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PERSONAL

Born in Namur (Belgium) on August 19, 1964
Married, 2 children
US Citizen
Bilingual French-English

EDUCATION

PhD in Aeronautics (with minor in material science), California Institute of Technology, Pasadena, CA, 1993
Thesis topic: Nonlinear kinematic effects in homogeneous and interfacial fracture
PhD thesis advisor: Professor W. G. Knauss

M.Sc. in Aeronautics, California Institute of Technology, Pasadena, CA, 1989

B.Sc in Mechanical Engineering (with highest distinction), Université Catholique de Louvain (Louvain-la-Neuve, Belgium), 1988
Thesis topic: Finite element modeling of diaphragm forming of composites
Undergraduate thesis advisor: Professor M. Crochet

PROFESSIONAL EXPERIENCE

Full professor and Associate Head, Aerospace Engineering Department, University of Illinois at Urbana-Champaign, 2006-present
Joint appointments in Civil and Environmental Engineering, Mechanical Science and Engineering, Beckman Institute of Advanced Science and Technology, Computational Science and Engineering, National Center for Supercomputing Applications

Associate professor, Aerospace Engineering Department, University of Illinois at Urbana-Champaign, 2000-2006

Assistant professor, Aerospace Engineering Department, University of Illinois at Urbana-Champaign, 1995-2000

Post-doctoral research associate, Division of Applied Sciences, Harvard University, 1993-1994
Postdoctoral advisor: Professor J. R. Rice

AWARDS and HONORS (since PhD)

AIAA Teacher of the Year Award, University of Illinois, 1998, 2009.
Engineering Council Award for Excellence in Advising, University of Illinois, 2009, 2010.
Best Paper of the Year Award, Materials Division, ASME, 2007.
Stanley H. Pierce Award, College of Engineering, University of Illinois, 2007.
Bliss Faculty Scholar, College of Engineering, University of Illinois, 2005-2008.
Accenture Excellence in Advising Award, University of Illinois College of Engineering, 2005.
University of Illinois College of Engineering Xerox Research Award, 1999, 2005.

List of Teachers Rated as Excellent by Their Students, University of Illinois, 1995, 1996, 1997, 1999, 2000, 2001, 2002, 2005, 2007.
University of Illinois College of Engineering Everitt Teaching Award, 2000.
American Society for Composites Best Paper Award, 16th Technical Conference, Polymer Matrix Composite Division, 2001.
NSF Career Award, 1998.
N.A.T.O. Postdoctoral Fellowship, 1994.

U.S. PATENTS

"Multifunctional autonomically healing composite material". White, S. R., Sottos, N. R., Geubelle, P. H., Moore, J. S., Sriram, S. R., Kessler, M. R., Brown E. N. U.S. Patent # 6,518,330.
"Method and apparatus for control of shock/boundary-layer interactions". Loth, E., Dutton, C., Geubelle, P. H., White, S., Tortorelli, D. and Alleyne, A. U.S. Patent # 6,651,935.

PUBLICATIONS

Book Chapters

1) Kardomateas, G. A. and Geubelle, P. H. "Fatigue and Fracture Mechanics in Aerospace Structures". (2010) To appear in *Encyclopedia of Aerospace Engineering*.

Journal Articles (h-index = 19 as of April 23, 2010 – Source Google Scholar)

Articles Published or Accepted for Publication

1) Geubelle, P. H. and Knauss, W. G. (1994) "Crack propagation at and near bimaterial interfaces: linear analysis". *ASME J. Appl. Mech.*, **61**, 560-566.
2) Geubelle, P. H. and Knauss, W. G. (1995) "Crack propagation at and near bimaterial interfaces under general loading: nonlinear analysis". *ASME J. Appl. Mech.,* **62:3**, 601-606.
3) Geubelle, P. H. and Knauss, W. G. (1994) "Finite strains at the tip of a crack in a sheet of hyperelastic material: 1. Homogeneous case". *J. Elasticity*, **35**, 31-98.
4) Geubelle, P. H. and Knauss, W. G. (1994) "Finite strains at the tip of a crack in a sheet of hyperelastic material: 2. Special bimaterial cases". *J. Elasticity*, **35**, 99-137.
5) Geubelle, P. H. and Knauss, W. G. (1994) "Finite strains at the tip of a crack in a sheet of hyperelastic material: 3. General bimaterial case". *J. Elasticity*, **35**, 139-174.
6) Geubelle, P. H. and Knauss, W. G. (1995) "A note related to energy-release rate computations for kinking interface cracks". *ASME J. Appl. Mech.*, **62:1**, 266-267.
7) Geubelle, P. H. (1995) "Finite deformation effects in homogeneous and interfacial fracture". *Int. J. Solids Structures*, **36:6/7**, 1003-1016.
8) Geubelle, P. H. and Rice, J. R. (1995) "A spectral method for 3D elastodynamic fracture problems". *J. Mech. Phys. Solids,* **43:11**, 1791-1824.
9) Morrissey, J. W. and Geubelle, P. H. (1997) "A numerical scheme for mode III dynamic fracture problems". *Int. J. Numer. Meth. Eng.*, **40**, 1181-1196.
10) Geubelle, P. H., Danyluk, M. J. and Hilton, H. H. (1997) "Dynamic mode III fracture in viscoelastic media". *Int. J. Solids Structures*, **35**, 761-782.
11) Geubelle, P. H. and Breitenfeld, M. S. (1997) "Numerical analysis of dynamic debonding under anti-plane shear loading". *Int. J. Fracture*, **85**, 265-282.
12) Danyluk, M. J., Geubelle, P. H. and Hilton, H. H. (1998) "2D and 3D dynamic fracture in viscoelastic media". *Int. J. Solids Structures*, **35:28-29**, 3831-3853.
13) Geubelle, P. H. (1997) "A numerical method for elastic and viscoelastic dynamic fracture problems in homogeneous and bimaterial systems". *Computational Mechanics*, **20:1-2**, 20-25.

