

C. Bryan Young, Ph.D., P.E.

Associate Professor
Civil, Environmental, and Architectural Engineering
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Education:

Ph.D. in Civil and Environmental Engineering, University of Iowa (2000).
M.S. in Water Resources Engineering, University of Kansas (1996).
B.S. in Civil and Environmental Engineering, University of Kansas (1995).

Work Experience:

Faculty Fellow, University of Kansas Honors Program, August 2006 – Present.
Associate Professor, University of Kansas Department of Civil, Environmental, and Architectural Engineering, August 2006 – present.
Assistant Professor, University of Kansas Department of Civil, Environmental, and Architectural Engineering, January 2000 – August 2006.

Professional Licensure

Licensed Professional Engineer in the State of Kansas

Honors and Awards:

University of Kansas School of Engineering, Miller Scholar Award, 2005, 2009.
CEAE Teaching Excellence Award, 2007.
University of Kansas, Kemper Teaching Award, 2007.
University of Kansas School of Engineering, Bellows Scholar, 2007.
ASCE, *Journal of Hydrologic Engineering* Best Technical Note Award, 2005.
University of Kansas, Center for Teaching Excellence Award, 2004.
National Science Foundation Graduate Research Fellow, 1996-1999.

Peer Reviewed Papers:

In Press: Young, C. B. "GIS-Based Watershed Characterization using Helicopter Videography and Historical Aerial Photography," book chapter submitted to the Kansas Water Resources Institute (KWRI) for peer review.

In Press: Young, C. B., and B. M. McEnroe. "Evaluating the Form of the Rational Method," accepted for publication in the *ASCE Journal of Hydrologic Engineering*.

- In Press: Khatri, D., J. Han, R. L. Parsons, C. B. Young, J. L. Brennan, and R. Corey. "Laboratory Evaluation of Deformations of Steel-Reinforced High-Density Polyethylene Pipes under Static Loads," accepted for publication in ASCE's *Journal of Materials in Civil Engineering*.
- In Review: Wilson, C., N. Brunsell, C. B. Young, D. B. Mechem. "Trends in 20th Century Weather Extremes over the Continental United States," submitted for publication in *Theoretical and Applied Climatology*.
- Chen, X., E. Peltier, B. Sturm, and C. B. Young (2013). "Nitrogen Removal and Nitrifying and Denitrifying Bacteria Quantification in a Stormwater Bioretention System," *Water Research*, 47(4), p. 1691-1700.
- Young, C. B., B. M. McEnroe, and A. C. Rome (2009). "Empirical Determination of Rational Method Runoff Coefficients," *Journal of Hydrologic Engineering*, 14(12), p. 1283-1289.
- Schrock, Steven D., Young, C. Bryan, and Chellamani, Deepak (2009). "Use of Monte Carlo Simulation to Evaluate the Kansas Department of Transportation's Maintenance Quality Assurance Program," *Transportation Research Circular Number E-C135: Maintenance Management 2009*.
- Young, C. B., and N. A. Brunsell (2008). "Evaluating NEXRAD Estimates for the Missouri River Basin: An Analysis using Daily Raingauge Data," *Journal of Hydrologic Engineering*, 13(7), 549-553.
- Medina, M. A., and C. B. Young (2008). "Evaluating the Sensitivity of Attic Radiant Barrier Performance to Climate Parameters," *Journal of Energy Engineering*, 134(1), 2-5.
- Brunsell, N. A. and C. B. Young (2008). "Land Surface Response to Precipitation Events using MODIS and NEXRAD Data," *International Journal of Remote Sensing*, 29(7), 1965-1982.
- Kim, I.-J., S. L. Hutchinson, C. B. Young, and J. M. S. Hutchinson (2007). "Riparian Ecosystem Management Model (REMM): Sensitivity to Soil, Vegetation, and Weather Input Parameters," *Journal of the American Water Resources Association*, 43(5), 1171-1182.

