

RENA BIZIOS

CURRICULUM VITAE

ADDRESS Department of Biomedical Engineering
The University of Texas at San Antonio
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CITIZENSHIP U.S.A.

EDUCATION Massachusetts Institute of Technology, Cambridge, MA
Ph.D. in Biomedical Engineering

California Institute of Technology, Pasadena, CA
M.S. in Chemical Engineering

University of Massachusetts, Amherst, MA
B.S. (*Cum Laude*) in Chemical Engineering

RESEARCH AND TEACHING APPOINTMENTS

2006.-.present Peter T. Flawn Professor, Department of Biomedical Engineering,
The University of Texas at San Antonio, San Antonio, TX

1981 - 2005 Professor (1997 - 2005), Associate Professor (1986 - 1996), Assistant
Professor (1981 - 1986) of Biomedical Engineering, School of
Engineering, Rensselaer Polytechnic Institute, Troy, NY.

2000 - 2005 Professor of Chemical Engineering, School of Engineering,
Rensselaer Polytechnic Institute, Troy, NY.

July - December, 2005 Directeur de Recherche Associé, Centre National de la Recherche Scientifique,
Faculté de Médecine Saint-Louis Lariboisière, Université Paris VII, Paris, France

Spring 2003 Chercheur Associé, Centre National de la Recherche Scientifique, Faculté
de Médecine Saint-Louis Lariboisière, Université Paris VII, Paris, France
(sabbatical leave).

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RESEARCH AND TEACHING APPOINTMENTS (*continued*)

Fall 2002	Chalmers Jubileums Professor, Chalmers University of Technology, Göteborg, Sweden (sabbatical leave).
1982 - 2000	Adjunct Associate Professor (1989 - 2000), Adjunct Assistant Professor (1982 - 1989), Member of the Graduate Faculty (1988 - 2000), Department of Physiology and Cell Biology, Albany Medical College, Albany, NY.
Spring 1996	Visiting Associate Professor, Department of Chemical Engineering, Rice University, Houston, TX (sabbatical leave).
Fall 1995	Visiting Scientist, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA (sabbatical leave).
1987 - 1988	Visiting Associate Professor, Department of Chemical Engineering, Rice University, Houston, TX (sabbatical leave).
1979 - 1980	Postdoctoral Fellow, Special Coagulation Laboratory, Roger Williams General Hospital, Providence, RI.

AWARDS

- Health Sciences and Technology Fellowship, Massachusetts Institute of Technology (1975 - 1979).
- ***Outstanding Alumna in Engineering Award***, Society of Women Engineers, College of Engineering, University of Massachusetts (1985).
- ***Rensselaer Alumni Association Teaching Award*** (1997).
- Society for Biomaterials, ***Clemson Award for Outstanding Contributions to the Literature*** (the Scientific Literature of Biomaterials), (1998).
- ***Distinguished Scientist Award***, Houston Society for Engineering in Medicine and Biology (HSEMB), (2009).
- ***2010 Women's Initiatives Mentorship Excellence Award***, The American Institute of Chemical Engineers (AIChE), (2010).

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HONORS

Tau Beta Pi.

Phi Kappa Phi.

Sigma Xi.

Co-chair (with P. Johnson) for the *Functional Biomaterials* Panel, First NIH BEACON Symposium on “Building the Future of Biology and Medicine” (1998).

Newcomb Lecturer, Tulane University, New Orleans, LA (1999).

Chair, Bioengineering Research Partnership, Musculoskeletal and Dental Sciences Emphasis Panel, National Institutes of Health (1999 and 2000).

Chair, *Nanomaterials and Bioengineering* Session, National Science Foundation (NSF)-European Commission (EC) Workshop: From Nanomaterials to Nanotechnology (2002).

Chalmers Jubileums Professor, Chalmers University of Technology, Göteborg, Sweden (Fall, 2002)

Discussion Leader of the *Cellular and Molecular Aspects of Tissue Biomechanics* session at the “Biomaterials: Biocompatibility and Tissue Engineering” Gordon Research Conference, Plymouth, NH (2003).

Invited speaker, Whitney Symposium on “Bionics”, General Electric Global Research Center, Niskayuna, NY (2004).

Chair, *Nanoscience and Nanotechnology in Biology and Medicine* Special Emphasis Panel, National Institutes of Health (2005).

Peter T. Flawn Professorship, The University of Texas at San Antonio, San Antonio, TX (2006 – present).

Hunter Distinguished Lecturer, Clemson University, Clemson, SC (2007).

Myrle E. and Verle D. Nietzel Visiting Distinguished Faculty Lecture, University of Kentucky, Lexington, KY (2009)

Fellow of Societies

- **Fellow, American Institute for Medical and Biological Engineering** (inducted in 1999).
- **International Fellow, International Union of Societies for Biomaterials Science and Engineering** (inducted in 2000).
- **Fellow, Biomedical Engineering Society** (inducted in 2005).
- **Fellow, American Institute of Chemical Engineers** (inducted, 2010)
- **Fellow, American Association for the Advancement of Science** (elected 2010)

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MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Biomedical Engineering Society
- American Institute of Chemical Engineers
- Society for Biomaterials
- American Association for the Advancement of Science
- Materials Research Society
- Society of Women Engineers
- American Society for Engineering Education

PROFESSIONAL ACTIVITIES

Biomedical Engineering Society: Meetings Committee (Chairperson, 1983 - 1984); Membership Committee (Member, 1986 - 1990); Board of Directors (Member, 1987 - 1990); Program Chair, Spring 1991 Meeting; Program Committee (Member, 1990 - 1991); Nominating Committee (Member, 1990 - 1991; 1992 - 1993); BMES Bulletin, Bioengineering Science News Editorial Board (Member, 1990 - 1992; Editor, 1993 - 1994); Nominating Committee (Member, 1996 – 1997); Fellows Selection Committee (Member, 2010 – 2012). Program of the Orthopedic and Rehabilitation Track at the 2010 Annual Meeting: (Co-Chair/Co-Organizer with J. P. Fisher).

