

Joshua K. Roundy

Assistant Professor

Department of Civil, Environmental, and Architectural Engineering

University of Kansas

jkroundy@ku.edu, (785)-864-3134

<http://hydrology.faculty.ku.edu/index.html>

Google Scholar H-Index: 15, Total citations: 1117, Citations-2019: 282

EDUCATION

Ph.D. Princeton University: Civil & Environmental Engineering, (2014).

M.S. Utah State University: Civil & Environmental Engineering, Emphasis Water Resources, (2009).

B.S. Utah State University: Civil & Environmental Engineering, Mathematics Minor, (2009).

EMPLOYMENT HISTORY

Academic

Assistant Professor, Department of Civil, Environmental, and Architectural Engineering, University of Kansas, Lawrence, Kansas, 2015 - Present

Research

NASA Post-Doctoral Fellow, Hydrologic Science Branch, Goddard Space Flight Center, 2014 - 2015

TEACHING EXPERIENCE

List of Courses Taught

CE 455 Hydrology (Fall 2015) – Enrolled: 15, Average Student Evaluation: 4.36/5.0

CE 455 Hydrology (Spring 2016) – Enrolled: 38, Average Student Evaluation: 4.75/5.0

CE 751 Physical Hydrology (Fall 2016) – Enrolled: 11, Average Student Evaluation: 4.45/5.0

CE 625 Probability and Statistics (Spring 2017) – Enrolled: 3, Average Student Evaluation: 5.0/5.0

CE 455 Hydrology (Spring 2017) – Enrolled: 56, Average Student Evaluation: 4.58/5.0

CE 760 Stochastic Hydrology (Fall 2017) – Enrolled: 15, Average Student Evaluation: 4.55/5.0

CE 455 Hydrology (Spring 2018) – Enrolled: 46, Average Student Evaluation: 4.41/5.0

CE 552 Water Resources Engineering (Fall 2018) – Enrolled: 33, Average Student Evaluation: 4.2/5.0

CE 455 Hydrology (Spring 2019) – Enrolled: 54, Average Student Evaluation: 4.54/5.0

CE 751 Physical Hydrology (Spring 2019) – Enrolled: 11, Average Student Evaluation: 4.66/5.0

CE 552 Water Resources Engineering (Fall 2019) – Enrolled: 41, Average Student Evaluation: 4.7/5.0

Advising

Undergraduate Student Advising (28)

Undergraduate Research (7)

Masters (2)

Doctoral (2)

Awards

Center for Teaching Excellence Internal Grant: Incorporating project-based learning into the undergraduate hydrology course. Total Award Amount: \$1284.

JOURNAL ARTICLES (18) * Indicates student

Zeng, Dingwen, Yuan, Xing and **Roundy, J. K.** (2019). Effect of Teleconnected Land-atmosphere Coupling on Northeast China Persistent Drought in Spring-Summer of 2017. *Journal of Climate*, 32(21), 7403-7420. doi:10.1175/JCLI-D-19-0175.1.

Santanello, J. A., Dirmeyer, P. A., Ferguson, C. R., Findell, K. L., Tawfik, A. B., Berg, A., Ek, M., Gentine, P., Guillod, B., van Heerwaarden, C., **Roundy, J. K.**, and Wulfmeyer, V. (2018). Land-Atmosphere Interactions: The LoCo Perspective. *Bulletin of the American Meteorological Society*, 99(6). doi: 10.1175/BAMS-D-17-0001.1.

Roundy, J. K., & Santanello, J. A. (2017). Utility of Satellite Remote Sensing for Land-Atmosphere Coupling and Drought Metrics. *Journal of Hydrometeorology*, 18(3), 863–877. doi: 10.1175/JHM-D-16-0171.1.

Demaria, E. M., **Roundy, J. K.**, Wi, S., & Palmer, R. N. (2016). The Effects of Climate Change on Seasonal Snowpack and the Hydrology of the Northeastern and Upper Midwest United States. *Journal of Climate*, 29(18), 6527-6541.