- Young, C. B. and B. M. McEnroe (2006). "Updated Precipitation Frequency Estimates for Kansas City: A Comparison with TP-40 and Hydro-35," *Journal of Hydrologic Engineering*, 11(3), 206-213.
- Parsons, R. L., C. B. Young, and E. R. Kneebone (2006). "Structuring a Comprehensive Georeferenced Subgrade Database". *Pavement Mechanics and Performance*. ASCE Geotechnical Special Publication 154. ASCE, Reston, Virginia. 173-179.
- Medina, M. A., and C. B. Young (2006). "A Perspective on the Effect of Climate and Local Environmental Variables on the Performance of Attic Radiant Barriers in the United States," *Building and Environment – The International Journal of Building Science and Its Applications*, 41(12), 1767-1778.
- Kucera, P. A., W. F. Krajewski, and C. B. Young (2004). "Radar Beam Occultation Studies using GIS and DEM Technology: An Example Study of Guam," *Journal of Atmospheric and Oceanic Technology*, 21(7), p. 995–1006.
- Young, C. B. and B. M. McEnroe (2003). "Sampling Adjustment Factors for Rainfall Recorded at Fixed Time Intervals," *Journal of Hydrologic Engineering*, 8(5), p. 294-296.
- Bradley, A. A., C. D. Peters-Lidard, B. R. Nelson, J. A. Smith, and C. B. Young (2002). "Raingage Network Design using NEXRAD Precipitation Estimates," *Journal of the American Water Resources Association*, 38(5), p. 1393-1407.
- Young, C. B., A. A. Bradley, W. F. Krajewski, A. Kruger, and M. L. Morrissey (2000). "Evaluating NEXRAD Multisensor Precipitation Estimates for Operational Hydrologic Forecasting," *Journal of Hydrometeorology*, 1(3), p. 241-254.
- Holman-Dodds, J. K., C. B. Young, and B. R. Nelson (2000). "Computational-Reach Length for Prismatic Channels," *Journal of Hydraulic Engineering*, 126(6), p. 467-469.
- Young, C. B., B. R. Nelson, A. A. Bradley, J. A. Smith, C. D. Peters-Lidard, A. Kruger, and M. L. Baeck (1999). "An Evaluation of NEXRAD Precipitation Estimates in Complex Terrain," *Journal of Geophysical Research*, 104(D16), p. 19,691-19,703.

Conference Papers

- Khatri, D. K., J. Han, R. L. Parsons, C. B. Young (2012). "Laboratory Evaluation of Deformations of Steel-Reinforced High-Density Polyethylene Pipes under Static Loads," Proceedings of the 91st Annual Meeting of the Transportation Research Board.
- Young, C. B., and B. M. McEnroe (2012). "Calibration of Runoff Curve Numbers for a Small Urban Watershed," Proceedings, 2012 EWRI Congress.
- McEnroe, B. M. and C. B. Young (2012). "Calibration of Storm Drainage Design Inputs for a Small Urban Watershed," Proceedings, 2012 EWRI Congress.

- Peltier, E., C. B. Young, X. Chen, A. King, and D. Horna (2011). "Road Salt Impacts on Bioretention Systems," Proceedings of the 2011 Philadelphia Low Impact Development Symposium.
- Parr, A. D., J. Martin, and C. B. Young (2010). "Hydraulic Forces on Submerged Bridge Decks," *TRB 89th Annual Meeting: Compendium of Papers DVD*, Transportation Research Board of the National Academies, Washington, D.C.
- Young, C. Bryan (2010). "Comparing NEXRAD Error to use of a Nearby Gauge," *TRB 89th Annual Meeting: Compendium of Papers DVD*, Transportation Research Board of the National Academies, Washington, D.C.
- Schrock, Steven D., Young, C. Bryan, Chellamani, Deepak, and Fuller, Robert (2010). "Evaluation of Maintenance Quality Assurance Program using Monte Carlo Simulation," *TRB 89th Annual Meeting: Compendium of Papers DVD*, Transportation Research Board of the National Academies, Washington, D.C.
- Young, C. B., Peltier, E., and Kindscher, K (2010). "Relating Vegetation Composition in a Bioretention Cell to Small-Scale Hydrologic and Topographic Variability," abstract submitted to the ASCE World Environmental & Water Resources Congress.
- McEnroe, B. M., Shelley, J. E., and Young, C. B (2010). "An Analytical Reference-Reach Method for Natural Channel Design," Proceedings of the EWRI World Environmental & Water Resources Congress, 2010.
- Peltier, E., Saadi, J., Chen, X., and Young, C. B (2010). "Metal Sequestration and Remobilization in Bioretention Media," Proceedings of the EWRI World Environmental & Water Resources Congress, 2010.
- Shelley, J. E., Young, C. B., and McEnroe, B. M (2010). "The Rosgen Rosetta Stone: Translating Rosgen Terminology," Proceedings of the EWRI World Environmental & Water Resources Congress, 2010.
- Young, C. B., McEnroe, B. M., and Rome, A. C. (2009) "Empirical Support for the Rational Method." *TRB 88th Annual Meeting: Compendium of Papers DVD*, Transportation Research Board of the National Academies, Washington, D.C.
- Young, C. B., B. M. McEnroe, and A. C. Rome (2009). "Regional Regression Analysis and the Rational Method," Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.
- Young, C. B., B. M. McEnroe, and A. C. Rome (2009). "Are Rational C Values Too Low?" Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.

