson and C. M. Gough. 18th Annual North American Forest Biology Workshop, **12-15 July, 2004, Houghton, MI. USA**.

"GPP in loblolly pine: a monthly comparison of empirical and process models." C. Gough, J. Seiler, K. Johnsen, and D.A. Sampson." Southern Forest Science Conference, **26-28 November, 2001, Atlanta, GA. USA**.

"Carbon sequestration in loblolly pine plantations: degrees of certainty among storage pools." K. Johnsen, D.A. Sampson, L. Samuelson, J. Butnor, and C. Maier. Southern Forest Science Conference, **26-28 November, 2001, Atlanta, GA. USA**.

"SECRETS - Simulated carbon fluxes from a mixed coniferous/deciduous Belgian forest." D.A. Sampson and R. Ceulemans. INFORMUS- 2nd International workshop on forest ecosystem modelling, upscaling and remote sensing, **21-25 September, 1998, Antwerpen, Belgium**.

"Carbon and water fluxes simulated with the process model SECRETS." D.A. Sampson. GCTE - 'Forestry Experimental Network' workshop, **8-10 September, Vindeln, Sweden**.

"Preliminary simulations of carbon fluxes from a mixed coniferous/deciduous forest in Belgium." D.A. Sampson and R. Ceulemans. Process-based models for Forest Management. **30 August-4 September, 1998, Rovaniemi and Saariselka, Lapland, Finland**.

"Climate and soil water limitations to southern pine productivity in simulations for the Southern United States." D.A. Sampson, and H.L. Allen. Ecological Society of America Annual Meeting, **10-14 August 1997, Albuquerque, New Mexico, USA**.

"Are there light limitations to loblolly pine foliage production?" Sampson, D.A., Albaugh, T.J., and Allen, H.L. First Biennial North American Forest Ecology Workshop, **24-26 June 1997, Raleigh, North Carolina, USA**.

"Climate and soil water availability effects on loblolly pine productivity and production potential" Sampson, D.A. Twenty-sixth Annual Meeting of the North Carolina State Forest Nutrition Cooperative, **3-4 June 1997, Raleigh, North Carolina, USA**.

"A conceptual approach to stand management using leaf area index as the integral of site structure, physiological function, and resource supply and use." Sampson, D.A., Vose, J.M., Allen, H.L. Ninth Biennial Southern Silvicultural Research Conference, **25-27 February 1997, Clemson University, Clemson, South Carolina, USA**.

"Climate and soil water holding capacity effects on carbon assimilation of loblolly pine: a modeling analysis" Sampson, D.A. Twenty-fifth Annual Meeting of the North Carolina State Forest Nutrition Cooperative, **4-5 June 1996, Raleigh, North Carolina, USA**.

"Using BIOMASS version 14.0 as a Synthesis Tool for the SETRES: The Deficit-Buffered Carbon Budget Hypothesis for Loblolly pine." Paper presented at the GCTE workshop; A network of intensive experimental sites for assessing global change impacts on managed forests. An element of the IGBP/GCTE Activity 3.5, **14-17 August 1995, Lycksele, Sweden**.

"The effects of initial stand and site conditions on simulated NPP in *Pinus taeda* L." Sampson, D.A., Cooter, E.J., and Dougherty, P.M. Ecological Society of America Annual Meeting, **July-August 1995, Snowbird, Utah, USA**.

"An index of net primary production response to climate change projected by four GCM's for loblolly pine forests." Sampson, D.A., Dougherty, P.M., and Allen, H.L. Southern Global Change Program Annual Meeting, **November 1995, Raleigh, NC, USA**.

"Regional variation in loblolly pine productivity" Sampson, D.A. Twenty-fourth Annual Meeting of the North Carolina State Forest Nutrition Cooperative, **2-5 June 1995, Raleigh, North Carolina, USA**.

"Regional Variation in Loblolly Pine Production Response to Climate Change in the southeastern United States." Sampson, D.A., Dougherty, P.M., and Cooter, E.J. International Society of Ecological Modelling, **August 1994, Knoxville, TN, USA**.

"Integration of the Effects of Water and Nutrient Availability on carbohydrate production and use in an eight-year-old Loblolly Pine Stand." Dougherty, P.M., Allen, H. Lee, and Sampson, D.A. Global Change and Terrestrial Ecosystems: The first GCTE Science Conference, **May 1994, Woods Hole, MA, USA**.

"Sensitivity Analyses on the Effect of Driving Variables and Spatial Resolution on Regional Productivity of Loblolly Pine." Sampson, D.A., Dougherty, P.M., and Allen, H.L. Southern Global Change Program Annual Meeting, **March 1994, New Orleans, LA, USA**.

"Nutritional Responses of a Nitrogen Deficient Loblolly Pine Stand during the Eight-Years following Fertilization." Allen, H.L. and D.A. Sampson. Ecological Society of America Annual Meeting, **August 1993, Madison, WI, USA**.

