

R. BYRON PIPES **Distinguished Professor** » bpipes@purdue.edu » 765.494.5767

Dr. R. Byron Pipes was elected to the National Academy of Engineering in 1987 in recognition of his development of an exemplary model for relationships between corporate, academic and government sectors to foster research and education in the field of composite materials. As co-founder and director of the Center for Composite Materials at the University of Delaware, he developed an industrial consortium of over forty corporate sponsors from the USA, Japan, Germany, France, Italy, United Kingdom, Belgium, Sweden and Finland. Today, almost 40 years after its founding, the University of Delaware Center is the largest and most successful of its kind in the United States. Research expenditures have exceeded \$100 million. In 2013, Dr. Pipes developed the Composites Design and Manufacturing HUB (**cdmHUB**) to meet the simulation needs of the growing composites industry. To date, the **cdmHUB** is supported by five corporate sponsors (Boeing, Rolls Royce, Cytec, Dassault Systemes and Henkel) as well as DARPA. His most recent research programs focus on the development of composites manufacturing with emphasis on additive manufacturing. He currently leads the Indiana Center of Excellence of the DOE Institute for Advanced Composites Manufacturing Innovation (IACMI) as Director of the Design Modeling and Simulation Technology Area. He is the Executive Director of the Composites Manufacturing & Simulation Center (CMSC) housed in the Indiana Manufacturing Institute in the Purdue Research Park. He has active programs in the study of the advanced manufacturing science for composite materials.



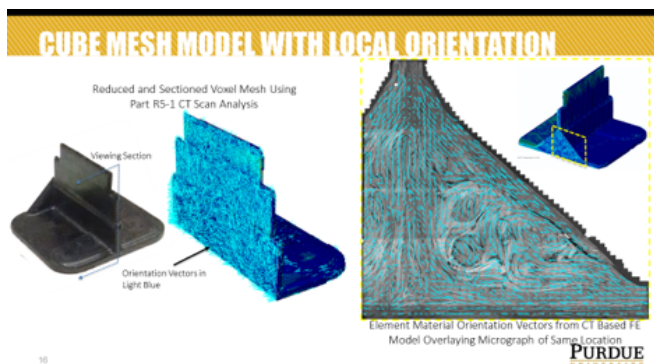
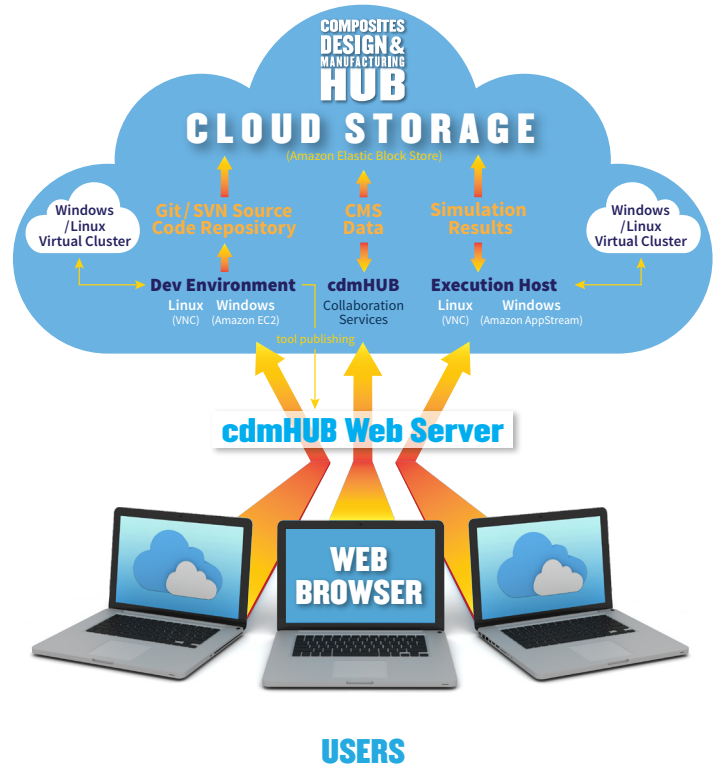
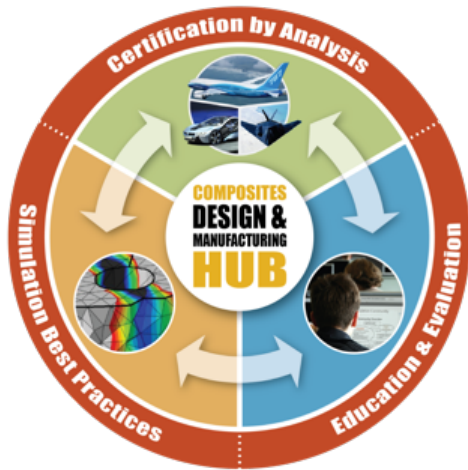
Appointments