Shelley, J., C. B. Young, and B. M. McEnroe. "Bankfull Discharge for Kansas Natural Alluvial Channel Design," Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.

McEnroe, B. M., J. E. Shelley, and C. B. Young. "A Simple Analytical Design Method for Small Alluvial Channels," Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.

Porter, E., J. Kenny, E. Peltier, and C. B. Young. "A Student-Led Effort to Assess the Effect of Urban Runoff on Potter Lake," Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.

Peltier, E., X. Chen, K. Kindscher, and C. B. Young. "Long-term Effectiveness of a Bioretention System Treating Road Runoff in Northeastern Kansas," Proceedings of the EWRI World Environmental & Water Resources Congress, 2009.

Parsons, R. L., C. B. Young, and E. R. Kneebone (2006). "Storage and Analysis of Georeferenced Geotechnical and Pavements Data." Geotechnical Engineering in the Information Technology Age. Proceedings of GeoCongress 2006, February 26-March 1, 2006. CD-ROM.

Ebihara, T., C. B. Young, V. Tiwari, and L. M. Agee (2005). "Field Evaluation of Vegetated Highway Embankments for the Retention of PAH, Metals, and Particulates in Stormwater Runoff," *Proceedings of the Water Environment Federation 78th Annual Technical Exhibition and Conference*. Washington, D.C., 2005.

Young, C. B., B. M. McEnroe, and R. J. Quinn (1998). "GIS-Based Processing of NEXRAD Rainfall Estimates," *Water Resources and the Urban Environment*, E.D. Loucks, Ed., ASCE, Reston, Virginia, p. 165-170.

Published Reports:

Parr, A. D., C. B. Young, and P. Gonzalez (2012). "Unsteady Flow Analysis of Relief Bridges" Kansas Department of Transportation KTRAN Report No. KU-04-1.

McEnroe, B. M., and C. B. Young (2011). "Calibration of Hydrologic Design Inputs for a Small Urban Watershed in Johnson County, Kansas" Johnson County Stormwater Management Program.

McEnroe, B. M., Young, C. B., and Shelley, J. E. (2010) "Stream Realignment Design Using a Reference Reach," Kansas Department of Transportation KTRAN Report No. KU-09-4.

Schrock, Steven D., Young, C. B., Chellamani, Deepak (2009). *Review and Analysis of the Kansas Department of Transportation Maintenance Quality Assurance Program*. Report No. KS-09-4, Kansas Department of Transportation.

Ebihara, T., C. B. Young, V. Tiwari, and L. M. Agee (2009). *Treatment of Contaminated Roadway Runoff using Vegetated Filter Strips*. K-TRAN: KU-03-5, Kansas Department of Transportation.

McEnroe, B. M., C. B. Young, and J. E. Shelley (2009). "Guidelines for Stream Realignment Design," Report No. K-TRAN: KU-08-2, Kansas Department of Transportation, 70 pp.