American Institute of Chemical Engineers: Programming Area 5d/e (Chair, 1999 - 2001).

American Institute for Medical and Biological Engineering: Publications Committee (Chair, 1994 - 1996); Vice-President-at-Large (2009 - 2011).

Society for Biomaterials: Program Committee for the 21st Annual Meeting (Member, 1995); Program Committee for the 23rd Annual Meeting (Member, 1997); "Proteins and Cells at Interfaces" Special Interest Group (Chairperson, 1995 - 1997); Awards, Ceremonies & Nominations Committee (Elected Member, 1998 - 1999); Board of Directors (Elected Member-at-Large, 2005 - 2006); Subcommittee on Biomaterials Fellows (2007). Presenter/Panelist at the *Carry the Torch: Understanding Typology, Leadership and Communication Styles to Become a Dynamic and Effective Leader in the Field of Biomaterials* Workshop, 2007 Annual Meeting, Chicago, IL (2007); Fellows Selection Committee (2010)

Houston Society for Engineering in Medicine and Biology

Program Committee for the "Molecular, Cellular and Tissue Engineering" Sessions for the 26th Annual Houston Conference on Biomedical Engineering Research (Members: R. Bizios, E. Cosgriff-Hernandez and A.G. Mikos; 2009).

Society of Women Engineers: Women in Academia Committee (Member, 1982 - 1988).

American Society for Engineering Education: Women in Engineering Committee (Secretary/Treasurer, 1986 - 1987).

Advisory Council, Graduate Program in Biotechnology, Manhattan College: Riverdale, NY (Member, 1989 - 1994)

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EDITORIAL BOARDS

- BMES Bulletin, Bioengineering Science News (Editor, 1993 - 1994; Member 1990 - 1992)
- Modeling in Physiology, The American Physiological Society (1991 - 1994)
- Journal of Biomedical Materials Research: Applied Biomaterials (1998 - 2002)
- Journal of Biomedical Materials Research (2000 - present)

REVIEW PANELS

- Technical/Engineering Education Grant Program, New Jersey Department of Higher Education
- NSF Biomedical Engineering and Aiding the Disabled Program
- NSF Visiting Professorships for Women Program
- NSF Faculty Awards for Women Program
- NSF Presidential Faculty Fellows Program
- NSF Graduate Research Fellowship Program
- The New York State Science and Technology Foundation
- NIH Biomedical Research Technology Program Review Committee (1993 - 1996)
- NSF Cost Effective Health Care Technologies
- NASA Microgravity Biotechnology
- Ford Foundation Predoctoral Fellowship Program
- U.S. Department of Energy
- NIH Surgery and Bioengineering Study Section (1997 - 2001)
- NIH Bioengineering Research Partnership, Musculoskeletal and Dental Sciences
- NSF Committee of Visitors, Bioengineering and Environmental Engineering (2002)
- NSF Site Visiting Committee, Engineering Research Centers
- NIH Special Emphasis Review Panel: Nanotechnology (2004; 2005)
- NIH National Institute of Dental & Craniofacial Research Special Grants Review Committee (2004 – 2008)
- NIH/NCRR Centers of Biomedical Research Excellence (COBRE) Special Emphasis Panel (2005)
- NIH Special Emphasis Panel: Skeletal Cell Biology (2006)
- NIH Special Emphasis Panel (ZRG1 BST-G (40)P): RESBIO Site Visit (2007)
- NIH/NIBIB (ZEB1 OSR-E (M1)) Training Grant Review (2008)
- NSF, Site Visit of the Partnership for Research and Education in Materials (PREM) between the University of New Mexico and Harvard University (2009)
- NIH, Center for Scientific Review Special Emphasis Panel, Challenge Grants Panel 4 (ZRG1 BST-M (58), (2009)
- NIH, National Institute of Biomedical Imaging and Bioengineering (NIBIB) Special Emphasis Panel, ARRA NIBIB P30 Enhancing Research Capacity (ZEB1 OSR-B (01), (2009)
- NIH, Biomaterials and Biointerfaces (BMBI) Study Section, Bioengineering Sciences & Technology (BST) `Integrated Review Group, (2009)
- NIH, Center for Scientific Review Special Emphasis Panel (ZRG1 BST-J (40)), Site Visit (2009)
- NIH, College of CRC Reviewers (2010 – 2012)

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REVIEW PANELS (*continued*)

- NIH, Center for Scientific Review, “Topics in Bioengineering” Panel (ZRG1 BST-H 90 M; 2010)
- NIH, Biomaterials and Biointerfaces (BMBI; 2011/01 Study Section), (2010)
- NSF PREM Reverse Site Visit Panel A (2010)
- NSF DMR MRSEC Review Panel G (2010)

CONSULTING

- Committee of Examiners for the GRE Engineering Test, Educational Testing Service (1990 - 1994)
- MatTek Corporation, Ashland, MA (1989 - 1991)
- Advanced Surface Technology, Inc., North Billerica, MA (1990 - 1993)
- Purdue University Tissue Engineering Advisory Board (1997 - 2002)
- Boston Scientific Corporation (2004 – 2006).
- University of Southern California Biomimetic Microelectronic Systems NSF Engineering Research Center Scientific Advisory Board (2007 – present).
- European Consortium on “Creating International Cooperation Teams of Excellence in the Emerging Biomaterials Surface Research” (INCOMAT) (2007 - 2009).
- Institute of Biomedical Research & Technology, Center for Research & Technology-Thessaly (CERETETH), University of Thessaly, Larissa, Greece (2007 – present)

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PATENTS

- K. C Dee, T.T. Anderson, R. Bizios. *KRSR Peptides for Altering Osteoblast Adhesion*. U.S.-6,262,017-B1.
- T.J. Webster, R.W. Siegel, R. Bizios. *Nanostructured Ceramic and Composite Materials for Orthopedic/Dental Applications*. U.S.-6,270,347-B1.