14) Breitenfeld, M. S. and Geubelle, P. H. (1998) "Numerical analysis of dynamic debonding under 2D in-plane and 3D loading". *Int. J. Fracture*, **93**, 13-38.
15) Geubelle, P. H. and Baylor, J. (1998) "Impact-induced delamination of composites: a 2D simulation". *Composites B*, **29B**, 589-602.
16) Breitenfeld, M. S. and Geubelle, P. H. (2000) "Parallel implementation of a spectral scheme for the simulation of 3D dynamic fracture events". *Int. J. High Performance Computing Appl.*, **14:1**, 26-38.
17) Lin, G., Geubelle, P. H. and Sottos, N. R. (2001) "Simulation of fiber debonding with friction in a model composite pushout test". *Int. J. Solids Structures*, **38:46-47**, 8547-8562.
18) Geubelle, P. H. and Kubair, D. (2001) "Intersonic crack propagation in homogeneous media under shear-dominated loading: Numerical analysis". *J. Mech. Physics Solids*, **49:3**, 571-587.
19) Zhu Q., Li M., Geubelle, P.H. and Tucker, C. L. (2001) "Dimensional accuracy of thermoset composites: simulation of process-induced residual stresses". *J. Composite Materials*, **35:24**, 2171-2205.
20) Li, M., Zhu, Q., Geubelle, P. H. and Tucker, C. L. (2001) "Optimal curing for thermoset matrix composites: thermomechanical considerations". *Polymer Composites*, **22**,118-131.
21) Zhu Q. and Geubelle, P.H. (2002) "Dimensional accuracy of thermoset composites: shape optimization". *J. Composite Materials*, **36:6**, 647-672.
22) Wood, B., Loth, E. and Geubelle, P. H. (2002) "A numerical methodology for an aeroelastic supersonic viscous flow". *J. Fluid and Structures*, **16:8**, 1127-1144.
23) White, S. R., Sottos, N. R., Geubelle, P. H., Moore, J. S., Kessler, M. R., Sriram, S. R., Brown, E. N. and Viswanathan, S. (2001) "Autonomic healing of polymer composites". *Nature*, **409**, 794-797.
24) Hwang, C. and Geubelle, P. (2000) "A spectral scheme to simulate dynamic fracture problems in composites". *Computer Modeling in Eng. & Science*, **1:4**, 45-56.
25) Li Z., Bi X., Lambros J. and Geubelle P. H. (2002) "Dynamic fiber debonding and frictional push-out in model composite systems: experimental observations". *Experimental Mechanics,* **42:4**, 417-425.
26) Kubair, D., Geubelle, P. H. and Huang, Y. (2002) "Intersonic crack propagation in homogeneous media under shear-dominated loading: Theoretical analysis". *J. Mech. Phys. Solids*, **50:8**, 1547-1564.
27) Kubair, D., Geubelle, P. H. and Huang, Y. (2003) "Analysis of a rate-dependent cohesive model for dynamic crack propagation". *Eng. Fracture Mech.*, **50:5**, 685-704.
28) Bi, X., Li, Z., Geubelle, P. H. and Lambros, J. (2002) Dynamic fiber debonding and frictional push-out in model composite systems: numerical simulations". *Mechanics of Materials*, **34**, 433-446.
29) Zhu, Q., Shrotriya, P., Sottos, N. R. and Geubelle, P. H. (2003) "Three-dimensional simulation of viscoelastic response of a woven composite substrate for multilayer PCB". *Composite Science & Technology*, **63:13**, 1971-1983.
30) Zhang, P., Huang, Y., Geubelle, P. H., Klein, P. A. and Hwang, K. C. (2002) "The elastic modulus of single-wall carbon nanotubes: a continuum analysis incorporating interatomic potentials". *Int. J. Solids Structures*, **39**, 3893-3906.
31) Zhang P., Huang Y., Geubelle P. H., and Hwang K. C. (2002) "On the continuum modeling of carbon nanotubes". *Acta Mechanica Sinica*, **18:5**, 528-536.
32) Kubair, D. and Geubelle, P. H. (2003) "Comparative analysis of extrinsic and intrinsic cohesive models of dynamic fracture". *Int. J. Solids Structures*, **40:15**, 3853-3868.
33) Maiti, S. and Geubelle, P. H. (2002) "Mesoscale modeling of dynamic fracture of ceramic materials". *Computer Modeling in Eng. & Science*, **5:2**, 91-101.

34) Jiang, H., Zhang, P., Liu, B., Huang, Y., Geubelle, P. H., Gao, H. and Hwang, K. C. (2003) "The effect of nanotube radius on the constitutive model for carbon nanotubes". *Computational Material Science*, **28:3-4**, 429-442.
35) Kubair, D., Geubelle, P. H. and Lambros, J. (2005) "Asymptotic analysis of a mode III stationary crack in a ductile functionally graded material". *J. Applied Mechanics*, **72:4**, 461-467.
36) Maiti, S., Rangaswamy, K. and Geubelle, P. H. (2005) "Mesoscale analysis of dynamic fragmentation of ceramics under tension". *Acta Materialia*, **53:3**, 823-834.
37) Zhang, P., Jiang, H., Huang Y., Geubelle, P. H. and Hwang, K. C. (2004) "An atomistic-based continuum theory for carbon nanotubes: analysis of fracture nucleation". *J. Mech. Physics Solids*, **52:5**, 977-998.
38) Maiti, S. and Geubelle, P. H. (2005) "A cohesive model for fatigue failure of polymers". *Eng. Fracture Mechanics*, **72:5**, 691-708.
39) Kandula, S., Abanto-Bueno, J., Geubelle, P. H. and Lambros, J. (2005) "Cohesive modeling of dynamic fracture of functionally graded materials". *Int. J. Fracture*, **132**, 275-296.
40) Hendrickx, J., Geubelle, P. H. and Sottos, N. R. (2005) "A spectral scheme to simulate the mode III dynamic delamination of thin films". *Eng. Fracture Mech.,* **72:12**, 1866-1891.
41) Maiti, S. and Geubelle, P. H. (2006) "Cohesive modeling of fatigue crack retardation in polymers: Crack closure effect". *Eng. Fracture Mech.*, **73:1**, 22-41.
42) Tan, H., Liu, C., Huang, Y., and Geubelle, P.H. (2006) "Effect of nonlinear interface debonding on the constitutive model of composite materials". *International Journal for Multiscale Computational Engineering* **4**, 147-167.
43) Tan, H., Huang, Y., Liu, C. and Geubelle, P. H. (2005) "The Mori-Tanaka method for composite materials with nonlinear interface debonding". *Int. J. Plasticity*, **21:10**, 1890-1918.
44) Tan, H., Liu, C., Huang, Y. and Geubelle, P. H. (2005) "The cohesive law for the particle/matrix interfaces in high explosives". *J. Mech. Physics Solids*, **53:8**, 1892-1917.
45) Jaiman, R. K., Jiao, X., Geubelle, P. H. and Loth, E. (2005) "Assessment of conservative load transfer for fluid-solid interface with non-matching meshes". *Int. J. Numer. Meth. Eng.*, **64**, 2014-2038.
46) Matous, K. and Geubelle, P. H (2006) "Multiscale analysis of particle debonding in reinforced elastomers subjected to finite deformation". *Int. J. Numer. Meth. Eng.*, **65**, 190-223.
47) Kandula, S., Abanto-Bueno, J., Geubelle, P. H. and Lambros, J. (2006) "Cohesive modeling of quasi-static fracture in functionally graded materials". *J. Applied Mechanics*, **73**, 783-791.
48) Maiti, S., Shankar, C., Geubelle, P. H. and Kieffer, J. (2006) "Continuum- and molecular-level modeling of fatigue crack propagation in self-healing composite". *J. Eng. Mater. Technology*, **128:4**, 595-602.
49) Jaiman, R. K., Jiao, X., Geubelle, P. H. and Loth, E. (2006) "Conservative load transfer along curved fluid-solid interface with non-matching meshes". *J. Computational Physics*, **218:1**, 372-397.
50) Matous, K., Inglis, H. M., Gu, X., Rypl, D., Jackson, T. L. and Geubelle, P. H. (2007) "Multiscale modeling of solid propellants: From particle packing to grain failure." *Composites Science & Technology,* **67:7-8**, 1694-1708. DOI: 10.1016/j.compscitech.2006.06.017.
51) Dantuluri, V., Maiti, S., Geubelle, P. H., Patel, R. and Kilic, H. (2007) "Cohesive modeling of delamination in Z-pin reinforced composite laminates." *Composites Science & Technology*, **67:3-4**, 616-631.
52) Matous, K. and Geubelle, P. H (2006) "Finite element formulation for modeling particle debonding in reinforced elastomers subjected to finite deformations". *Computer Methods in Applied Mechanics and Engineering*, **196:1-3**, 620-633.