"The influence of Canopy Architecture on Light Penetration in Lodgepole Pine Forests." Sampson, D.A. and F.W. Smith. Ecological Society of America Annual Meeting, **August 1992, Honolulu, HI, USA**.

"Mechanical Abrasion and Crown Shyness in Lodgepole Pine Forests." Smith, F.W., J.L. Long, and D.A. Sampson. Ecological Society of America Annual Meeting, **July 1990, Snowbird, UT**.

***Posters***

"The Impact of Social-Economic Indicators on Turf Rebates in the City of Scottsdale." Elyse Kats, Jill Brumand, David Sampson. Decision Center for a Desert City annual Poster Symposium, 22 April, 2019.

"Rainwater and gray water potential for meeting outdoor water demand in the Phoenix Metropolitan Area." Sampson, D.A. 2019. Poster presented at the 21st Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 11, 2019, Skysong, Scottsdale, AZ, USA**.

"Modeling the food-energy-water nexus in Central Arizona using the WEAP model." Xin Guan, Giuseppe Mascaro, Adil Mounir, David Sampson. American Geophysical Union Annual Meeting, 10-14 December, 2018. Washington D.C. USA

"Sustainable futures scenarios and WaterSim 6: Influence of alternative water supply policies on net potable water use." Sampson, D.A., D.M. Iwaniec, M. Davidson, and E. Cook. 2017. Poster presented at the 19th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 13, 2017, Skysong, Scottsdale, AZ, USA**.

"Sustainable futures scenarios and WaterSim 6: Influence of alternative water supply policies on net potable water use." Sampson, D.A., D.M. Iwaniec, M. Davidson, and E. Cook. 2017. Poster presented at the 19th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 13, 2017, Skysong, Scottsdale, AZ, USA**.

"Exploring outcomes and assessing tradeoffs of co-developed sustainable future scenarios for the central Arizona-Phoenix region." Davidson, M., E. Cook, N.B. Grimm, D. Iwaniec, D. Sampson. 2017. Poster presented at the 19th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 13, 2017, Skysong, Scottsdale, AZ, USA**.

"The adaption to drought sustainable future scenario: simulations using WaterSim 6." Sampson, D.A., D.M. Iwaniec, M. Davidson, and E. Cook. 2016. Poster presented at the 18th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 15, 2016, Skysong, Scottsdale, AZ, USA**.

"Mega drought in the Colorado River Basin, water supply, and adaptive scenario planning for the Phoenix Metropolitan Area; simulations using WaterSim 5. Sampson, D.A. [actual poster: Megadrought in the Colorado River Basin: water supply implications for Phoenix Metro using WaterSim 5]. Sampson, D.A., R. Quay, D.D. White, and S. Werth. American Geophysical Union (AGU) Annual Meeting, **14-18 December, 2015, San Francisco California**, **U.S.A.**

"A browser Interface to WaterSim 5.0." Sampson, D. A., R. Quay, and D. D. White. 2015. Poster presented at the 17th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 16, 2015, Skysong, Scottsdale, AZ, USA**.

"WaterSim: a brief history." Sampson, D. A., R. Quay, D. D. White and P. Gober. 2014. Poster presented at the Water Resources Research Center 2014 Annual Conference: Closing the Gap Between Water Supply and Demand**, April 8, 2014, University of Arizona, Tucson, AZ, USA.**

"WaterSim: A brief history." Sampson, D. A., R. Quay, D. D. White and P. Gober. 2014. Poster presented at the 16th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 17, 2014, Skysong, Scottsdale, AZ, USA**.

"Anticipatory Water Management in Phoenix using Advanced Scenario Planning and Analyses: WaterSim 5". David A. Sampson, Ray Quay, David D. White, Pat Gober, Craig Kirkwood. American Geophysical Union (AGU) Annual Meeting, **9-13 December, 2013, San Francisco California**, **U.S.A.**

"Scaling up the Hydrologic Effects of Forest Thinning in Semi-Arid Basins of Arizona" Hernan A. Moreno, David D. White, Hoshin V. Gupta, Enrique R. Vivoni, David A. Sampson. American Geophysical Union (AGU) Annual Meeting, **9-13 December, 2013, San Francisco California**, **U.S.A.**

"A Workshop forum: run-time exceptions and pre- and post-process data management for the MODFLOW groundwater flow model. D.A. Sampson. The Arizona Hydrological Society 2013 Annual Symposium, **17-20 September 2013, Tucson, AZ**, **USA.**

"Modeling well specific pumping at the provider level." Ketchum, T., D. Sampson, D. Mason, and F. Corkhill. 2013 The Decision Center for a Desert City Annual Poster Symposium, **1 May, 2013, Arizona State University, Tempe, AZ., U.S.A.**