Lievens, H., De Lannoy, G., Al Bitar, A., Drusch, M., Dumedah, G., Franssen, H.-J. H., Kerr, Y., Tomer, S. K., Martens, B., Merlin, O., Pan, M., **Roundy, J. K.**, & Other. (2016). Assimilation of SMOS soil moisture and brightness temperature products into a land surface model. *Remote Sensing of Environment*, 180, 292-304. doi:10.1016/j.rse.2015.10.033

Demaria, E. M., Palmer, R. N., & **Roundy, J. K.** (2016). Regional climate change projections of streamflow characteristics in the Northeast and Midwest US. *Journal of Hydrology: Regional Studies*, 5, 309-323. doi:10.1016/j.ejrh.2015.11.007

Song, H.-J., Ferguson, C. R., & **Roundy, J. K.** (2016). Land-atmosphere coupling at the Southern Great Plains Atmospheric Radiation Measurement (ARM) field site and its role in anomalous afternoon peak precipitation. *Journal of Hydrometeorology*, 17(2), 541-556. doi:10.1175/JHM-D-15-0045.1

Yuan, X., **Roundy, J. K.**, Wood, E. F., & Sheffield, J. (2015). Seasonal forecasting of global hydrologic extremes: system development and evaluation over GEWEX basins. *Bulletin of the American Meteorological Society*, 96(11). doi:10.1175/BAMS-D-14-00003.1

Lievens, H., Kumar Tomer, S., Al Bitar, A., De Lannoy, G. J.M., Drusch, M., Dumedah, G., Hendricks Franssen, H.-J., Kerr, Y., Pan, M., **Roundy, J. K.**, Vereecken, H., Walker, J. P., Wood, E. F., Verhoest, N. E.C., & Pauwels, V. R.N. (2015). SMOS soil moisture assimilation for improved hydrologic simulation in the Murray Darling Basin, Australia. *Remote Sensing of Environment*, 168, 146–162. doi:10.1016/j.rse.2015.06.025

Santanello, J. A., **Roundy, J. K.**, & Dirmeyer, P. A. (2015). Quantifying the Land-Atmosphere Coupling Behavior in Modern Reanalysis Products over the U.S. Southern Great Plains. *Journal of Climate*, 28(14), 5813–5829. doi:10.1175/JCLI-D-14-00680.1

Roundy, J. K., Yuan, X., Schaake, J., & Wood, E. F. (2015). A framework for analyzing seasonal prediction through canonical event analysis. *Monthly Weather Review*, 143(6), 2404–2418. doi:10.1175/MWR-D-14-00190.1

Roundy, J. K., & Wood, E. F. (2015). The attribution of land-atmosphere interactions on the seasonal predictability of drought. *Journal of Hydrometeorology*, 16(2), 793-810. doi:10.1175/JHM-D-14-0121.1

Chaney, N. W., **Roundy, J. K.**, Herrera, J. E., & Wood, E. F. (2015). High-Resolution Modeling of the Spatial Heterogeneity of Soil Moisture: Applications in Network Design and Spatial Downscaling. *Water Resources Research*, 51(1), 619–638. doi:10.1002/2013WR014964

Roundy, J. K., Ferguson, C. R., & Wood, E. F. (2013). Impact of land-atmospheric coupling in CFSv2 on drought prediction. *Climate Dynamics*, 43(1-2), 421-434. doi:10.1007/s00382-013-1982-7

Roundy, J. K., Ferguson, C. R., & Wood, E. F. (2013). Temporal Variability of Land–Atmosphere Coupling and Its Implications for Drought over the Southeast United States. *Journal of Hydrometeorology*, 14(2), 622-635. doi:10.1175/JHM-D-12-090.1

Yuan, X., Wood, E. F., **Roundy, J. K.**, & Pan, M. (2013). CFSv2-based seasonal hydroclimatic forecasts over conterminous United States. *Journal of Climate*, 26(13), 4828-4847. doi:10.1175/JCLI-D-12-00683.1

Wood, E. F., Roundy, J. K., et al. (2012). Reply to comment by Keith J. Beven and Hannah L. Cloke on “Hyperresolution global land surface modeling: Meeting a grand challenge for monitoring Earth's terrestrial water”. *Water Resources Research*, 48(1), W01802. doi:10.1029/2011WR011202

Wood, E. F., **Roundy, J. K.**, et al. (2011). Hyperresolution global land surface modeling: Meeting a grand challenge for monitoring Earth's terrestrial water. *Water Resources Research*, 47(5), W05301. doi:10.1029/2010wr010090

Journal Articles In-Progress (4)

K.E. Logan, Brunsell, N.A., and **Roundy J.K.** (under review). Comparison of land-atmosphere coupling metrics using long-term eddy covariance measurements at heterogeneous grassland sites. *Climate Dynamics*.