53) Inglis, H., Matous, K., Tan, H., Geubelle, P. H. and Huang, Y. (2007) "Cohesive modeling of dewetting in particulate composites: micromechanics vs. multiscale finite element analysis". *Mech. Materials*, **39:6**, 580-595. DOI: 10.1016/j.mechmat.2006.08.008.
54) Tan, H., Huang, Y., Liu, C., Ravichandran, G., Inglis, H. M. and Geubelle, P. H. (2007) "The uniaxial tension of particulate composite materials with nonlinear interface debonding." *Int. J. Solids Struct.*, **44:6**, 1809-1822. DOI: 10.1016/j.ijsolstr.2006.09.004.
55) Roe, B., Haselbacher, A. and Geubelle, P. H. (2007) "Stability of explicit coupled thermal simulations on a moving grid". *Int. J. Numer. Methods in Fluids*, **54**, 1097-1117. DOI: 10.1002/fld.1416.
56) Nittur, P., Maiti, S. and Geubelle, P. H. (2008) "Grain-level analysis of dynamic fragmentation of ceramics under multi-axial compression". *J. Mech. Phys. Solids*, **56:3**, 993-1017. DOI: 10.1016/j.jmps.2007.06.007.
57) Mangala, S., Wilmarth, T., Chakravorty, S., Choudhury, N., Kale, L. V. and Geubelle, P. H. (2008) "Parallel adaptive simulations of dynamic fracture events". *Engineering with Computers*, **24:4**, 341-358. DOI: 10.1007/s00366-007-0082-x.
58) Matous, K., Kulkarni, M. G. and Geubelle, P. H. (2008) "Multiscale cohesive failure modeling of heterogeneous adhesives". *J. Mech. Phys. Solids*, **56:4**, 1511-1533. DOI: 10.1016/j.jmps.2007.08.005
59) Kumar, N. C., Matous, K. and Geubelle, P. H. (2008) "Reconstruction of periodic unit cells of multimodal random particulate composites using genetic algorithms". *Computational Materials Science*, **42:2**, 352-367. DOI: 10.1016/j.commatsci.2007.07.043.
60) Roe, B., Jaiman, A., Haselbacher, A. and Geubelle, P. H. (2008) "Combined interface boundary condition method for coupled thermal simulations". *Int. J. Numer. Methods in Fluids*, **57:3**, 329-354. DOI: 10.1002/fld.1637.
61) Tran, P., Kandula, S., Geubelle, P. H. and Sottos, N. R. (2008) "Hybrid spectral/finite element analysis of dynamic delamination of patterned thin films." *Eng. Fracture Mech.*, **75:14**, 4217-4233. DOI: 10.1016/j.engfracmech.2008.03.006.
62) Kandula, S. S. V., Hartfield, C. D., Geubelle, P. H. and Sottos, N. R. (2008) "Adhesion strength measurement of polymer dielectric interfaces using laser spallation technique." *Thin Solid Films*, **516:21**, 7627-7635. DOI: 10.1016/j.tsf.2008.05.033.
63) Brassart, L., Inglis, H. M., Delannay, L., Doghri, I. and Geubelle, P. H. (2009) "An extended Mori-Tanaka homogenization scheme for finite strain modeling of debonding in particle-reinforced elastomers". *Computational Materials Science*, **45**, 611-616. DOI: doi:10.1016/j.commatsci.2008.06.021.
64) Inglis, H., Geubelle, P.H. and Matous, K. (2008) "Boundary condition effects on multiscale analysis of damage localization." *Phil. Magazine*, **88:16**, 2373-2397. DOI: 10.1080/14786430802345645.
65) Aragón, A. M., Wayer, J. K., Geubelle, P. H., Goldberg, D. E. and White, S. R. (2008) "Design of microvascular flow networks using multi-objective genetic algorithms". *Comp. Methods Applied Mech. Eng.*, **197**, 4399-4410. DOI: 10.1016/j.cma.2008.05.025.
66) Subhash, G., Maiti, S., Geubelle, P. H. and Ghosh, D. (2008) "Recent advances in dynamic indentation fracture, impact damage and fragmentation of ceramics". *J. Amer. Ceramic Society*, **91 (9)**, 2777-2791. DOI: 10.1111/j.1551-2916.2008.02624.x.
67) Srinivasan, K., Matous, K. and Geubelle, P. H. (2008) "Generalized finite element method for modeling nearly incompressible bimaterial hyperelastic solids". *Comp. Meth. Applied Mechanics Engg.*, **197**, 4882-4893. DOI: 10.1016/j.cma.2008.07.014.

68) Kulkarni, M., Geubelle, P. H. and Matous, K. (2008) "Multi-scale modeling of heterogeneous adhesives: Effect of particle decohesion". *Mech. Mater.* in press. DOI:10.1016/j.mechmat.2008.10.012.
69) Wei, Y. and Geubelle, P. H. (2008) "A comparative study of GLS finite elements for solving incompressible fluid flows". *IJNMF*, in press. DOI: 10.1002/fld.1416.
70) Kitey, R., Geubelle, P. H. and Sottos, N. R. (2009) "Mixed-mode interfacial adhesive strength of a thin film on an anisotropic substrate". *J. Mech. Phys. Solids*, **57:1**, 51-66. DOI: 10.1016/j.jmps.2008.10.002.
71) Dooley, I., Mangala, S., Kale, L. and Geubelle, P. H. (2008) "Parallel simulations of dynamic fracture using extrinsic cohesive elements." *J. Scientific Computing*, in press. DOI: 10.1007/s10915-008-9254-0.
72) Kandula, S. S. V., Tran, P., Geubelle, P. H. and Sottos, N. R. (2008) "Dynamic delamination of patterned thin films". *Appl. Physics Letters*, **93**, 261902-1-3. DOI: 10.1063/1.3056639.
73) Aragón, A. M., Duarte, C. A. and Geubelle, P. H. (2009) "Generalized finite element enrichment functions for discontinuous gradient fields". *IJNME*. DOI: 10.1002/nme.2772.
74) Wu, W., Hansen, C.L., Aragón, A.M., Geubelle, P.H., White, S.R. and Lewis, J.A. (2009) "Direct-write assembly of biomimetic microvascular networks for efficient fluid transport." To appear in *Soft Matter Communication*.
75) Tran, P., Kandula, S. S. V., Geubelle, P. H. and Sottos, N. R. "Dynamic delamination of patterned thin films: A numerical study." (2009) To appear in *Int. J. Fracture*. DOI: 10.1007/s10704-010-9460-2.
76) Olugebefola, S. C., Aragón, A. M., Hansen, C. J., Hamilton, A. R., Kozola, B. D., Geubelle, P. H., Lewis, J. A., Sottos, N. R., and White, S. R. (2009) "Polymer-microvascular network composites." To appear in *J. Composite Materials*.
77) Jaiman, R., Geubelle, P. H., Loth, E. and Xiao, X. (2009) "Combined interface boundary condition method for unsteady fluid-structure interaction". To appear in *Comp. Meth. Applied Mechanics Engg.*
78) Kulkarni, M. G., Matous, K. and Geubelle, P. H. (2010) "Coupled multi-scale cohesive modeling in heterogeneous adhesives." To appear in *International Journal for Numerical Methods in Engineering*.
79) White, S. R. and Geubelle, P. H. (2010) "Get ready for repair-and-go." *Nature Nanotechnology*. Vol. 5, April 2010, 247-248.