"Quenching our thirst: Future scenarios of water in Phoenix." Withycombe Keeler, L., A. Wiek, D. White, R. Quay, D. Sampson, and J. Quinn. 2013. The Decision Center for a Desert City Annual Poster Symposium, **1 May, 2013, Arizona State University, Tempe, AZ., U.S.A.**

"Advanced Scenario Analyses and Planning for Future Water Supply Challenges." Water Resources Research Center 2013 Annual Conference: Water security from the ground up. **5 March 2013, University of Arizona, Tucson, AZ**, **USA.**

"Potential Central Arizona Project water shortages as influenced by climate and Upper Basin delivery schedules." D.A. Sampson and R. Quay. CAP LTER 15th Annual poster symposium and all scientists meeting. **11 January, 2013 ASU Skysong Scottsdale,** AZ, **USA.**

"Using advanced scenario analyses as an anticipatory tool: exploring uncertainty of urban water demand and supply within Central Arizona." Ray Quay, David Sampson, Dave White, Craig Kirkwood, and Pat Gober. CAP LTER 15th Annual poster symposium and all scientists meeting. **11 January, 2013 ASU Skysong Scottsdale, AZ, USA.**

"An application programmer's interface (API) to WaterSim: WaterSim 5.0." D.A. Sampson and R. Quay. CAP LTER Fourteenth Annual All Scientists Meeting and Poster Symposium 2012; **13 January 2012, Tempe (**SkySong Facility**), AZ**, **USA.**

"A water policy and planning model for the Phoenix Metropolitan Area. "D.A. Sampson and R. Quay. 2012 American Geophysical Union (AGU) Annual Meeting, **3-7 December, 2012, San Francisco California**, **U.S.A.**

"Coupled energy and water use in the Phoenix Metro Area as influenced by drought and climate change; empirical observations and simulation analyses." D.A. Sampson and D. Sailor. CAP LTER Thirteenth Annual All Scientists Meeting and Poster Symposium 2011; **12-13 January 2011, Tempe, AZ**, **USA.**

"A multi-language regional water management model; linking WaterSim to MODFLOW." D.A. Sampson, V. Escobar, and P. Gober. The AGU Annual Meeting 2010; **13-17 December 2010, San Francisco, CA**, **USA.**

"Potential Reclaimed Gray Water Savings for Phoenix: WaterSim 4.0." D.A. Sampson. The Arizona Hydrological Society 2010 Annual Symposium, **1-4 September 2010, Tucson, AZ**, **USA.**

"A provider-based water policy and management model -WaterSim 3.0.1 – for the Phoenix Metropolitan Area." D.A. Sampson, M.K. Tschudi, and P. Gober. Ecological Society of America Annual Meeting, **2-7 August 2009, Albuquerque, NM**, **USA.**

"Future residential outdoor water availability under climatic uncertainty." D.A. Sampson, S.K. Wittlinger, and P. Gober. Dynamic Deserts: Resource Uncertainty in Arid Environments Poster Symposium**. 26 February 2009, Tempe, AZ, USA.**

"The central Arizona water-energy nexus: WaterSim 3.5.5" D.A. Sampson and P. Gober. CAP LTER Eleventh Annual Poster Symposium, **January 2009, Tempe, AZ, USA.**

"Rotation-length carbon storage in managed loblolly pine (*Pinus taeda* L.) forests of the southeastern United States."David Arthur Sampson, Christopher M. Gough, and John R. Seiler. ICDC Seventh International Carbon Dioxide Conference, **25-30 September 2005, Boulder CO. USA.**

"High-resolution multi-layer photosynthesis approaches in Current Forest Productivity models: A Cost-Benefit Analysis in the Time-Frequency Domain." M. Siqueira, G. Katul, D. Sampson, P. Stoy, Jenh-Yih Juang, and R. Oren. AGU Annual Meeting, **13-17 December, 2004, San Francisco, CA. USA**.

"The surplus-buffered carbon budget hypothesis: the role of labile carbon in the daily and seasonal carbon balance of young loblolly pine (*Pinus taeda* L.) stands." Sampson, D.A., Allen, H.L., and Dougherty, P.M. 14th North American Forest Biology Workshop - Forest Management Impacts on Ecosystem Processes. **June 1996, Universite Laval, Quebec City, Canada**.

"Carbon Production, Storage, and Partitioning of Control and Fertilized Loblolly Pine Plantations Examined with a New Version of the simulation Model BIOMASS - VERSION 13.0." Sampson, D.A. Ecological Society of America Annual Meeting, **August 1994, Knoxville, TN, USA**.

"Response of Mid-rotation Loblolly Pine Stands to N and P Fertilization: a case study of leaf area and foliar N concentration." IEA/BE task IX activity four workshop, understanding plant nutrient supply-- opportunities for managing site productivity, **March 1994, Omapare, Northland, New Zealand**.

"Comparison of direct and indirect estimates of LAI in lodgepole and loblolly pine stands: potential bias examined with a physical model." Sampson, D.A. and H.L. Allen. Ecological Society of America Annual Meeting, **August 1993, Madison, WI, USA**.