Crowl, Madison* and **Roundy, J.K.** (in preparation). Incorporating Climate Model Projections into the Development of IDF Estimates for the Kansas City Area. *Journal of Hydrologic Engineering*.

Yuqi Zhang*, **Roundy, J.K.**, & Santanello, J.A. (in preparation). Evaluating influence of resolutions and cumulus parameterization on spatial precipitation pattern of NU-WRF in Eastern Kansas and Western Missouri. *Climate Dynamics*.

Hosseini, Atefeh*, **Roundy, J.K.** and Brunsell, Nathaniel (in preparation). Understanding the Impact of Vegetation Dynamic in the Noah-MP Land Surface Model over C3/C4 Grasslands. *Hydrology and Earth System Science*.

BOOK CHAPTERS (2)

Roundy, J. K., Schaake, J., & Duan, Q. (2019). Hydrological Predictability, Scales, and Uncertainty Issues. In: Duan Q., Pappenberger F., Thielen J., Wood A., Cloke H., Schaake J. (eds) *Handbook of Hydrometeorological Ensemble Forecasting*. Springer, Berlin, Heidelberg. doi.org/10.1007/978-3-642-40457-3_8-1

Wood E.F., Yuan X., **Roundy J.K.**, Pan M., Luo L. Q. (2015). Seasonal Drought Forecasting on the Example of the USA. In: Duan Q., Pappenberger F., Thielen J., Wood A., Cloke H., Schaake J. (eds) *Handbook of Hydrometeorological Ensemble Forecasting*. Springer, Berlin, Heidelberg. doi.org/10.1007/978-3-642-40457-3_52-1.

SCHOLARLY PRESENTATIONS (41)

Invited

Roundy, J. K. (2019, November). Global Trends in the Coupling Drought Index. Workshop on Land-atmosphere feedbacks and dry extremes under changing climate, Ghent, Belgium (Oral).

Roundy, J. K. (2019, November). The National Water Model and the KU connection. USGS, Lawrence, Kansas (Oral).

Roundy, J. K. (2018, April). Robust and Resilient Engineering Through Prediction of the Water and Climate System. Utah Valley University, Orem, Utah (Oral).

Roundy, J. K., & Santanello, J. (2017, December). The Impact of Land-Atmosphere Coupling on the 2017 Northern Great Plains Drought. AGU Fall Meeting, New Orleans, LA (Oral).

Roundy, J. K. (2016, May). A Stochastic Model for Seasonal Prediction of Drought. Computational and Applied Math Seminar at the University of Kansas, Lawrence, KS.

Roundy, J. K. (2016, March). The Water Time Machine. Kansas Geological Survey, Lawrence, KS.

Roundy, J. K. (2015, November). Using Satellite Remote Sensing for Drought Monitoring and Prediction. Department of Geography, University of Kansas, Lawrence, KS.

Roundy, J. K. (2015, October). Using Satellite Remote Sensing for Drought Monitoring and Prediction. University at Albany, Albany, New York.

Roundy, J. K. (2015, March). Water Sustainability through seasonal prediction. Arizona State University, Tempe, AZ.

Other

Zhang, Y.*, **Roundy, J. K.**, & Santanello, J. (2020, January). Evaluating the Influence of Resolution and Cumulus Parameterization at 4 km on Spatial Precipitation Patterns of NU-WRF in Eastern Kansas and Western Missouri. AMS Annual Meeting, Boston, MA (Poster).

Roundy, J. K., & Arnold, E. (2020, January). Airborne Snow Depth Retrieval for Improved Hydrological Modeling in the Black Hills of South Dakota. AMS Annual Meeting, Boston, MA (Oral).

Hosseini, A.*, **Roundy, J. K.**, & Brunzell, N. (2019, December). Understanding the Impact of Vegetation Dynamic in the Noah-MP Land Surface Model over C3/C4 Grasslands. AGU Annual Meeting, San Francisco, CA (Poster).

Peltier, E., Siddiqui, D., **Roundy, J.K.**, Sullivan, P., & Young, C. Bryan. (2019, November). Modeling Nutrient Removal in Constructed Wetlands Collecting Terraced Field Runoff. Governor's Conference on the Future of Water in Kansas, Wichita, KS (Oral).