Articles Submitted

1) Zheng, G., Breitenfeld, M. S., Govind, H., Geubelle, P. H. and Kale, L. V. (2008) "Automatic dynamic load balancing for 3D explicit finite element analyses". Submitted to *Engineering with Computers*.
2) Kandula, S. S. V., Tran, P., Geubelle, P. H. and Sottos, N. R. (2009) "Dynamic adhesion test to measure thin film interface fracture energy." Submitted to *Experimental Mechanics*.
3) Kitey, R., Sottos, N.R. and Geubelle, P.H. (2009) "A hybrid experimental/ numerical approach to characterize interfacial adhesion in multilayer low-k thin film specimens." Submitted to *Thin Film Solids*.
4) Jaiman, R., Geubelle, P. H., Loth, E. and Jiao, X. (2010) "Transient fluid-structure interaction with non-matching spatial and temporal discretizations." Submitted to *AIAA Journal*.
5) Lepage, S., Stump, F., Kim, I., and Geubelle, P. H. (2010) "Perturbation stochastic finite element based homogenization of polycrystalline materials." Submitted to *Journal of Mechanics and Materials Science*.

6) Patel, J. J., Inglis, H. M., Geubelle, P. H., and Tan, H. (2010) "Deterministic and stochastic analysis of debonding in fibrous composites using micromechanics modeling." Submitted to *Composite Science and Technology*.

Conference Proceedings Articles and Technical Reports

1) Geubelle, P. H. and Knauss, W. G. (1993) "Crack propagation in homogeneous and bimaterial sheets under general in-plane loading : Nonlinear analysis", in "Ultrasonic Characterization and Mechanics of Interfaces", S. I. Rokhlin, S. K. Datta and Y. D. S. Rajapakse, eds; Proceeding of the 1993 ASME Winter Annual Meeting in New Orleans, LA; Nov.28-Dec.3, 1993.
2) Geubelle, P. H. (1994) "Implementation of a 3D elastodynamic boundary-integral code on the CM-5". Mech-240 Report, Division of Applied Sciences, Harvard University.
3) Geubelle, P. H., Danyluk, M. J. and Hilton, H. H. "Dynamic Mode 3 Fracture in Viscoelastic Media." Report AAE 96-03, UILU ENG 96-0503.
4) Geubelle, P. H. and Breitenfeld, M. S. "Numerical analysis of dynamic debonding under anti-plane shear loading." Report AAE 96-12, UILU ENG 96-0512.
5) Geubelle, P. H. "A numerical method for elastic and viscoelastic dynamic fracture problems in homogeneous and bimaterial systems." Report AAE 96-14, UILU ENG 96-0514.
6) Jung, D., Hegeman, A., Sottos, N. R., Geubelle, P. H. and White, S. R. (1997) "Self-healing composites using embedded micro-spheres," *Composite and Functionally Graded Materials*, Jacob, K., Katsube, N., and Jones, W., Eds., Vol. MD-80, in Proceedings of the ASME International Mechanical Engineering Conference and Exposition, pp. 265-275.
7) White, S. R., Geubelle, P. H. and Tucker, C. L. (1998) "Process optimization for dimensional accuracy for polymer composites." 1998 NSF Annual Report, Grant No. DMI-9610382, June 1998.
8) White, S. R., Geubelle, P. H. and Tucker, C. L. (1999) "Process optimization for dimensional accuracy for polymer composites." 1999 NSF Design and Manufacturing Grantee's Conference, Jan. 5-8, 1999, Long Beach, CA.
9) Wood, B., Loth, E., and Geubelle, P. H. (1999) "Mesoflaps for aeroelastic transpiration for SBLI control", 37th Aerospace Sciences Meeting, Reno NV, January 1999; AIAA 99-0614.
10) Wood, B., Loth, E., and Geubelle, P. H. (1999) "Shock/boundary-layer interaction control with aeroelastic transpiration". 3rd ASME/JSME Joint Fluids Engineering Conference, San Francisco CA, July 17-21, 1999; FEDSM99-6924.
11) Geubelle, P. H., Lin, G. and Sottos, N. R. (1999) "Simulation of a fiber pushout test in model polyester/epoxy composite". Proceedings of ICCM-12, Paris, July 5-9, 1999.
12) White, S. R., Geubelle, P. H. and Tucker, C. L. (1999) "Process optimization for dimensional accuracy for polymer composites." 1999 NSF Annual Report, Grant No. DMI-9610382, June 1999.
13) Geubelle, P. H., Breitenfeld, M. S., Kubair, D. and Hwang, C. (2000) "Simulation of fundamental dynamic fracture problems using a spectral scheme". In *Advances in Computational Engineering & Sciences*. Edited by S. N. Atluri and F. W. Brust. Tech. Science Press. Proceedings of ICES2K held in Annaheim, CA, in August 2000.
14) Zhu, Q. and Geubelle, P. H. (2000) "Effects of the manufacturing process on the dimensional accuracy of thermoset composites". Proceedings of ASME IMECE 2000 in Orlando, November 2000.
15) Hwang, C. and Geubelle, P. H. (2000) "Subsonic and intersonic crack propagation in unidirectional and cross-ply composites". Proceedings of ASME IMECE 2000 in Orlando, November 2000.