"The potential effects of increased temperatures and elevated ambient carbon dioxide on loblolly pine productivity under two treatments: Results from a simulation model." Sampson, D.A. Conference on Sustainable Ecological Systems: Implementing an Ecological Approach to Land Management, **July 1993. Northern Arizona University, Flagstaff, AZ, USA**.

"Growth, leaf area, and nutritional responses of a nitrogen deficient loblolly pine stand during eight-years following fertilization." Allen, H.L. and D.A. Sampson. Nutrient Uptake and Cycling in Forest Ecosystems. A CEC/IUFRO Symposium, **June 1993, Halmstad, Sweden**.

"Variation in Canopy Light Extinction as Influenced by Stand Structure." Sampson, D.A., F.W. Smith, and J.L. Long. Ecological Society of America Annual Meeting, **July 1990, Snowbird, UT, USA**.

## Invited Papers:

"Linking a MODFLOW groundwater flow model with an urban water policy and management model." Sampson, David Arthur. National Groundwater Association: Theis Conference **8-10 November, 2013, Phoenix AZ., U.S.A**.

"Resolving the limitations to modeling the effects of Intensive Forest Management on long-term Carbon Cycling." Oral presentation: AGU Annual Meeting, to be held in **May, 2006, Baltimore, MD, USA.**

"Using the process model BIOMASS to simulate southern pine net canopy assimilation." Sampson, D.A. Oral presentation: "Toward and application of Process Models to Sustainable Management of Southern Pine Forests." **7-10 June, 1999, Asheville, North Carolina, USA**.

"Carbon and water fluxes of a mixed forest ecosystem; analyses using SECRETS, a forest process model." Seminar Series. **17 September, 1998, Laboratory for planetary and atmospheric physics, University of Liege, Liege, Belgium**.

## Invited Presentations:

"The Potential for Rainwater Harvesting." Oral presentation: 2019 APA Arizona Conference in the Midst of Transition, **11-13 September, 2019, Oro Valley, AZ., U.S.A.**

"The Sustainable Futures Scenarios and WaterSim 6: Water Resource Policies and Pathways." Sampson, David Arthur. 2017. Paper presented at the 19th Annual CAP LTER Poster Symposium and All Scientists Meeting, **January 13, 2017, Skysong, Scottsdale, AZ, USA**.

2010 Colorado River Symposium: Implications of Lower Lake Levels, Tuscany Suites and Casino, **21-22 April, 2010, Las Vegas, Nevada**: Invited Speaker: "Decision tools for water planning at the Decision Center for a Desert City (DCDC)."

Arizona Hydrological Society monthly meeting**, 12 October, 2010, Phoenix, Arizona**. Invited Speaker: "Implications of extreme heat and drought on electricity consumption and water shortages in Phoenix."

## Outreach Presentations:

Water 101. David A. Sampson, 3 September, 2019. Dr. Daniel Bright School, Mr. Scotts' 7th and 8th grade classes. Cottonwood, AZ., USA.

Water Consumption: how low can you go? Invited talk as part of "No Impact Week", The Sustainability Series, Global Institute of Sustainability, 30 September, 2011, Wrigley Hall 481, ASU, Tempe, AZ, USA.

WaterSim: Water Supply Demand Model for Central Arizona. Ray Quay and David Sampson. 11 April, 2012, 12:00 p.m., Coor 5635 (brown bag presentation), ASU, Tempe, AZ, USA.

WaterSim: Water Supply Demand Model for Central Arizona. Ray Quay and David Sampson. 10 May, 2012, 10:00 a.m., Wrigley Hall 323 (brown bag presentation), ASU, Tempe, AZ, USA.

## Outreach Activities:

Interactive exhibit on the DCDC WaterSim Model, on display at the Pueblo Grande Museum, Phoenix, Arizona. **12 October 2012 to 1 May 2013.** The WaterSim exhibit is part of the "Living in the desert: Decisions and Consequences" temporary exhibit at the museum.

## Other Activities:

Publication of the **book** entitled "A Simple Tao." 2011. Create Space/ Amazon.com.

# Grants, Awards, and Recognitions:

### *Grants*

2012. Quay, R., G. Gammage, D. Sampson, R. Aggarwal, H. Eakin, J. Holway, C. Kirkwood, A. Wiek, D. White. Using Scenarios to Define a Sustainable Water Future for the Sun Corridor. $ Unknown. GIOS internal request for proposals.

2012. Pahle, R., D.A. Sampson, S. Epstein, Enabling advanced social science research by integrating WaterSim 5.0 into a flexible computational decision science framework. $ 104,818 proposal submitted to DCDC. (NF).

2011. Wilson et al. A Place-Based, Integrative Modeling Framework to Promote Improved Water Sustainability and Climate Research, Education, and Practice. Submitted to Water Sustainability and Climate, category 2. (NSF). $ 2,500,000.00. (in review).