PATENT APPLICATIONS

- Dell'Acqua Bellavitis, L., J. D. Ballard, R. Bizios, R.W. Siegel. *Nanoscale Probes for Electrophysiological Applications*. (November 22, 2006).

INVENTION DISCLOSURE

- P.R. Supronowicz, R. Bizios, P.M. Ajayan, R. W. Siegel. *Electrically Conducting Nanocomposite Materials for Biomedical Applications*. U.S.-2003-0153965-A1.

TEXTBOOK

Dee, Kay C, David A. Puleo, Rena Bizios. ***An Introduction to Tissue-Biomaterial Interactions***. John Wiley & Sons. Hoboken, NJ (2002).

BOOK

Puleo, A.D., and R. Bizios (eds.). ***Biological Interactions on Material Surfaces: Understanding and Controlling Protein, Cell and Tissue Responses***. Springer, New York, NY (2009).

JOURNAL SPECIAL ISSUE

Puleo, D., K. C Dee, R Bizios (guest editors). Special Issue on ***Current Challenges in Cell-Biomaterial Interactions***. Biomaterials, vol. 20, No. 23/24 (1999).

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Thesis Research Directed at Rensselaer Polytechnic Institute

Scott J. Solano	<i>Neutrophil Kinetics in the Healthy Lung</i> , Master's Thesis (1983).
Carole A. Heath	<i>A Simple Model for Describing Pulmonary Transport of Fluid and Protein in Unanesthetized Sheep</i> , Master's Thesis* (1984)
Mark D. Kramer	<i>Pulmonary Neutrophil Kinetics in Sheep: A Model Based on Transfer Function Analysis</i> , Master's Thesis (1984).
Christopher M. Sloan	<i>The Effect of Elevated Hydrostatic Pressure on Cultured Endothelial Cell Morphology and Transport Properties</i> , Master's Thesis (1990).
David A. Puleo	<i>Interaction of Osteoblasts with Orthopedic Biomaterials In Vitro</i> , Doctoral Thesis (1991).
Arlene D. Acevedo	<i>Mechanisms of Endothelial Cell Responses to Hydrostatic Pressure: Role of Fibroblast Growth Factor</i> , Master's Thesis (1992).
Raymond D. Iveson	<i>Osteoblast Responses to Shear Stress and Electric Current Density</i> , Master's Thesis (1993).
Brian T. Garvey	<i>Transmission Electron Microscopy Examination of the Interface Between Osteoblasts and Various Orthopedic Biomaterials</i> , Master's Thesis (1993).
Kevin C. Olbrich	<i>Cellular Function on Substrates Modified with Covalently Immobilized, Adhesive Peptides</i> , Master's Thesis (1994).
Matthew W. Squire	<i>Analysis of Osteoblast Mineral Deposits on Orthopaedic/Dental Implant Metals</i> , Master's Thesis (1994).
Sarah A. Salwen	<i>Vascular Endothelial Cells Exposed to Sustained Hydrostatic Pressure: A Three Dimensional Evaluation of Proliferation and Cytoskeletal Rearrangement</i> , Master's Thesis (1995).

*Co-advisor

Rena Bizios

Thesis Research Directed at Rensselaer Polytechnic Institute (continued)

- Hainsworth Y. Shin *Synthesis and Release of Bone-Related Proteins by Osteoblasts Exposed to Steady Fluid Shear Stress*, Master's Thesis (1995)
- Kay C Dee *Considerations for the Design of Proactive Dental/orthopaedic Implant Biomaterials*, Doctoral Thesis (1996).
- Michael J. Burkstrand *Bone Cell Adhesion on Substrates Modified with Adhesive Bioactive Peptides*, Master's Thesis (1996).
- Lance C. Kam *Modulation of Neuron and Astroglial Cell Function by Micropatterning and Immobilization of Select Biomolecules on Biomaterial Surfaces*. Doctoral Thesis* (1999).
- Thomas J. Webster *Design, Synthesis, and Evaluation of Nanophase Ceramics for Orthopedic/Dental Applications*. Doctoral Thesis* (2000)
- Karen M. Haberstroh *An In Vitro Model of Bladder Smooth Muscle Cell Function in Response to Sustained Hydrostatic Pressure*. Doctoral Thesis* (2000).
- Eric A. Schwartz *Molecular Mechanisms of the Responses of Human Endothelial Cells to Sustained Hydrostatic Pressure: Involvement of Integrins and Growth Factor Receptors* Doctoral Thesis (2000)
- Klaus R. Ullmann *The Effects of Alternating Electric Current Stimulation on Select Osteoblast Functions*. Master's Thesis (2000)
- Meredith E. Hasenbein *Osteoblast Functions on Micropatterned Surfaces Modified with Select Adhesive Peptides*. Master's Thesis (2001)
- Jiro Nagatomi *An in Vitro Model of the Mechanical Regulation of Bone Homeostasis: Effects of Cyclic Pressure on Select Bone Cell Functions*. Doctoral Thesis (2002)
- Peter R. Supronowicz *The Effects of Biophysical Stimuli on Select Bone Cell Functions Pertinent to Osteogenesis*. Doctoral Thesis (2002)

*Co-advisor

Rena Bizios

Thesis Research Directed at Rensselaer Polytechnic Institute (continued)