16) Wood, B., Loth, E., Geubelle, P. H. and McIlwain, S. (2000) "A numerical methodology for an aeroelastic SBLI Flow". 38th Aerospace Sciences Meeting, Reno, NV, 10-13 January 2000. Paper AIAA 2000-0552.
17) Gefroh, D. L., Hafenrichter, E. S., McIlwain, S. T., Loth, E., Dutton, C. J. and Geubelle, P. H. (2000) "Simulation and Experimental Analysis of a Novel SBLI Flow Control System". AIAA Fluid 2000 Conference, 19-22 June 2000, Denver, CO. Paper AIAA 2000-2237.
18) Geubelle, P. H., Hwang, C., Fiedler, R., Breitenfeld, M. S. and Haselbacher, A. (2001) "Simulation of dynamic fracture events in solid propellant rockets". 37th AIAA/ASME/SAE/ASEE JPC Conference and Exhibit, July 8-11, 2001. Paper AIAA 2001-3953.
19) Lambros, J., Bi X. and Geubelle, P. H., "The mechanics of dynamic fiber push-out: experimental and numerical study", IMECE 2001, New York, NY, November 2001.
20) Lambros, J., Bi, X. and Geubelle, P. H. "High-speed debonding and frictional sliding in composite systems: experimental observations and numerical simulations." Proceedings of ICF 10. Honolulu, December 2-7, 2001.
21) Geubelle, P. H. and Maiti, S. "Simulation of damage mechanisms in high-speed grinding of structural ceramics." Proceedings of ICF 10. Honolulu, December 2-7, 2001.
22) Hwang, C., Massa, L., Fiedler, R. and Geubelle, P. H. "Simulation of convective burning and dynamic fracture in solid propellants." 38th AIAA/ASME/SAE/ASEE JPC Conference and Exhibit, July 7-10, 2002. Paper AIAA 2002-4342.
23) Fiedler, R. A., Breitenfeld, M. S., Jiao, X., Haselbacher, A. Geubelle, P. H., Guoy, D. and Brandyberry, M. "Simulations of slumping propellant and flexing inhibitors in solid propellant rocket motors." 38th AIAA/ASME/SAE/ASEE JPC Conference and Exhibit, July 7-10, 2002. Paper AIAA 2002-4341.
24) Maiti, S., Rangaswamy, K. and Geubelle, P. H. "Fragmentation of ceramics in rapid expansion mode." In *Fracture Mechanics of Ceramics*, pp. 353-365. Proceedings of the 8th Conference of the Fracture Mechanics of Ceramics. Houston, TX. February 25-28, 2003. Edited by R. C. Bradt, D. Munz, M. Sakai and K. W. White.
25) Geubelle, P. H., Maiti, S. and Rangaswamy, K. "Mesoscale modeling of fragmentation of ceramics under dynamic compressive loading. Proceedings of ICF11, Turin, Italy, March 2005.
26) Geubelle, P. H., Hendrickx, J. and Sottos, N.R. « Spectral scheme for analysis of dynamic delamination of a thin film." . Proceedings of ICF11, Turin, Italy, March 2005.
27) Geubelle, P.H., Dantuluri, V., Koppaka, S.B. and Phinney, L. « Cohesive modeling of adhesion reduction of MEMS cantilevers through laser heating". Proceedings of ICF11, Turin, Italy, March 2005.
28) White, S.R., Maiti, S., Jones, A., Brown, E.N., Sottos, N.R. and Geubelle, P.H. « fatigue of self-healing polymers: multiscale analysis and experiments". Proceedings of ICF11, Turin, Italy, March 2005.
29) Matous, K., Inglis, H. M., Gu, X., Jackson, T., Rypl, D. and Geubelle, P. H. "Multiscale Damage Modeling of Solid Propellants: Theory and Computational Framework". 41st AIAA/ASME/SAE/ASEE JPC Conference and Exhibit, July 10-13, 2005. Tucson, AZ. Paper AIAA 2005-4347.
30) Tan, H., Huang, Y., Geubelle, P. H., Liu, C. and Breitenfeld, M. S. "An Energy Approach to a Micromechanics Model Accounting for Nonlinear Interface Debonding". 41st AIAA/ASME/SAE/ASEE JPC Conference and Exhibit, July 10-13, 2005. Tucson, AZ. Paper AIAA-2005-3995.
31) Jaiman, R., Geubelle, P. H., Loth, E. and Jiao, X. M. "Stable and accurate loosely-coupled scheme for unstead fluid/structure interaction". Paper AIAA-07-334. AIAA Conference, Reno, January 2007.

32) Aragón, A. M., Hansen, C. J., Wu, W., Geubelle, P. H., Lewis, J. and White, S. R. "Computational design and optimization of a biomimetic self healing/cooling material." In *Behavior and Mechanics of Multifunctional and Composite Materials 2007*, Edited by M. J. Dapino. Proceedings of SPIE, **6526.** San Diego, CA, March 2007.
33) Geubelle, P. H., Inglis, H. M., Kramer, J. D., Patel, J. J., Kumar, N. C. and Tan, H. "Multiscale modeling of dewetting damage in highly filled particulate composites". Proceedings of the 2006 Multiscale and Functionally Graded Materials Conference, October 15-18, 2006, Hawaii. DOI: 10.1063/1.2896776.
34) Geubelle, P. H., Maiti, S., Kulkarni, M. and Matous, K. "Multiscale cohesive modeling of fatigue response of a self-healing composite". First International Conference on Self-Healing Materials, Noordwijk, Netherlands, April 2007.
35) Kandula, S. S. V., Geubelle, P. H. and Sottos, N. R. "Dynamic adhesion test to measure thin film interface fracture toughness". Society of Experimental Mechanics XI, Orlando, FL, June 2-5, 2008.
36) Aragón, A., Geubelle, P.H. and White, S.R. "Bio-mimetic microvascular material for autonomic healing, cooling and sensing applications". Proceedings of the US-Korea Workshop on Bio-Inspired Sensor Technology and Infrastructure Monitoring. June 2008. Jeju, Korea.
37) Tran, P., Kandula, S., Geubelle, P. H. and Sottos, N. R. "Dynamic delamination testing of patterned thin films: a combined experimental and numerical study". Proceedings of the 12th International Conference on Fracture, Ottawa, July 12-17, 2009.
38) Ostoich C., Bodony, D. J., Geubelle, P. H., ``Coupled computational fluid-thermal investigation of hypersonic flow over a quilted dome surface," Bull. Amer. Phys. Soc., Vol 54(19), 2009.
39) Sucheendran M., Bodony, D. J., Geubelle, P. H., ``Structural-acoustic interaction of a cavity-backed, clamped, elastic plate with sound in a duct," Bull. Amer. Phys. Soc., Vol 54(19), 2009.

INVITED (NON-CONFERENCE) TALKS

"A spectral scheme for three-dimensional dynamic fracture problems". University of Delaware, Solid Mechanics Seminar Series. November 8, 1996.

"Simulation of 3-D dynamic fracture events". University of Michigan, Department of Aerospace Engineering. February 1997.

"Numerical simulation of dynamic fracture : Spectral scheme". University of Illinois, AAE Departmental Graduate Seminars. November 1998.

"Numerical simulation of dynamic fracture : Cohesive/volumetric finite element scheme". Center for the Simulation of Advanced Rockets, University of Illinois. March 1999.

"Fundamental problems in dynamic fracture mechanics". University of Illinois, Department of Theoretical and Applied Mechanics. March 9, 2000.

"Spectral-based simulations of 2-D and 3-D fundamental dynamic fracture problems". University of Notre Dame. Department of Aerospace Engineering. April 4, 2000.

"Spectral-based simulations of 2-D and 3-D fundamental dynamic fracture problems". Washington University. Department of Mechanical Engineering. September 14, 2000.

"Simulation of dynamic fracture problems". Northwestern University. Solid Mechanics Seminar. December 1, 2000.

"Simulation of dynamic fracture events in solid propellant rockets". University of Iowa. Mechanical Systems Graduate Seminar. November 1, 2001.