2011. Pahle, R., S. Epstein, D.A. Sampson. Utilizing the Complex System Framework to Increase WaterSim Capabilities. $ 104,818 proposal submitted to DCDC. (NF).

2010. Yong, L., B. Ruddell, D. Sampson, P. Gober. Integrated Sensor Web and Visual Analytics Framework for Groundwater Management and Decision Support. $ 244,108 proposal submitted to NSF- OCI – Software Institutes, Collaborative Research: S12-SSE. (NF).

2009. Gober, P. Sailor, D.J., and **Sampson, D.A.** Implications of Simultaneous Extreme Heat and Drought Events for Electricity Generation and Consumption and Water Shortage in the Desert Southwest. National Commission on Energy Policy: Total Award; $ 35,000.00. (F).

2009. Wynne, R.H., Seiler, J.R., **Sampson, D.A.**, Thomas, V. Landscape-Scale drivers of the spatial and temporal distribution of soil CO2 efflux in Southern Appalachian Forest Ecosystems. Re-submitted to NSF.

2008. Wynne, R.H., Seiler, J.R., **Sampson, D.A.**, Thomas, V. Landscape-Scale drivers of the spatial and temporal distribution of soil CO2 efflux in Southern Appalachian Forest Ecosystems. (NF).

2007. Wynne, R.H., **Sampson, D.A.**, Seiler, J.R., Radtke, P.J., Fox, T.R., Johnsen, K.H., Chojnacky, D.C., Liu, X. Multiscale Remote-Sensing for Monitoring and Modeling Net Ecosystem Productivity in Eastern Forests. Submitted to N.A.S.A. (NF).

2006. Wynne, R.H., **Sampson, D.A.**, Seiler, J.R., Potter, C.S., Decker, K., Vose, J.M. and Bolstad, P. Improving our understanding of mechanisms by which climate change impacts the structure and function of Southern Appalachian hardwood ecosystems. Submitted to NICCR. (DOE National Institute for Climate Change Research; December 2006). (NF).

2005. Wynne, R.H., Potter, C.S., Genovese, V.B., Seiler, J.R., Fox, T.R., Amateis, R.L., Radtke, P.J., Liu, X., **Sampson, D.A**., Prisley, S.P. Vance, E.D., Miner, R.A., Triantis, K.P., and Scrivani, J.A. Decision Support for Loblolly Pine Carbon Management: From Research to Operations. Submitted to NASA, Decision Support through Earth Science Results. (F). Approximately $ 1,000,000.00 total budget.

2005. Sampson, D.A., Seiler, J.R., and Fox, T.R. Mechanisms influencing net carbon balance in intensively managed Pinus Ecosystems during early stand development. Submitted to the U.S.D.A. CSREES NRI Managed Ecosystems Program (NF).

2004. Wynne, R.H., **Sampson, D.A**., Seiler, J.R., Radtke, P.J., Fox, T.R. Multiscale remote sensing for monitoring and modeling net ecosystem productivity in Eastern forests. Submitted to N.A.S.A. (NF).

2004. Sampson, D.A., Seiler, J.R., and Fox, T.R. Mechanisms influencing net carbon balance in intensively managed Pinus Ecosystems during early stand development. Submitted to the U.S.D.A. CSREES NRI Managed Ecosystems Program (NF).

2004. Johnsen, K.H., Maier, C., Sanchez, F., and **Sampson, D.A**. Use of a temporary "cold-block" on phloem transport to evaluate seasonal differences in carbon allocation in fertilized and unfertilized loblolly pine plantations. U.S.D.A. CSREES NRI Managed Ecosystems Program (NF).

2003. Teskey, R.O., Johnsen, K.H., and Maier, C. (**Collaborator**). Use of a temporary "cold-block" on phloem transport to evaluate seasonal differences in carbon allocation in fertilized and unfertilized loblolly pine plantations. Submitted to the U.S.D.A. CSREES NRI (NF).

2001. Schlesinger, W., Katul, G., Oren, R., and Palmroth, S. (**Collaborator**). Assessing ecological models of varying complexity for predicting carbon sequestration in managed pine plantations. (F). Approximately \$ 450,000.00 $a^{-1}$ (for three years).

1997. Sampson D.A., and Mathiasen R.L. Seasonal patterns and pools of labile carbohydrates and the structure and health of ponderosa pine ecosystems. Pre-proposal submitted to the Andrew W. Mellon Foundation. (NF).

1996. Allen H.L., and **Sampson D.A.** Model-based diagnosis of soil limitations to forest productivity: Loblolly pine simulations using BIOMASS version 13.0. DOE subcontract proposal to the Agenda 2020 Forest Sustainability Initiative. (F). \$ 82,000.00.

1996. Allen H.L., and **Sampson D.A.** Influence of water and nutrient availability on light interception of loblolly pine. Cooperative agreement, USDA. Forest Service. (F). \$20,000.00.