- Sheila L. Dela Cruz *Effects of Pressure on Vascular Smooth Cell Function.*
Master's Thesis (2002)
- Anastasia J. McManus *A Evaluation of the Cytocompatibility and Mechanical Propertis
of Novel Polymer:Nanoceramic Composites.* Master's Thesis
(2002)
- Hainsworth Y. Shin *Cyclic Pressure Modulates the Endothelial Cell Phenotype:
Examination of Pressure-sensitive Mechanotransduction at the
Cellular, Transcriptional, and Molecular Levels.*
Doctoral Thesis (2003).
- Jake D. Ballard *Investigation of Cell Adhesion to Silica Nanoparticle-Decorated
Surfaces and the Associated Protein-Medicated Mechanisms.*
Doctoral Thesis* (2005).
- Aaron J. Dulgar–Tulloch *The Effects of Nanophase Ceramic Materials on the Cellular
Functions of Human Mesenchymal Stem Cells.*
Doctoral Thesis* (2005).

Postdoctoral Research Directed at Rensselaer Polytechnic Institute

- Bradley M. Palmer (1989 - 1990).
- Yu (Lucy) Cong (2009 - 2010)
- Harish Talla (2010-present)

Master's Project at Rensselaer Polytechnic Institute

- Haeran Kim *Effects of Cyclic Pressure on Select Adult Mesenchymal Stem
Cell Functions* (2005).
- Sam Huang *Electrical Stimulation of Osteoblasts Cultured in Three-
Dimensional Scaffolds*

Doctoral Disseration Research in Progress at the University of Texas at San Antonio

Courtney M. Creecy

Master's Thesis Research in Progress at the University of Texas at San Antonio

Ramon E. Coronado

Reynaldo E. Granados

*Co-advisor

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PUBLICATIONS

1. Moore, R., R. Parenti, I.R. Bizios. Effect of freezing and thawing on uptake of amino acids into human erythrocytes. Journal of the Minnesota Academy of Science 37:119-121, 1971.
2. Bizios, R. Metabolism of arachidonic acid by platelets in hyperlipoproteinemia. Ph.D. Thesis, Massachusetts Institute of Technology, Cambridge, MA, 1979.
3. Garcia-Szabo, R.R., F.L. Minnear, R. Bizios, A. Johnson, A.B. Malik. Role of thromboxane in the pulmonary response to pulmonary microembolization. Chest 83S:76S-78S, 1983.
4. Bizios, R., F.L. Minnear, H. van der Zee, A.B. Malik. Effects of cyclooxygenase and lipoxygenase inhibition on lung fluid balance after thrombin. Journal of Applied Physiology: Respiratory Environmental Exercise Physiology 55:462-471, 1983.
5. Garcia-Szabo, R.R., M.B. Peterson, W.D. Watkins, R. Bizios, D.L. Kong, A.B. Malik. Thromboxane generation after thrombin: protective effect of thromboxane synthetase inhibition on lung fluid balance. Circulation Research 53:214-222, 1983.
6. Malik, A.B., J.W. Fenton, A. Johnson, J. Cooper, R. Bizios, F.L. Minnear. Thrombin-induced pulmonary microembolism: mechanisms of lung vascular injury. Chapter in Acute Pulmonary Insufficiency. The Role of Haemostatic, Fibrinolytic and Related Mechanisms. T. Saldeen (editor), Walter de Gruyter & Co., Berlin, pp. 33-61, 1985.
7. Garcia-Szabo, R.R., D.F. Kern, R. Bizios, J.W. Fenton, II, F.L. Minnear, A.B. Malik. Comparison of alpha- and gamma-thrombin on lung fluid balance in anesthetized sheep. Journal of Applied Physiology: Respiratory Environmental Exercise Physiology 57:1375-1383, 1984.
8. Cooper, J.A., S.J. Solano, R. Bizios, J.E. Kaplan, A.B. Malik. Pulmonary neutrophil kinetics after thrombin-induced intravascular coagulation. Journal of Applied Physiology: Respiratory Environmental Exercise Physiology 57:826-832, 1984.
9. Malik, A.B., M. Perlman, J. Cooper, T. Noonan, R. Bizios. Pulmonary microvascular effects of arachidonic acid metabolites and their role in lung vascular injury. Federation Proceedings 44:36-42, 1985.
10. Bizios, R., L. Lai, J.W. Fenton, II, S.A. Sonder, A.B. Malik. Thrombin-induced aggregation of lymphocytes: non-enzymic induction by an hirudin-blocked thrombin exosite. Thrombosis Research 38:425-431, 1985.
11. van der Zee, H., R. Bizios, A.B. Malik. High frequency ventilation. Lack of effect on lung dynamics and prostaglandins. Respiration Physiology 61:31-42, 1985.
12. Cooper, J.A., R. Bizios, A.B. Malik. Pulmonary neutrophil kinetics in sheep: effects of altered hemodynamics. Journal of Applied Physiology 59:1796-1801, 1985.

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PUBLICATIONS (*continued*)