"A self-healing composite". C.R.I.F. Solid Mechanics Seminar. Sart-Tilman, Liège, Belgium. November 23, 2001.

"Dynamic failure of solid propellant rockets". Los Alamos National Lab. Combustion Seminar. December 13, 2001.

"Simulation of dynamic fracture events". Université Catholique de Louvain. CESAME Seminar. October 15, 2002.

"A self-healing composite concept". Max Plank Institute. Stuttgart, Germany. Materials Seminar Series. November 2002.

"Failure of a self-healing composite under monotonic and fatigue loading", University of Notre Dame, December 2003.

"Monotonic and fatigue failure of a self-healing composite", Johns Hopkins University, April 2004.

"Failure of a self-healing composite under monotonic and fatigue loading: experiments and cohesive modeling", University of Maryland, March 1, 2005.

"Fatigue response of a self-healing composite: experiments and multiscale modeling", Brown University, April 4, 2005.

"Multiscale cohesive modeling of self-healing composite", Michigan Tech., April 21, 2005.

"Multiphysics simulations of solid propellant rockets", ADD, TaeJon, South Korea, May 2006.

"A self-healing composite concept", KARI, TaeJon, South Korea, May 2006.

"Numerical modeling of fluid/structure interaction", National Technical University Pusang, South Korea, May 2006.

"Stable and accurate modeling of transient fluid/structure interaction events", Mechanical Engineering Department Seminar, University of California Riverside. February 23, 2007.

"A biomimetic self-healing composite material: Fatigue response and multiscale cohesive modeling ". Mechanical and Materials Engineering Seminar. Washington State University, Pullman, WA. April 5, 2007.

"Fatigue response of a biomimetic self-healing material: experimental observations and multiscale cohesive modeling" Departmental seminar, Department of Mechanical and Aerospace Engineering, University of Notre Dame, South Bend, IN, November 2007.

"A new class of biomimetic self-healing/cooling polymeric materials". Departmental seminar, Aerospace Engineering, University of Michigan, Ann Arbor, MI. November 20, 2008.

"Stable and accurate modeling of transient fluid/structure interaction events", Aeronautical Engineering Department Seminar, Purdue University. April 2, 2009.

SUPERVISED PHD AND MS THESES

1. DANYLUK, M. J. Visco-elastodynamic fracture using a spectral method. M. S. Thesis. P. H. Geubelle, adviser (1996).
2. BAYLOR, J. S. A numerical simulation of impact-induced damage of composites. M. S. Thesis. P. H. Geubelle, adviser (1997).
3. HEGEMAN, A. J. Self-repairing polymers: repair mechanisms and micro-mechanical modeling. M. S. Thesis. S. R. White and P. H. Geubelle, advisers (1997).
4. BREITENFELD, M. S. Simulations of dynamic failure of interfaces using a spectral method. M. S. Thesis. P. H. Geubelle, adviser (1997).
5. WOOD, B. Aeroelastic simulations of a novel bleeding system for supersonic inlets. M. S. Thesis. P. H. Geubelle and E. Loth, advisers (1999).
6. VISWANATHAN, S. Micromechanical modeling of self-healing polymeric composites. M. S. Thesis. P. H. Geubelle, adviser (2000).
7. ZHU, Qi Dimensional accuracy of thermoset polymer composites: Process simulation and optimization. Ph.D. Thesis. P. H. Geubelle, adviser (2000).
8. ZACZEK, Mariusz Adaptive cohesive volumetric finite element method for dynamic fracture simulations. M.S. Thesis. P. H. Geubelle, adviser (2001).

9. KUBAIR, Dhirendra Cohesive modeling of dynamic fracture: rate dependence and intersonic crack motion. Ph.D. Thesis. P. H. Geubelle, adviser (2001).
10. THOMAS, Jay Multi-scale spectral/molecular dynamics simulation of dynamic fracture in brittle materials. M.S. Thesis. P. H. Geubelle, adviser (2002).
11. MAITI, Spandan Grain-level simulation of dynamic failure in ceramic materials. Ph.D. Thesis. P. H. Geubelle, adviser (2002).
12. OZHKAYA, Lale Flutter analysis of a single flap system under supersonic flow. M.S. Thesis. P. H. Geubelle, adviser (2003)
13. KANDULA, Soma Cohesive modeling of fracture in functionally graded materials. M.S. Thesis. P. H. Geubelle, adviser (2004)
14. BI, Xiaopeng Dynamic fiber debonding and push-out in model composites. Ph.D. Thesis. P. H. Geubelle and J. Lambros, co-advisers (2003)
15. DANTULURI, Venkata Cohesive modeling of delamination in Z-pin reinforced composites. M.S. Thesis. P. H. Geubelle, adviser (2004)
16. MANGALA, Sandhya Dynamic fracture simulations with adaptive mesh modification in parallel framework. M.S. Thesis. P. H. Geubelle, adviser (2006)
17. ROE, Brad Coupled thermal simulations of fluid-structure problems. M.S. Thesis. P. H. Geubelle, adviser (2006)
18. DEWEY, H. Heath Large-scale three-dimensional simulations of aeroelastic phenomena. M.S. Thesis. P. H. Geubelle, adviser (2006)
19. NITTUR, Parag G. Mesoscale analysis of fragmentation of ceramics under dynamic multiaxial compression. M.S. Thesis. P. H. Geubelle, adviser (2006)
20. KUMAR, Natarajan Genetic algorithm based reconstruction of periodic unit cells of random particulate composites. M.S. Thesis. P. H. Geubelle, adviser (2006)
21. JAIMAN, Rajeev Accuracy and stability of transient multiphysics simulations. Ph.D. Thesis, P. H. Geubelle and E. Loth, co-advisers (2007)
22. KANDULA, Soma Delamination of thin film patterns using laser-induced stress waves. Ph.D. thesis, N. R. Sottos and P.H. Geubelle, co-advisers (2008)
23. SRINIVASAN, Karthik, Thermomechanical meso-scale modeling of combustion of heterogeneous solid propellants. Ph.D. thesis, P. H. Geubelle, K. Matous and T. Jackson, co-advisers (2008)
24. INGLIS, Helen Multiscale modeling of the effect of debonding on the constitutive response of heterogeneous materials. Ph.D. thesis, P. H. Geubelle, adviser (2008)
25. PATEL, Jay Deterministic and stochastic analysis for debonding of fibrous composites using micromechanics modeling M.S. thesis, P. H. Geubelle, advisor (2009)
26. KULKARNI, Mohan. Multiscale cohesive modeling of heterogeneous adhesives. Ph.D. thesis, P. H. Geubelle and K. Matous, co-advisers (2009)

MS and PhD theses currently supervised

27. ARAGON, Alejandro. Computational design of microvascular materials for active cooling. Ph.D. thesis, P. H. Geubelle, adviser (Underway – Expected Summer 2010)
28. TRAN, Phuong. Laser-induced delamination test protocol for thin films: modeling and experiments. Ph.D. thesis, P.H. Geubelle and N. R. Sottos, co-advisers. (Underway – Expected Summer 2010)
29. SALVARASU, Premsainath. Role of residual stresses and inelasticity on dynamic delamination of thin films. M.S. thesis. P. H. Geubelle, adviser (Underway – Expected December 2010)
30. STUMP, Fernando. Multiscale modeling of damage in thin metallic films for MEMS applications. Ph.D. thesis. P. H. Geubelle, adviser (Underway – Expected December 2011)