Parr, A.D., J. Martin, and C.B. Young (2008). "Hydraulic Forces on Submerged Bridge Decks," Report No. K-TRAN: KU-08-7, Kansas Department of Transportation, 39 pp.

McEnroe, B.M., C.B. Young, and A.C. Rome (2007). "Flood Frequency Relationships for Small Watersheds in Kansas," Report No. K-TRAN: KU-06-4, Kansas Department of Transportation, 53 pp.

Young, C. B. (2006). "Mapping the Design Rainfall Event for Stormwater Quality Control," K-TRAN Report No. KU-03-1, Kansas Department of Transportation, 17 pp.

Young, C.B., and B.M. McEnroe (2002). "Precipitation Frequency Estimates for the Kansas City Metropolitan Area," published by the Kansas City Chapter of the American Public Works Association, 60 pp.

Young, C.B., B.M. McEnroe, and R.J. Quinn (1998). "Utilization of Precipitation Estimates Derived from Composite Radar", Report No. K-TRAN: KU-96-7, Kansas Department of Transportation, 188 pp.

McEnroe, B.M., C.B. Young, and G. Athey (1995). "Hydraulic Characteristics of KDOT Flume Inlets", Report No. K-TRAN: KU-95-1, Kansas Department of Transportation, 59 pp.

Presentations:

"Calibration of Runoff Curve Numbers for a Small Urban Watershed," 2012 EWRI Congress, Albuquerque, New Mexico, 2012.

"Calibration of Storm Drainage Design Inputs for a Small Urban Watershed," 2012 EWRI Congress, Albuquerque, New Mexico, 2012.

"Hydraulic Forces on Submerged Bridge Decks," 89th Annual Meeting of the Transportation Research Board of the National Academies, Washington, D.C., 2010.

"Comparing NEXRAD Error to use of a Nearby Gauge," 89th Annual Meeting of the Transportation Research Board of the National Academies, Washington, D.C., 2010.

- “Relating Vegetation Composition in a Bioretention Cell to Small-Scale Hydrologic and Topographic Variability,” ASCE World Environmental & Water Resources Congress, Providence, RI, 2010.
- “Helicopter-based Videography for Channel Evolution Stage Determination,” ASCE World Environmental & Water Resources Congress, Providence, RI, 2010.
- “Helicopter-Based Assessment of Stream Condition,” Water and the Future of Kansas, Topeka, KS, 2010.
- “Hydraulic Forces on Submerged Bridge Decks,” 92nd Annual Kansas Transportation Conference, Manhattan, KS, 2010.
- “Developing an Analysis Procedure for Severe Storms,” Johnson County Stormwater Management Program, Olathe, KS, 2010.
- “Regional Regression Analysis and the Rational Method,” EWRI World Environmental & Water Resources Congress, Kansas City, June 2009.
- Young, C. B., B. M. McEnroe, and A. C. Rome (2009). “Empirical Support for the Rational Method.” TRB 88th Annual Meeting, Washington, D. C., January 2009.
- “Which is Better: NEXRAD or Gage?” 2006 Fall Meeting of the American Geophysical Union, San Francisco, December 11-15, 2006.
- “Evaluation of NEXRAD Operational Estimates of Intense Rainfall using a Dense Network of ALERT Raingages,” 2006 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-26, 2006.
- “Storage and Analysis of Georeferenced Geotechnical and Pavements Data,” Presented at the Geocongress 2006, Atlanta, Georgia, February 26 -March 1, 2006. Co-author with R. L. Parsons and E. R. Kneebone.
- “Structuring a Comprehensive Georeferenced Subgrade Database,” Presented at GeoShanghai International Conference, Shanghai, China, June 2-4, 2006. Co-author with R. L. Parsons and E. R. Kneebone.
- “Evaluation of NEXRAD Precipitation Estimates for the Missouri River Basin using Daily Raingage Data (1998-2003),” *2005 Fall Meeting of the American Geophysical Union*, San Francisco, December 4-9.
- “Assessing Spatial-Temporal Variability of Vegetation-Precipitation Interactions with Combined NEXRAD and MODIS Data,” *2005 Spring Meeting of the American Geophysical Union*, New Orleans, May 23-27, 2005. Co-author with N. A. Brunsell.