Zhang, Y.*, **Roundy, J. K.**, & Santanello, J. (2019, January). A Case Study of the Impact of Land-Atmosphere Coupling on a Persistent Regional Drought in Northeastern Kansas and Northern Missouri. AMS Annual Meeting, Phoenix, AZ (Oral).

Crowl, M.*, & **Roundy, J. K.** (2019, January). Incorporating Climate Model Projections into the Development of IDF Estimates for the Kansas City Area. AMS Annual Meeting, Phoenix, AZ (Poster).

Hosseini, A.*, **Roundy, J. K.**, & Brunsell, N. (2019, January). The Impact of Vegetation Dynamics on Surface Fluxes in the Noah–MP Land Surface Model. AMS Annual Meeting, Phoenix, AZ (Poster).

Roundy, J. K., Ferguson, C. R. & Santanello, J. (2018, May). The Impact of Land-Atmosphere Coupling on the development of Flash Droughts. GEWEX 8th Open Science Meeting, Canmore, Alberta, Canada (Oral).

Roundy, J. K., Zhang, Y. & Santanello, J. (2018, April). Impact of Spatio-Temporal Resolutions on Dynamical Downscaling of Precipitation Over CONUS. EGU General Assembly, Vienna, Austria (Oral).

Zhang, Y., **Roundy, J. K.**, & Santanello, J. (2018, January). Evaluation of precipitation from WRF models at multiple spatio-temporal resolutions in CONUS. AMS Annual Meeting, Austin, TX (Poster).

Roundy, J. K., Ferguson, C. R. & Santanello, J. (2018, January). Current trends in land-atmosphere coupling related to drought. AMS Annual Meeting, Austin, TX (Poster).

Roundy, J. K., & Roth, G. (2017, January). Optimal drought forecasts from a multi-model framework. AMS Annual Meeting, Seattle, WA (Oral).

Roundy, J. K., & Santanello, J. (2016, December). Utility of Satellite Remote Sensing for Land-Atmosphere Coupling and Drought Metrics. AGU Fall Meeting, San Francisco, CA (Oral).

Roundy, J. K., & Johnson, F. (2016, September). A simple large-scale routing scheme for seasonal streamflow predictions that includes reservoir characteristics. GEWEX: Including Water Management in Large Scale Models, Gif-sur-Yvette, France (Oral).

Roundy, J. K., & Santanello, J. (2016, June). Impact of Dynamical Downscaling on Land Surface Model Forcings. HEPEX Workshop, Quebec City, Canada (Poster).

Roundy, J. K., & Santanello, J. A. (2016, January). Satellite remote sensing observations of land-atmosphere interactions for understanding drought mechanisms. AMS Annual Meeting, New Orleans, LA (Poster).

Roundy, J. K., Santanello, J. A., & Ferguson, C. R. (2015, December). Impact of dynamical downscaling on model representation of land-atmosphere coupling strength. AGU Annual Meeting, San Francisco, CA (Poster).

Roundy, J. K., & Santanello, J. A. (2015, October). Satellite remote sensing observations of land-atmosphere interactions for monitoring and understanding mechanisms of drought. NASA Sounder Science Team Meeting, Greenbelt, MD (Oral).

Roundy, J. K., & Santanello, J. A. (2015, April). Land-atmosphere coupling metrics from satellite remote sensing as a global drought-monitoring tool. EGU Annual Meeting, Vienna, Austria (Oral).

Roundy, J. K., & Santanello, J. A. (2015, January). The potential use of land-atmosphere coupling metrics as a global drought-monitoring tool. AMS Annual Meeting, Phoenix, AZ (Oral).

Roundy, J. K., Santanello, J. A., Koster, R., & Wood, E. F. (2014, December). The attribution of land-atmosphere interactions on the seasonal predictability of drought. AGU Fall Meeting, San Francisco, CA (Poster).

Roundy, J. K., Santanello, J. A., & Wood, E. F. (2014, July). The attribution of land-atmosphere interactions on the seasonal predictability of drought. 7th International Scientific Conference on the Global Water and Energy Cycle, The Hague, Netherlands (Poster).