- » Executive Director of the Composites Manufacturing Simulation Center of Purdue University, 2015–present.
- » Director of the Design and Simulation technology Area of the Institute for Advanced Composites Manufacturing, 2015–present.
- » Director of the Composites Design and Manufacturing HUB, 2012–present.
- » John Bray Distinguished Professor of Engineering in the Schools of Aeronautics and Astronautics, Chemical Engineering and Materials Engineering at Purdue University, 2004–present.
- » Goodyear Professor of Polymer Engineering, University of Akron, 2001–04.
- » Distinguished Visiting Professor, College of William and Mary, 1999–2001.
- » President of Rensselaer Polytechnic Institute, 1993–95.
- » Provost of the University of Delaware, 1991–1993.
- » Dean of the College of Engineering, University of Delaware, 1985–91.
- » Robert L. Spencer Professor of Engineering, University of Delaware, 1986–93.
- » Director of the Center for Composite Materials, University of Delaware, 1977–85.

Honors & Awards

- » National Academy of Engineering (1987)
- » Royal Society of Engineering Sciences of Sweden (1995)
- » Gustus L. Larson Award of Pi Tau Sigma (1986)
- » Chaire Francqui, Distinguished Faculty Scholar Award in Belgium (1985)
- » Fellow rank in ASC, ASME and SAMPE

Figures



Publications

Xie, Y., Kravchenko, O.G., Pipes, R.B. and Koslowski, M., "Phase field modeling of damage in glassy polymers," *Journal of the Mechanics and Physics of Solids*, 93(2016), pp. 182–197.

Kravchenko, O., Kravchenko, S.G., Pipes, R.B., "Chemical and thermal shrinkage in thermosetting prepreg," *Composites: Part A*, 80 (2016) 72–81.

Pipes, R.B., "Accelerating the Certification Process for Aerospace Composites," *High Performance Composites*, March (2014).

Kravchenko, O. G., Li, C., Strachan, A., Kravchenko, S.G. and Pipes, R.B., "Prediction of the chemical and thermal shrinkage in a thermoset polymer," *Composites Part A: Applied Science and Manufacturing*, Volume 66, (2014), Pages 35–43.

Kravchenko, S., Kravchenko, O., Wortmann, M., Pietrek, M., Horst, P., Pipes, R.B, *Composite Toughness Enhancement with Interlaminar Reinforcement*, *Composites: Part A*, (2013).

Misiego, C.R. and Pipes, R.B., "Dispersion and its Relation to Carbon Nanotube Concentration in Polyimide Nanocomposites," *Composites Science and Technology*, 85, (2013), pp. 43–49.

Goodsell, J., Pagano, N.J., Kravchenko, O, and Pipes, R.B., "Interlaminar Stresses in Composite Laminates Subjected to Anticlastic Bending Deformation," *Journal of Applied Mechanics*, ASME J Appl Mech, (2013); 80(4): 041020-1-041020-7.

Cadena, M., Misiego, R., Smith, K.C., Avia, A., Pipes, R.B., Reifemberger, R. and Raman, A., "Subsurface Imaging of Carbon Nanotube-polymer Composites Using Dynamic AFM Methods," *Nanotechnology*, 24 (2013), 135706.

Condit, P., Pipes, R.B., "The Global University," *Issues in Science and Technology*, National Academy of Sciences, Volume XIV, Number 1, (1997), pp. 27–28.

Pipes, R.B., Wilson, J.M., "A Multimedia Model for Undergraduate Education," *Technology in Society*, Vol. 18, No. 3, (1996), pp. 387–401.

Pipes, R.B., Coffin, D.W., Shuler, S.F., Simacek, P., "Non-Newtonian Constitutive Relationships for Hyper Concentrated Fiber Suspensions," *Journal of Composite Materials*, Vol. 28, No. 4, (1994), pp. 343–350.

Pipes, R.B., Lewis, C.S., "Research Centers in Sciences and Engineering," *Innovative Models for University Research*, edited by C.R. Haden, North-Holland, (1992).