1996. Sampson D.A., and Wilkinson R.R. Conservation Development and Heritage Tourism in Stokes County, North Carolina: A workshop pilot program. Submitted to the 1996-1997 Faculty Outreach and Professional Development Grants. (F). \$ 3000.00

1995. Sampson D.A., and Dougherty P.M. Modelling regional productivity of loblolly pine forests of the Southern United States: Response to carbon dioxide and climate change. Submitted to the National Institute for Global Environmental Change. (N).

1994. Khorram S., Brockhaus J.A., Morrisset J., **Sampson D.A.**, Allen H.L., and Gumpertz M. Development of remote sensing-aided procedures for improving LAI estimates used in BVOC emission models. Submitted to the U.S. Environmental Protection Agency. (N).

1994. Weinstein D.A., Laurence J.A., Dougherty P.M., Allen H.L., **Sampson D.A.**, and Cropper W.P. Jr. Application of a modeling system for evaluating the effects of anthropogenically induced change at the tree, forest, and regional scales. Submitted to the Southern Global Change Program, U.S.D.A. Forest Service. (N).

1994. Sampson D.A., and Allen H.L. Estimation and analysis of leaf area dynamics in plantation loblolly pine. Weyerhaeuser Company. (F). \$ 3000.00

1993. Sampson D.A., and Allen H.L. Leaf area estimation of loblolly pine (*Pinus taeda* L.) plantations. Submitted to Weyerhaeuser Company. (F). $ 5000.00

1992. Allen H.L., and **Sampson D.A.** Leaf area determination of loblolly pine (*Pinus taeda*. L.) plantations. Submitted to Weyerhaeuser Company. (F). $ 5000.00.

***Awards***

2010. Who's Who in America.
2004. Sigma Xi. Awarded full membership.
1992. Merit-Based Tuition Scholarship. Dept. of Forest Sci., Colorado State University (CSU).
1990. Tuition Scholarship. Department of Forest Science, CSU.

***Recognition***

2012. American Geophysical Union (AGU) Public Affairs office, State of Arizona research Highlights.

## Collaborators and Other Affiliations:

***Collaborators*:** Timothy A. Albaugh, Department of Forestry, North Carolina State University (NCSU), USA; H. Lee Allen, Department of Forestry, NCSU, USA; Luc Anselin, School of Geographical Sciences and Urban Planning, Arizona State University (ASU), USA; Devendra Amatya, Center for Forested Wetlands Research, USDA Forest Service, USA; M Christine D. Blanton Lawson, North Carolina Department of Environment and Natural Resources, Division of Water Quality, USA; Evan Brooks, Forest Resources and environmental Conservation, , Virginia Polytechnic Institute and State University (VPI), USA; John Butnor, Southern Research Station (SRS), USDA Forest Service, USA; Arnold Carrara, Fundacion Centro de Estudios Ambientales del Mediterraneo, Valencia, ES; Jan Cermak, Institute of Forest Ecology, Mendel University of Agriculture and Forestry (MUAF), CZ; Reinhart Ceulemans, Department of Biology, University of Antwerp (UA), BE; Elizabeth M. Cook, Environmental Science Department, Barnard College, USA ; Ellen Cooter, Atmospheric Modeling and Analysis Division, US EPA, USA; E. Frank Corkhill, Arizona Department of Water Resources (ADWR), USA; Jorge Curiel-Yuste, ESPM and Berkley Atmospheric Science Center, University of California-Berkeley, USA; Melissa Davidson, School of Sustainability, ASU, USA; Gabby Deckmyn, Department of Biology, UA, BE; Mark Ducey, Natural Resources and the Environment, University of New Hampshire, USA; Jorge Garcia, Catholic University of Leuven, BE; Burt Gielen, Department of Biology, UA, BE; Patricia Gober, ASU, USA; Carlos A. Gonzalez, Carbon Resources Science Center, University of Florida (UF), USA; Christopher Gough, Department of Biology, Virginia Commonwealth University, USA; Nancy Grimm, School of Life Sciences, ASU, USA; Katharine Hayhoe, Texas Tech, USA; David M. Iwaniec, Urban Studies Institute, Andrew Young School of Policy Studies, Georgia State University, USA; Ivan Janssens, Department of Biology, UA, BE; Annika Jersild, VPI, USA; Kurt Johnsen, SRS, USDA Forest Service, USA; Jehn-Yih Juang, Atmospheric Sciences Modeling Division, National Exposure Research Laboratory, EPA, USA; Gabby Katul, Nicholas School of the Environment and Earth Sciences, Duke, USA; Craig Kirkwood, School of Geographical Sciences, ASU, USA; Andy Kowalski, Grupo Fisica de la Atmósfera, Universidad de Granada, ES; Peter Lamb, School of Meteorology, University of Oklahoma (UO), USA; Jinxing Lin, Chinese Academy of Sciences, Beijing, CN; Tim Lant, Decision Theater, ASU, USA; Kim Ludovici, SRS, USDA Forest Service, USA; Chris Maier, SRS, USDA Forest Service, USA;