13. Burhop, K.E., H. van der Zee, R. Bizios, J.E. Kaplan, A.B. Malik. Platelet-activating factor: pulmonary vascular response in awake sheep and role of cyclooxygenase metabolites. American Review of Respiratory Disease 134:548-554, 1986.
14. Garcia, J.G.N., A. Siflinger-Birnboim, R. Bizios, P.J. Del Vecchio, J.W. Fenton, II, A.B. Malik. Thrombin-induced increases in albumin transport across cultured endothelial monolayers. Journal of Cellular Physiology 128:96-104, 1986.
15. Heath, C.A., L. Lai, R. Bizios, A.B. Malik. Pulmonary hemodynamic effects of anti-leukocyte serum induced leukopenia. Journal of Leukocyte Biology 39:385-397, 1986.
16. Bizios, R., L. Lai, J.W. Fenton, II, A.B. Malik. Thrombin-induced chemotaxis and aggregation of neutrophils. Journal of Cellular Physiology 128:485-490, 1986.
17. Malik, A.B., S.K. Lo, R. Bizios. Thrombin-induced alterations in endothelial permeability to macromolecules. Annals of the New York Academy of Sciences 485:293-309, 1986.
18. Del Vecchio, P.J., A. Siflinger-Birnboim, J.M. Shepard, R. Bizios, J.A. Cooper, A.B. Malik. Endothelial monolayer permeability to macromolecules. Federation Proceedings 46:2511-2515, 1987.
19. Bizios, R., L. Lai, J.W. Fenton, II, A.B. Malik. Thrombin induced thromboxane generation by neutrophils and lymphocytes: dependence on enzymic site. Journal of Cellular Physiology 132:359-362, 1987.
20. Bizios, R., L.C. Lai, J.C. Cooper, P.J. Del Vecchio, A.B. Malik. Thrombin-induced adherence of neutrophils to cultured endothelial monolayers: increased endothelial adhesiveness. Journal of Cellular Physiology 134:275-280, 1988.
21. Chan, K-L., R. Bizios, A.B. Malik. Thrombin enhances opsonized zymosan induced chemiluminescence of neutrophils. Tissue & Cell 20:13-17, 1988.
22. Del Vecchio, P.J., R. Bizios, L.A. Holleran, T.K. Judge, G.L. Pinto. Inhibition of human scleral fibroblast proliferation with heparin. Investigative Ophthalmology & Visual Science 29:1272-1276, 1988.
23. Zygourakis, K., R. Bizios, P. Markenscoff. Proliferation of anchorage-dependent contact-inhibited cells. I. Development of theoretical models based on cellular automata. Biotechnology and Bioengineering 38:459-470, 1991.
24. Zygourakis, K., P. Markenscoff, R. Bizios. Proliferation of anchorage-dependent contact-inhibited cells. II. Experimental results and comparison to theoretical model predictions. Biotechnology and Bioengineering 38:471-479, 1991.

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PUBLICATIONS (*continued*)

25. Puleo, D.A., L.A. Holleran, R.H. Doremus, R. Bizios. Osteoblast responses to orthopedic implant materials *in vitro*. Journal of Biomedical Materials Research 25:711-723, 1991.
26. Puleo, D.A., R. Bizios. RGDS tetrapeptide binds to osteoblasts and inhibits fibronectin-mediated adhesion. Bone 12:271-276, 1991.
27. Puleo, D.A., R. Bizios. Formation of focal contacts by osteoblasts cultured on orthopedic biomaterials. Journal of Biomedical Materials Research 26:291-301, 1992.
28. Malik, M.A., D.A. Puleo, R. Bizios, R.H. Doremus. Osteoblasts on hydroxylapatite, alumina, and bone surfaces *in vitro*: Morphology during the first two hours of attachment. Biomaterials 13:123-128, 1992.
29. Puleo, D.A., R. Bizios. Mechanisms of fibronectin-mediated attachment of osteoblasts to substrates *in vitro*. Bone and Mineral 18:215-226, 1992.
30. Magro, A., R. Bizios, J. Catalfamo, F. Blumenstock, U. Rudofsky. Collagen-induced rat platelet reactivity is enhanced in whole blood in both the presence and absence of dense granule secretion. Thrombosis Research 68:345-356, 1992.
31. Puleo, D.A., K.E. Preston, J.B. Shaffer, R. Bizios. An examination of osteoblast/orthopedic biomaterial interactions using molecular techniques. Biomaterials 14:111-114, 1993.
32. Acevedo, A.D., S.S. Bowser, M.E. Gerritsen, R. Bizios. Morphological and proliferative responses of endothelial cells to hydrostatic pressure. Role of fibroblast growth factor. Journal of Cellular Physiology:157:603-614, 1993.
33. Redepenning, J., T.K. Schlesinger, E.J., Mechalke, D.A. Puleo, R. Bizios. Osteoblast attachment monitored with a quartz crystal microbalance. Analytical Chemistry 65: 3378-3381, 1993.
34. Garvey, B.T., R. Bizios. A method for transmission electron microscopy investigation of the osteoblast/hydroxyapatite interface. Journal of Applied Biomaterials 5:39-45, 1994.
35. Bizios, R. Osteoblasts: An *in vitro* model of bone-implant interactions. Biotechnology and Bioengineering 43:582-585, 1994.
36. Ishaug, S.L., M.J. Yaszemski, R. Bizios, A.G. Mikos. Osteoblast adhesion on biodegradable polymer substrates. In "Biomaterials for Drug and Cell Delivery," Materials Research Society Proceedings, A.G. Mikos, R. Murphy, H. Bernstein, N.A. Peppas (eds), Materials Research Society, Pittsburgh, pp. 121-126, 1994.

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PUBLICATIONS (*continued*)