- “Concentrated Flow through a Riparian Buffer: A Case Study,” 2005 *Spring Meeting of the American Geophysical Union*, New Orleans, May 23-27, 2005.
- “Monitoring Playa Hydrology using LANDSAT Imagery,” 2004 *Fall Meeting of the American Geophysical Union*, San Francisco, December 13-17, 2004.
- “Doppler Radar and Hydrology,” KU GIS Day, November 17, 2004. Invited.
- “Water Quality Modeling: Basic Concepts,” presented as part of the Department of Civil, Environmental, and Architectural Engineering’s Professional Development Series, Kansas City, Missouri, February 23, 2004. Invited.
- “October 4th, 1998 – The Kansas City Flood,” presented to the ASCE Hydraulics Group, Topeka, Kansas, September 26, 2002. Invited.
- “Comparing NEXRAD Operational Precipitation Estimates and Raingage Observations of Intense Precipitation in the Missouri River Basin,” 2002 *Spring Meeting of the American Geophysical Union*, Washington, D.C., May 28-31, 2002.
- “October 4th, 1998 – The Kansas City Flood,” presented as part of the Department of Civil, Environmental, and Architectural Engineering’s Professional Development Series, Kansas City, Missouri, April 15, 2002. Invited.
- “Using NEXRAD Precipitation Estimates for Hydrologic Analysis,” presented to a national meeting of the AASHTO Task Force on Hydrology and Hydraulics, Topeka, Kansas, May 3, 2001. Invited.
- “GIS: Basic Tools for Hydrologic Analysis,” presented as part of the Department of Civil, Environmental, and Architectural Engineering’s Professional Development Series, Kansas City, Missouri, February 5, 2001. Invited.
- “Revised Precipitation Frequency Estimates for the Kansas City Metropolitan Area,” presented to the Kansas City Chapter of the American Public Works Association, Kansas City, Kansas, December 14, 2000. Invited.
- “Evaluating NEXRAD Estimates for use with Nonpoint Source Models,” 2000 *Spring Meeting of the American Geophysical Union*, Washington, D.C., May 30 – June 3, 2000.
- “Uncertainty in Watershed Water-Quality Modeling due to Precipitation Measurement Error,” 1999 *Spring Meeting of the American Geophysical Union*, Boston, MA, May 31 – June 4, 1999.
- “An Evaluation of NEXRAD Precipitation Estimates in Complex Terrain,” 1998 *Fall Meeting of the American Geophysical Union*, San Francisco, CA, December 6-10, 1998.

“GIS-Based Processing of NEXRAD Rainfall Estimates,” American Society of Civil Engineers, 25th Conference on Water Resources Planning and Management, Chicago, IL, June, 1998.

“Water Resources I: PE Review,” presented as part of the Department of Civil, Environmental, and Architectural Engineering’s PE Review Course. Presented on seven occasions since October 2002.

Grants (principal investigator unless noted otherwise):

“Estimating the Discharge for Ordinary High Water Levels in Kansas,” Kansas Department of Transportation, 2013-2014, \$60,000.

“Workshop on Natural Stream Design,” Kansas Department of Transportation, 2010-2011, \$10,000.

“Calibration of Hydrologic Design Inputs for a Small Urban Watershed,” Johnson County Stormwater Management Program, 2010-2012, \$65,000.

“Establishing Baseline Topography for the Long-Term Evaluation of Stream Stabilization Efforts on the Neosho River,” Kansas Water Office, 2010-2012, \$18,746.

“Assessing LIDAR Elevation Data for use in Hydraulic Modeling and other Applications,” Kansas Department of Transportation, 2009 – 2012, \$13,500.

“Sediment Baseline Research Methodologies,” Kansas Water Resources Institute (USGS and KWO), March 2009 – October 2012, \$157,224.

“Reference-Reach Methods for Stream Realignment Design,” Kansas Department of Transportation, September 2008 – August 2009, \$50,000.