Dale Mason, ADWR, USA; Heather McCarthy, Marine Science Program, Jacksonville University, USA; Linda Meiresonne, Institute for Forestry and Game Management, Ministry of the Flemish Community (MFC), BE; Alan Murray, School of Geographical Sciences and Urban Planning, ASU,USA; Bart Muys, Catholic University of Leuven, BE; Nadine Nadezhdina, Institute of Forest Ecology, MUAF, CZ; Johan Neirynck, Research Institute for Nature and Forest (RINF), BE; Ram Oren, Nicholas School of the Environment and Earth Sciences, Duke, USA; Stan Overloop, Institute for Forestry and Game Management, MFC, BE; Sari Palmroth, Nicholas School of the Environment and earth Sciences, Duke, USA; Ray Quay, Decision Center for a Desert City, ASU, USA; Daniel Rasse, Institut d' Astrophysique et de Geophysique, University of Liege, BE; Mark Richman, School of Meteorology, UO, USA; David Sailor, Portland State University (PSU), USA; Fabio Riguzzi, Ordine dei Dottori Agronomi e Forestali della Provincia di Roma, IT; Lisa Samuelson, School of Forestry and Wildlife Sciences, Auburn University, USA; William Schlesinger, Nicholas School of the Environment and Earth Sciences, Duke, USA; John Seiler, Department of Forestry, VPI, USA; Richard Wayne Skaggs, North Carolina State University (NCSU), USA; Jos Van Slycken, RINF, BE; Luke Smallman, University of Edinburgh, UK; Paul Stoy, Nicholas School of the Environment and Earth Sciences, Duke, USA; Osbert Sun, College of Forestry, Oregon State University (OSU), USA; Robert Teskey, Warnell School of Forestry and Natural Resources, University of Georgia, USA; R. Quinn Thomas, Global Change Center, VPI, USA; Valerie A. Thomas, College of Natural Resources and Environment, VPI, USA; Jan Van Slycken, Institute for Forestry and Game Management, MFC, BE; Hans Verbeeck, University of Ghent, Plant Ecology Laboratory, BE; Frederic Vermeiren, Research Institute for Nature and Forest, BE; James Vose, Coweeta Hydrologic Laboratory, USDA Forest Service, USA; Eric Ward, NCSU, USA; Richard Waring, Forest Science, OSU, USA; Dave White, School of Community Resources and Development, Decision Center for a Desert City, ASU, USA; Arnim Wiek, School of Sustainability, Global Institute of Sustainability, ASU; Lauren Withycombe Keeler, School of Sustainability, ASU, USA; Randolph Wynne, Department of Forestry, VPI; Stanley Zarnoch, SRS, USDA F.S.,USA

## Computer Platforms, Applications, and Software Development:

| | | |
|---|---|---|
| **Platforms** | | PC, Mac, Sparc |
| **Operating Systems** | | MS XP, NT(4.03), Windows 7, 8,10, DOS(5.1) |
| **Software Applications** | *Word Processing* | WordPerfect (8.0), MS Word (2003,2007, 2010, 2012,2013) |
| | *Graphics and Drawing* | SigmaPlot (7.0, 10.0), Microcal Origin (5.0), Axum (5.0), Power Point (2002,2010,2013), HG (3.0), Corel Draw! (2.0), Microsoft Visio (2007,2013), InDesign CC 2014, Dreamweaver CC 2014 |
| | *GIS* (Spatial Analyses) | Atlas, Adrisi, ArcView (3.2), ArcMap (9.0,9.3), Quantum GIS (1.7.4) |
| | *Spread Sheets* | Excel (2002, 2007, 2010,2013),Quattro Pro (3.0) |
| | *Statistical Languages* | SAS© (9.x) |
| | *Computer Languages* | FORTRAN (95,97), Powersim, Microsoft C# (2008, 2010, 2012), HTML5, CSS3, Basic, Visual Basic, JavaScript, Python |
| | *Database SQL* | PostgreSQL (and pgAdmin III) |

| | | |
|---|---|---|
| **Software Development** | *Simulation-numerical models* | 1] WaterSim 6.0: A provider-level water policy and planning model for the Phoenix Metro Area: land-cover land-use drivers to water demand & rainwater harvesting.<br>2] WaterSim 5.0: A provider-level water policy and planning model for the Phoenix Metro Area: city water budgets, reclaimed, and RO reclaimed water.<br>3] WaterSim 4.0: A provider-level water policy and planning model for the Phoenix Metro Area.<br>4] WaterSim 3.0: A provider-level water policy and planning model for the Phoenix Metro Area.<br>5] SECRETS-3PGS: Biogeochemical forest process model that uses 3-PG carbon allocation.<br>6] BIOMASS version 13.0 & 14.0: A stand-level forest process model for loblolly pine.<br>7] FHS: A process-oriented simulator to model forest health. USDA Forest Service Forest Health Prog. |
| **Web Development** | *World Wide Web* | 1] WaterSim 6 User Interface (with much help)<br>2] WaterSim 5 User Interface (with much help)<br>3] Terra Guild- www.terraguild.com (2010).<br>4] The North Carolina State Forest Nutrition Cooperative (1992-1997 editions).<br>5] The First Biennial Forest Ecology Workshop (no longer active).<br>6] The Ecological Signature: Environmental Education (2000).<br>7] Adventureinsight.com: Adventure travel |