37. Dee, K.C, T.T. Andersen, R. Bizios. Cell function on substrates containing immobilized bioactive peptides. In "Biomaterials for Drug and Cell Delivery," Materials Research Society Proceedings, A.G. Mikos, R. Murphy, H. Bernstein, N.A. Peppas (eds), Materials Research Society, Pittsburgh, PA, pp. 115-119, 1994
38. Shin, H.Y., R.D. Iveson, F.A. Blumenstock, R. Bizios. Osteoblast responses to steady shear stress. Chapter in "Cell Mechanics and Cellular Engineering," R.M. Hochmuth, V.C. Mow, F. Guilak, R. Tran-Son-Tay (eds), Springer-Verlag, New York, pp. 95-106, 1994.
39. Ishaug, S.L., M.J. Yaszemski, R. Bizios, A.G. Mikos. Osteoblast function on synthetic biodegradable polymers. Journal of Biomedical Materials Research 28:1445-1453, 1994.
40. Dee, K.C, T.T. Andersen, R. Bizios. Enhanced endothelialization of substrates modified with immobilized bioactive peptides. Tissue Engineering 1:135-145, 1995.
41. Garvey, B.T., R. Bizios. A transmission electron microscopy method for examining the interface between osteoblasts and metal biomaterials. Journal of Biomedical Materials Research 29:987-992, 1995.
42. Squire, M.W., J.L. Ricci, R. Bizios. Analysis of osteoblast mineral deposits on orthopaedic/dental implant metals. Biomaterials 17:725-733, 1996.
43. Dee, K.C, D.C. Rueger, T.T. Andersen, R. Bizios. Conditions which promote mineralization at the bone/implant interface: A model, *in vitro* study. Biomaterials 17:209-215, 1996.
44. Olbrich, K.C., T.T. Andersen, F.A. Blumenstock, R. Bizios. Surfaces modified with covalently-immobilized adhesive peptides affect fibroblast population motility. Biomaterials 17:759-764, 1996.
45. Dee, K.C, R. Bizios. Proactive biomaterials and bone tissue engineering. Biotechnology and Bioengineering 50:438-442, 1996.
46. Ishaug, S.L., R.G. Payne, M.J. Yaszemski, T.B. Aufdemorte, R. Bizios, A.G. Mikos. Osteoblast migration on poly (a-hydroxy esters). Biotechnology and Bioengineering 50:443-451, 1996.
47. Schwartz, E.A., M.L. Leonard, R. Bizios, S.S. Bowser. Analysis and modeling of the primary cilium bending response to fluid shear. American Journal of Physiology (Renal Physiology) 41 272:F132-F138, 1997.
48. Palmer, B.M., R. Bizios. Quantitative characterization of vascular endothelial cell morphology and orientation using Fourier transform analysis. Journal of Biomechanical Engineering:119:159-165, 1997.

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PUBLICATIONS (*continued*)

49. Dee, K.C, T.T. Andersen, R. Bizios. Design and function of novel osteoblast-adhesive peptides for chemical modification of biomaterials. Journal of Biomedical Materials Research 40:371-377, 1998.
50. Schwartz, E.A., R. Bizios, M.E. Gerritsen. "Effects of sustained hydrostatic pressure on the expression of endothelial cell - leukocyte adhesion molecules". Chapter 13, pp. 195-203, in E.K. Weir and R.T. Reeves (eds.), Pulmonary Edema, Futura Publishing Company, Inc., Armonk, NY, 1998.
51. Salwen, S.A., D.H. Szarowski, J.N. Turner, R. Bizios. Three dimensional changes of the cytoskeleton of vascular endothelial cells exposed to sustained hydrostatic pressure. Medical & Biological Engineering & Computing 36:520-527, 1998.
52. Webster, T.J., R.W. Siegel, R. Bizios. An *in vitro* evaluation of nanophase alumina for orthopaedic/dental applications, pp. 273-276 in R.Z. LeGeros and J.P. LeGeros (eds) Bioceramics Volume 11: Proceedings of the 11th International Symposium on Ceramics in Medicine, World Scientific Publishing Co. Pte. Ltd., Singapore 1998.
53. Shin, H.Y., J. Nagatomi, R. Bizios. Responses of bone cells to mechanical stimuli. pp. 285-291 in Biological Mechanisms of Tooth Eruption, Resorption and Replacement by Implants. Z. Davidovitch and J. Mah (eds), Harvard Society for the Advancement of Orthodontics, Boston, MA, USA, 1998.
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258. Tacy, N., R. Bizios, D. Vashishth. Cyclic stain alters the differentiation of human mesenchymal stem cells at the molecular level. Presented at the 2004 Biomedical Engineering Society Meeting, Philadelphia, PA, 2004.
259. Ballard, J.D., A.M. Dell'Acqua-Bellavitis, R. Bizios, R.W. Siegel. Materials with nanoparticle-decorated surfaces for biomedical applications. Presented at the Fall 2004 Materials Research Society (MRS) Meeting, Boston, MA, 2004.
260. Dell'Acqua-Bellavitis, L. M., J. D. Ballard, P.M. Ajayan, R. Bizios, R. W. Siegel. Synthesis of nanoscale materials for neural electrophysiological imaging. Presented at the Fall 2004 Materials Research Society (MRS) Meeting, Boston, MA, 2004.
261. Ballard, J.D., A.M. Dell'Acqua-Bellavitis, R. Bizios, R.W. Siegel. Development and characterization of a novel interface with nanoscale features. Presented at the Spring 2005 Materials Research Society (MRS) Meeting, San Francisco, CA, 2005.
262. Dell'Acqua-Bellavitis, L. M., J. D. Ballard, R. Bizios, R. W. Siegel. Design and fabrication of novel nanotube electrophysiological probes. Presented at the Spring 2005 Materials Research Society (MRS) Meeting, San Francisco, CA, 2005.
263. Dulgar-Tulloch, A. J., R. Bizios, R. W. Siegel. Adhesion and proliferation of human mesenchymal stem cells on nanophase ceramics. Abstract # 507. Presented at the 30th Annual Meeting of the Society for Biomaterials, Memphis, TN, 2005.
264. Dell'Acqua-Bellavitis, L. M., J. D. Ballard, R. Bizios, R. W. Siegel. Nanotube probes for electrophysiological applications. Abstract # 698. Presented at the 30th Annual Meeting of the Society for Biomaterials, Memphis, TN, 2005.
265. Ballard, J.D., A.M. Dell'Acqua-Bellavitis, R. Bizios, R.W. Siegel. Select protein adsorption mediates cell adhesion onto nanoparticle-decorated surfaces. Abstract #63. Presented at the 30th Annual Meeting of the Society for Biomaterials, Memphis, TN, 2005.
266. Janeiro, C., R. Bizios, D. Vashishth. Osteoclasts resorb human cortical bone anisotropically. Presented at the 27th Annual Meeting of the American Society for Bone and Mineral Research, Nashville, TN, 2005.