“Review and Analysis of the KDOT MQA Program,” January 2008 – May 2009, Kansas Department of Transportation, Co-investigator with Steven D. Schrock, \$49,318.

“Development of Guidelines for Stream Realignment Design,” Kansas Department of Transportation, Co-investigator with Bruce M. McEnroe, September 2007 – October 2008, \$50,000.

“Assessment of the Short and Long Term Effectiveness of Bioretention Cells Treating Paved Surface Runoff in Lenexa, Kansas,” Johnson County Stormwater Management Program, City of Lenexa, and Transportation Research Institute, Co-investigator with Ted Peltier, January 2008 – December 2009, \$257,000.

“Minimizing Contaminant Impact from Road and Parking Lot Runoff,” Johnson County Stormwater Management Program, Co-investigator with Ted Peltier, August 2006—August 2007, \$51,487.

“Development and Implementation of Procedures for Maintaining Johnson County Flood Studies,” Johnson County Stormwater Management Program, Co-investigator with A. David Parr, July 2005 – December 2005, \$45,384.

“A Calibrated Rational Method for Larger Watersheds,” Kansas Department of Transportation, August 2005 – October 2006, \$40,000.

“Developing an Analysis Procedure for Severe Storms,” Johnson County Stormwater Management Program, June 2005 – May 2006, \$22,000.

“Development of a System for the Retrieval and Analysis of Historical Subgrade Information,” Kansas Department of Transportation, Co-investigator with Robert L. Parsons, August 2003 – January 2005, \$46,000.

“Treatment of Contaminated Roadway Runoff using Vegetated Buffer Zones,” Kansas Department of Transportation, September 2002 – November 2004, \$52,000.

“Mapping the Design Rainfall Event for Stormwater Quality Control,” Kansas Department of Transportation, August 2002 – August 2003, \$10,000.

“Developing Automated Assessment Tools for Playa Lakes,” KU New Faculty GRF, February 2002 – December 2003, \$9,600.

“Evaluation of Riparian Zones for Controlling Non-Point Source Pollution in NE Kansas,” EPA EPSCoR subcontract with K-State, October 2001 – September 2004, \$72,000.

“Evaluating NEXRAD Radar-Based Estimates of Intense Precipitation,” Kansas Department of Transportation, June 2001 – October 2002, \$40,000.

“Revised Precipitation Frequency Estimates for the Kansas City Metropolitan Area,” Kansas City Chapter of the American Public Works Association, October 2000 – January 2002, \$50,000.

Service

Departmental:

Chair, Undergraduate Scholarship Committee

Chair, Computer/IT Committee

School:

Secretary, Engineering Senate Executive Committee

Member, SOE Scholarship Committee

Engineering summer camp for high school students

Self Fellowship Interviews

Engineering Scholars Day

Coordinator, Building on Excellence IT Committee

University:

Faculty Fellow, University Honors Program, includes:

Member – University Honors Council (UHC)

Chair – UHC Advising Workgroup

Member – UHC Curriculum Subcommittee

Advising of Honors Students

Meeting with Prospective Honors Students

Application Review

Teaching Honors Tutorial Fall 2010

University Scholars Application Review

Lab tours for K.U. Scholars Days

Goldwater Scholarship Committee

Common Book Program Steering Committee

State, Regional, National:

Member, NEXRAD Radar Rainfall Estimation Committee, ASCE

Reviewed Papers for Various Journals

GIS Short Courses through LTAP

Courses Taught at University of Kansas:

CE 192, Civil Engineering Graphics

CE 390, Civil Engineering Graphics

CE 455, Hydrology

CE 625, Applied Probability and Statistics

CE 751, Watershed Hydrology

CE 759, Water Quality Modeling

CE 895, Engineering Applications of GIS

HNRS 190, Honors Tutorial

HNRS 492, University Honors Program Commons Course

Short Courses Taught:

“Introduction to GIS”, 2-day short course taught multiple times since 2006.

“Intermediate GIS”, 1-day short course taught multiple times since 2007.

“Advanced GIS”, 1-day short course taught once in 2009.