Roundy, J. K., & Wood, E. F. (2014, February). The importance of land-atmosphere coupling for seasonal drought prediction. WMO-NOAA Seasonal to Subseasonal International Conference, College Park, MD (Oral).

Roundy, J. K., & Wood, E. F. (2014, January). The importance of land-atmosphere coupling for seasonal drought prediction. AMS Annual Meeting, Atlanta, GA (Poster).

Roundy, J. K., Ferguson, C. R., & Wood, E. F. (2013). Land-atmosphere coupling and seasonal forecast skill over the Great Plains and the Southeast United States. AMS Annual Meeting, Austin, TX (Oral).

Roundy, J. K., Yuan, X., & Wood, E. F. (2013). The optimal time and space scale for downscaling the CFSv2 forecast for seasonal hydrologic predictions. AGU Chapman Conference on Seasonal to Interannual Hydroclimate Forecasts and Water Management, Portland, OR (Oral).

Roundy, J. K., Ferguson, C. R., & Wood, E. F. (2012). The temporal variability of land-atmosphere coupling regimes in the Southeast United States. Poster, 4th WCRP International Conference on Reanalysis, Silver Spring, MD (Poster).

Roundy, J. K., Yuan, X., & Wood, E. F. (2012). Land surface model calibration and hydrologic forecasting over the Southeastern United States. HEPEX Workshop, Beijing, China (Oral).

Roundy, J. K., Chaney, N., & Wood, E. F. (2011). Assessment of large scale and regional scale models for application to a high resolution global land surface model. AGU Fall Meeting, San Francisco, CA (Oral).

Roundy, J. K., Ferguson, C. R., & Wood, E. F. (2011). Local Land-Atmosphere Coupling (LoCo): Forecast precipitation skill for different land-atmosphere coupling regimes in the Southeast United States. Poster, WCRP Open Science Conference, Denver, CO (Poster).

Roundy, J. K., Sheffield, J., Wood, E. F., Mo, K. C., & Dobur, J. (2011). Drought monitoring and forecasting in the Apalachicola-Chattahoochee-Flint River Basin in the Southeastern United States. AMS Annual Meeting, Seattle, WA (Oral).

Roundy, J. K., Bastidas, L. A., Goncalves, L. G., & Shuttleworth, W. J. (2008). Data- and parameter induced uncertainty estimation for Land Surface Models. Poster, AGU Fall Meeting, San Francisco, CA (Poster).

GRANT FUNDING

Proposals Funded

Roundy, J. K. (Co-Principal), Emily Arnold (PI). Airborne Snow Depth Retrieval for Improved Hydrological Modeling. National Oceanic and Atmospheric Administration **\$499,926**, (September 2019 - August 2021).

Roundy, J. K. (Principal), Amy Hansen and Admin Husic. Bridge Deck Drainage: Evaluation of KDOT's Current Design Guidance. Kansas Department of Transportation **\$65,638**, (June 2019 - May 2020)

Proposals Under Review

Roundy, J. K. (Principal), Andrea Brookfield, Sam Zipper and Mary Hill. A global satellite-based estimate of streamflow depletion. National Aeronautics and Space Administration **\$604,416**, Submitted November 17, 2019 (April 2020 – March 2024).

Roundy, J. K. (Co-Principal), Dietrich Earnhart (PI), and Terry Loecke. CNH2-L: Modeling Coupled Natural and Human Systems to Assess the Effect of Total Maximum Daily Load Policies on Water Quality under Increasingly Extreme Climate Conditions. National Science Foundation **\$1,562,069**, Submitted November 15, 2019 (July 2020 – June 2024).

Roundy, J. K. (Senior Personnel), Amy Hansen (PI), Sergey Rabotyagov, Peter Hawthorne. CNH2-S: Multi-scalar Investigation of Integrated Socio-environmental System Hardening via Risk Intolerance and Climate Dynamics in Intensively Agriculturally Managed Watersheds. National Science Foundation **\$729,382**, Submitted November 15, 2019 (July 2020 – June 2023).

Roundy, J. K. (Co-Principal), Nathaniel Brunsell (PI), David Rahn and Erik Van Vleck. Assessing the Impact of Urban Structure on Regional Hydrometeorological Persistence and Urban Heat Island Dynamics. National Aeronautics and Space Administration **\$879,144**, Submitted November 15, 2019 (June 2020 – May 2023).