## Current and Previous Professional Associations and Honorary Societies:

| ***Current*** | ***Previous*** |
|---|---|
| Arizona Hydrological Society | American Association for the Advancement of Science |
| American Geophysical Union | American Institute of Biological Sciences |
| Sigma Xi | Arizona Water Association |
| Xi Sigma Pi (Forestry Honor Society) | Ecological Society of America |
| | Sigma Xi |
| | Xi Sigma Pi (Forestry Honor Society) |
| | Society of America Foresters |

## Human Resource Programs:

***Workshops/ programs***

**Leadership:**

**Dare to Lead for managers part 1. The Heart of Daring Leadership Intro.** OHR Leadership and Workforce Development. Pam Brooks facilitator. ASU, 18 October, 2019.

**Ten Steps for Leading Productive Meetings.** Research Academy**,** Office of Knowledge Enterprise Development, ASU, 19 April 2017.

**Self-Expression and Leadership Program.** Landmark Education, April 2013 to August 2013.

**Introduction Leaders Program.** Landmark Education, August 2013-April 2014.

**Communication:**

**Communication Tips for Improving Relationships: 28 April, 2020. ASU Employee Wellness.** Elizabeth Badalamenti, moderator.

**Panel with Russell Wyland:** Your successful grant proposal, ASU, Ross-Blakley Hall, Institute for Humanities Research, 25 September, 2019.

**Research Computing python workshop,** ASU, 13 September, 2019.

**10 Steps for Leading Productive Meetings**, Research Academy, ASU, 19 April, 2017.

**Power to Create**. Landmark Education, 5-6 April, 2014.

**Access to Power**. Landmark Education, 14-15 December, 2013.

**Management:**

**Locating Funding.** Office of Knowledge Enterprise Development, ASU, 1 October, 2010.

**Time Management**. Human Resources Workshop, NCSU, June, 1997.

**The Myers-Briggs Type Indicator.** Human Resources Workshop, NCSU, 13 August, 1996.

**Managing Workshop Diversity**. Human Resources Workshop, NCSU, 9 August, 1995.

**Effective Interviewing Techniques**. Human Resources Workshop, NCSU, February, 1995.

**Transforming the University Toward a more Diverse Academic Community**. Multi-Cultural Workshop, NCSU, 19 February, 1993.

## Student Advisory/Supervision:

**2019 –** Adora Shortridge

**2018 –** Samantha Matta

**2017 –** Samantha Matta, Michael Steptoe, Shichir Inamdar, Rachel Von Gnechten, Miranda Kincade

**2016 –** Samantha Matta, Michael Steptoe, Rachel Von Gnechten, Mario Chavez

**2015 –** Michael Steptoe

## Other Non-Profit Work:

**2020– Board Member; Las Brisas Townhomes HOA**
**2018 – Board Member; at large:** Arizona Mountaineering Club
**2017 – President:** Arizona Mountaineering Club
**2016 – President:** Arizona Mountaineering Club
**2015 – President:** Arizona Mountaineering Club
**2014 – Vice-President:** Arizona Mountaineering Club
**2013 – Board Member; at large:** Arizona Mountaineering Club

## Webinar Continuing Education:
## 2020-

- ASU Employee Wellness - Communication Tips for Improving Relationships – Tempe. 28 April, 2020. 12pm to 1pm.
- Water Risk in the Colorado River: An exploration of private sector solutions. Ceres (Ceres.org). 7 May, 2020. 10am to 11:30 am.
- Health & Equity Impacts of Extreme Heat: Security and Sustainability Forum. 14 May, 2020. 9:30 am to 11:00 am.
- Men Allies for Gender Equity. 15 October, 2020. 10:00 to 12: pm. Roger Green. North Dakota State University.
- Sustainability Series: Rigidly Defined Infrastructure for Climate Uncertainty and Doubt". 15 October, 2020. 1:00 pm to 2:00 pm. Mike Chester, ASU.

## Personal Information:

***Marital Status*:** Not Married.
***Birth Date***: 07-03-56.
***Birth Place*:** Detroit Michigan, USA.
***Citizenship***: US.
***Local mailing address****: P.O. Box 7812, Tempe, AZ. 85281*.
***Activities***: Writing, reading, rock climbing, hiking, skiing.