Rena Bizios

ABSTRACTS AND PRESENTATIONS (*continued*)

267. Unnisa, Z., R. Bizios, D. Vashishth. The role of phosphoaminoacids in osteoclastic bone resorption. Presented at the 27th Annual Meeting of the American Society for Bone and Mineral Research, Nashville, TN, 2005.
268. Dulgar-Tulloch, A.J., R. Bizios, R.W. Siegel. Substrate chemistry and nanophase surface topography modulate mesenchymal stem cell functions. Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
269. Dell'Acqua-Bellavitis, L., J.D. Ballard, R. Bizios, R.W. Siegel. Nanoscale devices for neural electrophysiological applications. Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
270. Janeiro, C., R. Bizios, D. Vashishth. Is the in vitro resorption of human cortical bone anisotropic? Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
271. Ballard, J.D., L.M. Dell'Acqua-Bellavitis, R. Bizios, R.W. Siegel. Modulation of protein adsorption and conformation by nanoscale surface features. Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
272. Kim, H., A. Dulgar-Tulloch, J.D. Ballard, R. Bizios. Mechanisms of adult human mesenchymal stem cell proliferation under cyclic pressure. Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
273. Leventis, K., A. Ostrogorsky, R. Bizios, N. DePaola. Strong static magnetic fields (SSMF): A tool for the regulation of mammalian cell function. Presented at the 2005 Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD, 2005.
274. Dell'Acqua-Bellavitis, L.M., J.D. Ballard, R. Bizios, R.W. Siegel. Hierarchical micro- and nanoscale devices for neural electrophysiological applications. Presented at the 2005 Materials Research Society Fall Meeting, Boston, MA, 2005.
275. Ballard, J.D., L.M. Dell'Acqua-Bellavitis, R. Bizios, R.W. Siegel. Nanoscale surface features affect protein adsorption and conformation and subsequent cell adhesion to model surfaces. Presented at the 2005 Materials Research Society Fall Meeting, Boston, MA, 2005.
276. Dulgar-Tulloch, A.J., R. Bizios, R.W. Siegel. Chemistry and nanophase topography: effects on mesenchymal stem cell functions. Presented at the 2005 Materials Research Society Fall Meeting, Boston, MA, 2005.
277. Leventis, K., A. Ostrogorsky, R. Bizios, N. DePaola. Human osteoblast gene expression and proliferation in strong magnetic fields. Presented at the 2007 Annual Fall Meeting of the Biomedical Engineering Society, Los Angeles, CA, 2007.

Rena Bizios

ABSTRACTS AND PRESENTATIONS (*continued*)

278. Mora, M.F., J. Felhofer, G. Gut, J. Wehmeyer, R. Bizios, A. Ayon, C. D. Garcia. Micro fluidics meet surfaces: Analysis of biologically relevant compounds using microchips, capillary electrophoresis, and biosensors. To be presented at the 50th Annual Rocky Mountain Conference on Analytical Chemistry, Breckenridge, CO, 2008.
279. Garcia, C.D., M.F. Mora, C. Giacomelli, J. Wehmeyer, R. Bizios, A. Ayon. Small is better: microfluidics meet the surface. Presented at the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Meeting, Reno, NV, 2008.
280. Garcia, C.D., M.F. Mora, J. Felhofer, G. Guy, C. Giacomelli, J. Wehmeyer, R. Bizios, A. Ayon. Smaller is Better: A Tale About Surfaces and Microfluidics. Presented at the XVII Simpósio Brasileiro de Eletroquímica e Eletroanalítica, Fortaleza, Brazil, 2009.
281. Felhofer, J., F.M. Mora, J. Wehmeyer, R. Hackworth, R. Kotha, R. Bizios, A. Ayon, C.D. Garcia. Big Advantages of Small Things: Nanomaterials and Analytical Chemistry. Presented at the COS Research Conference at UTSA, San Antonio, TX, 2009.
282. Creecy, C.M., R. Bizios. Human stem cell differentiation and functions in response to electric stimulation in vitro. Presented at the BMES Annual Fall Meeting, Pittsburgh, PA, 2009.
283. Wehmeyer, J.L., R. Bizios. Effect of pressure on endothelial cell proliferation when cultured in a three-dimensional hydrogel. Presented at the BMES Annual Fall Meeting, Pittsburgh, PA, 2009.

Rena Bizios

INVITED LECTURES/SEMINARS

- Department of Physiology, New York Medical College, Valhalla, NY (March 16, 1987).
- Center for Biochemical Engineering, Duke University, Durham, NC (March 31, 1988).
- Chemical Engineering Department, University of Puerto Rico, Mayaguez, PR (June 27, 1988).
- Department of Pathology/Biomaterials, University of Medicine and Dentistry of New Jersey, Piscataway, NJ (November 20, 1989).
- Tekmat Corporation, Ashland, MA (November 21, 1989).
- Department of Chemical Engineering, Tufts University, Medford, MA (April 23, 1990).
- Miles, Inc., West Haven, CT (June 4, 1990).
- Zimmer, Inc., Warsaw, IN (June 28, 1990).
- Pulmonary Research Group, School of Medicine, Indiana University, Indianapolis, IN (June 29, 1990).
- MatTek Corporation, Ashland, MA (July 18, 1990).
- Creative Biomolecules, Hopkinton, MA (August 17, 1990).
- Pharmacia, Experimental Medicine-La Jolla, San Diego, CA (September 5, 1990).
- School of Engineering Fischbach Lecture Series, Manhattan College, Riverdale, NY (February 27, 1991).
- Department of Applied Mechanics and Engineering Sciences, Bioengineering, University of California, San Diego, La Jolla, CA (November 15, 1991).
- Department of Orthopaedics, Rhode Island Hospital, Providence, RI (March 11, 1992).
- Center for Biophysics, Rensselaer Polytechnic Institute, Troy, NY (March 31, 1992).
- Biomaterial Seminarium, University of Göteborg (Anatomiska Institutionen, Institutionen för Handikappforskning, Histologiska Institutionen) and Chalmers University of Technology (Institutionen för Fysik), Göteborg, Sweden (May 5, 1992).
- Center for Biophysics, Rensselaer Polytechnic Institute, Troy, NY (December 1, 1992).
- College of St. Rose, Albany, NY (January 27, 1993).