31. SUSHEENDRAN, Mahesh. Structural/acoustic coupled analysis of thin-walled aerospace structures. P. H. Geubelle and D. Bodony, co-advisers (Underway – Expected December 2011)
32. BREITENFELD, M. Scot. Peridynamics analysis of fracture problems. P. H. Geubelle, adviser. (Underway - Expected Summer 2012)
33. OSTOICH, Christopher. Multi-physics modeling of thermal/fluid/solid coupling in hypersonic vehicles. D. Bodony and P. H. Geubelle, co-advisers (Underway – Expected Summer 2012)
34. SMITH, Kyle. Elasto-plastic analysis of intrinsically nonlinear wave tailoring granular materials. M.S. thesis. P. H. Geubelle, advisor (Underway)
35. SOGHRATI, Soheil. Multiscale analysis and design of microvascular composites for active cooling. Ph.D. thesis. P. H. Geubelle, advisor (Underway)

RESEARCH GRANTS AND CONTRACTS

Years	Brief Title or Description	Source of Funds	Total funding	Funding Allocated to this Professor	# of PI's & Lead PI if not this Professor
97-01	Experimental and Analytical Investigation of Dynamic Fiber Pull-Out in Composites	NSF	$252,000	$110,000	2 (P. Geubelle, PI)
97-07	ASCI Center for the Simulation of Advanced Rockets	DOE	$40,000,000	$1,800,000	20 (M. Heath, PI)
97-00	Dimensional Stability and Optimization of Composite Manufacturing	NSF	$305,000	$100,000	3 (S. White, PI)
97-99	Preliminary Numerical Design of Smart Bleeding System for Supersonic Inlets (2-year CSE Fellowship – Brett Wood, Graduate Student)	CSE, UIUC	$50,000	$50,000	2 (P. Geubelle, PI)
98-02	High Speed Grinding of Ceramics	NSF (Career Award)	$208,000	$208,000	1 (P. Geubelle, PI)
98	Smart Mesoflaps for Aeroelastic Transpiration for SBLI Flow Control	AFOSR	$85,401	$20,000	5 (E. Loth, PI)
99-02	Smart Mesoflaps for Aeroelastic Transpiration for SBLI Flow Control	DARPA	$2,120,318	$200,000	6 (E. Loth, PI)
98-00	Health Monitoring and Maintenance of Composite Structures	UIUC, CRI	$200,000	$50,000	3 (S. White, PI)
99-01	Development of Self-Healing Structural Composite Materials	AFOSR	$85,662	$20,000	4 (S. White, PI)
01-04	Dynamic Fracture of Functionally Graded Materials	NSF	$330,000	$100,000	3 (G.Paulino, PI)
01-02	Dynamic Failure of Z-Pinned Composite Laminates	AFSOR (SBIR – Phase I)	$200,000	$20,000	1 – Academic consultant for AdTech Syst., Dayton, OH
03-04	Quasi-Static and Dynamic Failure of Z-Pinned Composite Laminates	AFOSR (SBIR – Phase II)	$700,000	$130,000	1 – Subcontract for AdTech Syst., Dayton, OH
01-05	A Finite Element Framework for Very Large Scale Dynamic Fracture Simulations on the IBM BlueGene	NSF	$750,000	$95,000	4 (L. Kale, PI)
02-05	Multiscale Modeling of Fatigue Response of Self-Healing Structural Composite	AFOSR (MEANS)	$900,000	$250,000	3 (S. White, PI)
03-04	Development of a CVFE code for the simulation of dynamic response of a LNG insulation system	American Bureau of Shipping	$30,000	$30,000	1 (P. Geubelle, PI)
04-07	Thin film fracture and decohesion in micro- and	NSF	$165,000	$70,000	2 (N. Sottos, PI)

	nano-patterned devices				
05-10	MURI- Microvascular autonomic composite	AFOSR	$5,467,683	$500,000	11 (S. White, PI)
05-08	Multiscale Experimental and Numerical Design of a Self-Healing Epoxy Adhesive	NSF	$310,000	$120,000	4 (P. Geubelle, PI)
05-07	Multiscale modeling of damage in solid propellants	ATK-Thiokol	$288,770	$140,000	2 (K. Matous, PI)
06-11	Midwest Structural Science Center	AFRL	$3,103,269	$250,000	10 (W. Dick, PI)
06-09	Impact MEMS Center	DARPA	$800,000	$60,000	10 (A. Cangellaris, PI)
07-10	GOALI: Dynamic adhesive failure of patterned thin films	NSF	$300,000	$120,000	2 (N. Sottos, PI)
08-11	Development of a laser spallation protocol for rapid characterization of interface reliability	SRC	$216,687	$100,000	2 (N. Sottos, PI)
09-12	Experiments and models on room temperature creep of nanocrystalline metallic films	NSF	$398,521	$180,000	2 (I. Chasiotis, PI)
09-12	Further development of peridynamics method for fracture problems and application to multiscale modeling of materials	Boeing	$308,551	$308,551	(P. Geubelle, PI)
09-14	MURI – Development of wave tailoring materials	ARO	$7,500,000	$1,500,000	6 (J. Lambros, PI)
09-14	MURI – Development of hybrid materials for high-temperature applications	AFOSR	$8,750,000	$500,000	12 (O. Ochoa, TA&M, PI)

EDUCATION GRANTS AND CONTRACTS

Years	Brief Title or Description	Source of Funds	Total funding	Funding Allocated to this Professor	# of PI's & Lead PI if not this Professor
98	Undergraduate Course Development Award: Development of AAE 270	UIUC PI	$8,000	$8,000	1 (P. Geubelle, PI)
00-01	Innovative use of information technology for curriculum redesign	UIUC PI	$38,000	$38,000	3 (P. Geubelle PI)
03	Illinois Space Grant	NASA	$465,000	NA	(P. Geubelle, PI)
04-05	NASA Workforce Development Grant – Development of Aerospace UROP	NASA	$100,000	NA	3 (P. Geubelle, PI)
04-10	Summer UROP in Aerospace Engineering and Science	Boeing	$150,000	NA	(P. Geubelle, PI)
05-06	NASA Space Grant Augmentation	NASA	$162,875	NA	(P. Geubelle, PI)
07	Illinois Space Grant Consortium	NASA	$590,000	NA	(P. Geubelle, PI)
07-09	REU Site for Undergraduate Research Opportunity in Aerospace Engineering and Science	NSF	$261,000	NA	10 (P. Geubelle, PI)
08	Illinois Space Grant Consortium	NASA	$590,000	NA	(P. Geubelle, PI)
09	Space Grant award for collaboration with minority serving institutions	NASA	$130,000	NA	(P. Geubelle (PI) and K. Coble (Chicago State U., co-PI)
09	Illinois Space Grant Consortium	NASA	$785,000	NA	(P. Geubelle, PI)

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

Reviewer

National Science Foundation, Israel Science Foundation, Journal of the Mechanics Physics Solids, International Journal Numerical Methods Engineering, Computational Methods in Applied Mechanics and Engineering, ASME Journal of Applied Mechanics, Computational Mechanics, Mechanics of

Materials, Communications in Numerical Methods in Engineering, ASME Journal of Engineering Materials and Technology, International Journal of Fracture, Quarterly Journal of Mechanics and Applied Mathematics, Proceedings A of the Royal Society of London, Engineering Fracture Mechanics.