Roundy, J. K. (Principal), Joseph Santanello and Peter Shellito. Global Satellite Based Prediction of Drought Evolution. National Aeronautics and Space Administration **\$449,806**, Submitted July 11, 2019 (November 2019 – October 2022).

Roundy, J.K. (Co-Principal), Nathaniel Brunsell (PI) and Erik Van Vleck. Multiscale information theoretic approach to data fusion and assimilation for complex land-surface interactions. National Aeronautics and Space Administration **\$242,167**, Submitted Apr 4, 2019 (October 2019 - September 2021).

SERVICE RECORD**Committees and Panels**

Program Chair 33rd Conference on Hydrology, AMS Annual Meeting, Phoenix, Arizona, (2018-2019)
Organizing Committee GEWEX 8th International Open Science Meeting, Canmore, Canada, May 2018.
NASA Grant Review Panel (2016 and 2018)

Grant Reviewer, U.S. Department of Energy, (July 2017)

Program Chair 32nd Conference on Hydrology, AMS Annual Meeting, Austin Texas, (2017-2018)

Advisory Panel for GEWEX North American Regional Hydroclimate Project, Member. (2016-Present)

GEWEX Global Land/Atmosphere System Study (GLASS) Panel, Member. (2016-Present)

Organizing Committee GEWEX 7th International Conference The Hague, Netherlands (2014).

Hydrology Committee, American Meteorological Society, Member. (2012 - Present)

Conference Sessions

Drought Analysis and Prediction, 34th Conference on Hydrology, AMS Annual Meeting, Boston, MA, Session Co-Chair. (January 2020)

Precipitation processes and observations for atmospheric, land surface, and hydrological modeling, 33rd Conference on Hydrology, AMS Annual Meeting, Phoenix, AZ, Session Co-Chair. (January 2019)

Ensemble hydro-meteorological forecasting techniques and predictive uncertainty estimation, EGU General Assembly, Session Co-Chair. (April 2018)

Drought Analysis and Prediction, 32nd Conference on Hydrology, AMS Annual Meeting, Austin, TX, Session Co-Chair. (January 2018)
Predictability and predictive uncertainty estimation in hydrologic forecasting, EGU General Assembly, Session Co-Chair. (April 2017)
Drought Analysis and Prediction, 31st Conference on Hydrology, AMS Annual Meeting, Seattle, WA, Session Chair. (January 2017)
Predictability and predictive uncertainty estimation in hydrologic forecasting, EGU General Assembly, Session Co-Chair. (April 2016)
Drought Analysis and Prediction, 30th Conference on Hydrology, AMS Annual Meeting, New Orleans, Session Chair. (January 2016)

Journal Article Reviewer

Journal of Climate, Journal of Hydrometeorology, Journal of Geophysical Research-Atmospheres,, Water Resources Research, Journal of Hydrology, Scientific Reports-Nature, Weather and Forecasting, Earth System Dynamics, Remote Sensing, Environmental Modeling & Software, Journal of Meteorological Research, Environmental Modeling & Software, Geoscientific Model Development, Journal of Environmental Management, Water, Journal of Hydrologic Engineering, Hydrological Processes

University/Department Service

Search Committee for faculty position in Environmental Engineering. Member. Civil, Environmental & Architectural Engineering. (Fall 2017 - Spring 2018).
Search Committee for faculty position in Water Resources. Member. Civil, Environmental & Architectural Engineering. (Fall 2017 - Spring 2018).
Search Committee for faculty position in Atmospheric Science. Member. (Fall 2017 - Spring 2018).
Facilitated the implementation of the Masters Accelerator Program. (2017-2018)
ABET Committee. Member. Civil, Environmental & Architectural Engineering. (2016 - Present).
Fundamentals of Engineering Exam Review Series. Lecturer. (2016 - Present).
Search Committee for faculty position in Atmospheric Science. Member. (Fall 2015 - Spring 2016).

PROFESSIONAL ORGANIZATIONS

American Geophysical Union, (2008 - Present)
American Meteorological Society, (2008 - Present)
Hydrologic Ensemble Prediction Experiment, (2012 - Present)
European Geophysical Union, (2014 - Present)
American Society of Civil Engineers, (Fall 2015 - Present)

AWARDS

Winner of the GEWEX and WCRP ECR Video Competition (2016).