Professional/Conference Committees

Organizing Committee, 2nd International Conference on Self-Healing Materials, Chicago, June 2009.
Organizing Committee, 10th US National Congress of Computational Mechanics, Columbus, July 2009.
Organizing Committee, 2008 SES Meeting, Champaign, October 2008.
Organizer and chairman of Symposium on Dynamic Rupture Mechanics, ASME Summer Meeting, Baltimore, June 1996.
Organizer and chairman of a symposium on Experimental and Numerical Fracture Mechanics, ASME Summer Meeting, Chicago, June 1997.
Organizer and chairman of a symposium on Recent Advances in Dynamic Properties of Materials, ASME IMECE 2000, Orlando, November 2000.
Organizer of a symposium on Dynamic Fragmentation of Brittle Materials, ASME IMECE 2004, Annaheim, November 2004.
Co-organizer of symposium on Fragmentation of Brittle Materials, ASME IMECE 2005, Orlando, November 2005.
Co-organizer of symposium on Recent Advances in Cohesive Modeling, WCCM7, Los Angeles, July 2006.
Co-organizer of symposium on Mechanics of Thin Films, SES07, Texas A&M, October 2007.
Co-organizer of symposium on Fluid/Structure Interaction, SES08, University of Illinois, October 2008.
Co-organizer of symposium on Damage and Failure of Heterogeneous Materials, SES08, University of Illinois, October 2008.
Co-organizer of symposium on Wave Tailoring and Metamaterials, IMECE10, Vancouver, November 2010.

ASME Technical Committee on Dynamic Response of Materials, Chair (2007-2009), Secretary (2005-2007)
ASME Technical Committee on Computational Mechanics, Vice-Chair (2008-present)

RECENT TEACHING AND OTHER EDUCATIONAL ACTIVITIES

Introduced in 2004 the Undergraduate Research Opportunity Program (UROP) in Aerospace Engineering and Science, in which 15 to 20 undergraduate students from the College of Engineering are involved every summer in an intensive research experience. This program, which is supported by NASA and Boeing funds, also involves weekly workshops, seminars and industry tours. The sixth offering of this program will take place over the 2009 summer.

Led in 2007 a successful proposal to establish a Research Experience for Undergraduates (REU) site in aerospace engineering and science, in which ten undergraduate students from across the country participate in an 8 to 10-week research program in direct collaboration with an AE faculty member and his/her graduate students. The REU program ran for three summers from 2007 to 2009.

Course taught at the University of Illinois (C=Created, R=substantially revised by PHG)

AE100SD: Introduction to Aerospace Engineering – Spacecraft and rocket design (C)
AE321: Aerospace Structures I - Theory of elasticity
AE322: Aerospace Structures II - Strength of materials, energy methods, structural stability
AE470: Aerospace Numerical Methods (C)

AE420: Introduction to the finite element method (R)
AE/CEE575: Fracture Mechanics (R)

Member of more than 40 preliminary exam committees and 30 PhD thesis defense committees.

RECENT ADMINISTRATIVE ACTIVITIES

Director of Illinois Space Grant Consortium (ISGC), a NASA Higher Education program promoting workforce development projects at various academic, research and outreach institutions across the State of Illinois (2003-present). ISGC intitutions include the University of Illinois, Northwestern University, University of Chicago, Illinois Institute of Technology, Chicago State University, Bradley University, University of Illinois Chicago, Southern Illinois University, Adler Planetarium and Observatory, Rockford Museum and Discovery Center, Argonne National Lab and FermiLab. The 2009-2010 ISGC budget is $785,000. Under my tenure as ISGC Director, I made substantial changes to the organization, adopting a more centralized approach that allows to better match NASA Headquarters priorities with educational activities throughout the State of Illinois. I tripled the number of ISGC affiliate institutions and greatly increased the participation of under-represented students in Space Grant programs.

Associate Head for Undergraduate Program and Chief Undergraduate Advisor, Department of Aerospace Engineering, University of Illinois (2007-2008). Together with my successor, Prof. E. Loth, I led the Department through the most substantial curriculum revision of the past 40 years. This revision included a grater emphasis on information technology, on computational methods and on probability and statistics while maintaining the Department's traditional emphasis on fundamental multidisciplinary education in fluid mechanics and propulsion, solid mechanics and materials, and dynamics and controls. The revised curriculum also provides additional flexibility in course scheduling, allowing the students easier access to extra-curricular and study abroad programs, internships and coops. The new curriculum will be implemented this coming Fall. I also initiated an exchange program with the Faculty of Aerospace Engineering at Delft (Netherlands), allowing our students to participate in a high quality study abroad program without affecting their time for graduation.

Associate Head for Graduate Program, Department of Aerospace Engineering, University of Illinois (2008-present). In that position, I am responsible for the recruiting and admission of all graduate students, the assignment of teaching assistantships and the advising of all AE graduate students. Over the past year, I also led a major revision to our Master's program, especially of our course-only option which has been of increasing interest to prospective students. I worked with the College administration to secure a graduate tuition return to the department. These additional funds have allowed the department to offer for the first time in 2010 ten graduate fellowships (named after the founder of the department, H. Stillwell) aimed at recruiting top applicants to the AE PhD program. From about 75 in 2007, the graduate population has increased over the past couple of years to more than 125, with more than half of the increase associated with the success of the coursework-only MS program. Together with my colleague Prof. Coverstone, I have also played an instrumental role in establishing a new MS option in Aerospace Systems Engineering, which will be offered for the first time in the Fall of 2011.

Member of Science Steering Committee of the DOE/ASC Center for the Simulation of Advanced Rockets (CSAR) at the University of Illinois (1997-2008). CSAR was a major research project (funded at approximately $4,000,000 per year for a total of 10 years centered in the University of Illinois Computational Science and Engineering (CSE) program and aimed at the multiphysics first-principle modeling of key physical phenomena taking place in solid propellant rockets. The Science Steering Committee, on which I was the representative of the solid mechanics group, oversaw the key research and budgetary priorities of the Center.

College Engineering Council on Global Initiatives (2008-2009)

College Steering Committee on Information Services (Chair) (2008-present)
College Subcommittee on Instructional Computing – College Budget Action Group (Chair) (2010)
College Search Committee for CEE Department Head (2004)
College Search Committee for AE Department Head (1998 and 2007)
College AdHoc Committee on Faculty Retention (2010)
Department Committees: Undergraduate curriculum, Advisory Committee, Graduate Policy Committee, Teaching Assistant Committee, Promotion and Tenure Committee, Faculty Search Committee, …