Rena Bizios

INVITED LECTURES/SEMINARS (*continued*)

- Miles, Inc., West Haven, CT (June 9, 1993).
- Department of Chemical Engineering, Rensselaer Polytechnic Institute, Troy, NY (February 9, 1994).
- Department of Chemical Engineering, Rice University, Houston, TX (March 16, 1995).
- Laboratory for Tumor Biology, Department of Radiation Oncology, Massachusetts General Hospital, Boston, MA (December 14, 1995).
- College of Dentistry, New York University, New York, NY (October 10, 1996).
- Bard Vascular Systems Division, Chelmsford, MA (September 11, 1997).
- Institut des Biomatériaux du Québec, Pavillon Saint-François d'Assise, Centre Hospitalier Universitaire de Québec, Québec (Québec), Canada (September 19, 1997).
- Department of Bioengineering & Institute for Biomedical Engineering, University of California, San Diego, La Jolla, CA (April 22, 1998).
- Biomedical Engineering Institute, University of Minnesota, Minneapolis, MN (October 6, 1998).
- School of Chemical Engineering, Purdue University, West Lafayette, IN (January 19, 1999).
- Departments of Biomedical Engineering and of Chemical Engineering, Tulane University, New Orleans, LA (April 16, 1999).
- College of Dentistry, New York University, New York, NY (May 11, 1999).
- Lehrstuhl für Pharmazeutische Technologie, Universität Regensburg, Regensburg, Germany (July 13, 1999).
- School of Pharmacy, University of Wisconsin-Madison, Madison, WI (September 3, 1999).
- School of Dentistry, University of Michigan, Ann Arbor, MI (February, 24, 2000).
- Department of Oral Biology, University of Medicine & Dentistry of New Jersey, Newark, NJ (March 14, 2000).
- Center for Cardiovascular Sciences, Albany Medical College, Albany, NY (September 22, 2000).

Rena Bizios

INVITED LECTURES/SEMINARS (*continued*)

- Department of Chemical Engineering, State University of New York at Buffalo, Buffalo, NY, (September 27, 2000).
- Department of Biomedical Engineering, University of California, San Diego, La Jolla, CA, (November 14, 2000).
- Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, Troy, NY, (January 25, 2001).
- Johnson & Johnson Corporate Biomaterials Center, Somerville, NJ, (February 13, 2001).
- Department of Biomedical Engineering, Duke University, Durham, NC (March 9, 2001).
- Department of Orthopaedics, Medical School of Larissa, Larissa, Greece (June 9, 2001).
- Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA (November 16, 2001).
- Department of Biomedical Engineering, University of California at Davis, Davis, CA (March 11, 2002).
- Bioscience Colloquium, Chalmers University of Technology, Göteborg, Sweden (October 1, 2002).
- Physics and Engineering Physics Colloquium, Chalmers University of Technology, Göteborg, Sweden (October 17, 2002).
- Biomaterials Research Center, Göteborgs University, Göteborg, Sweden (November 7, 2002).
- Laboratoire de Recherches Orthopédiques, U.P.R.E.S. - A. – C.N.R.S. 7052, Université Denis Diderot – Paris VII, Paris, France (April 14, 2003).
- Laboratoire de Recherches Orthopédiques, U.P.R.E.S. - A. – C.N.R.S. 7052, Université Denis Diderot – Paris VII, Paris, France (May 6, 2003).
- Department of Bioengineering and Neuroscience, Syracuse University, Syracuse, NY (October 31, 2003).
- Department of Chemical, Biomedical and Materials Engineering, Stevens Institute of Technology, Hoboken, NJ (November 12, 2003).
- Laboratoire de Recherches Orthopédiques, U.P.R.E.S. - A. – C.N.R.S. 7052, Université Denis Diderot – Paris VII, Paris, France (November 27, 2003).

Rena Bizios

INVITED LECTURES/SEMINARS (*continued*)

- Research Service, Stratton Veterans Administration Medical Center, Albany, NY (February 5, 2004).
- Department of Chemical and Department of Mechanical Engineering, University of Puerto Rico, Mayagüez, Puerto Rico (April 1, 2004).
- GE Global Research Center, Niskayuna, NY (March 8, 2004).
- Department of Materials Science and Engineering, University of Connecticut, Storrs CT (September 22, 2004).
- Department of Biology, Minority Biomedical Research Support (MBRS) and Minority Access to Research Careers (MARC) Programs, University of Texas at San Antonio, San Antonio, TX (October 1, 2004).
- Boston Scientific Corporation, Natick, MA (December 13, 2004).
- Laboratoire de Recherches Orthopédiques, U.P.R.E.S. - A. – C.N.R.S. 7052, Université Denis Diderot – Paris VII, Paris, France (June 9, 2005).
- School of Dentistry, University of Missouri in Kansas City (UMKC), Kansas City, MO (October 7, 2005).
- College of Dentistry, New York University, New York, NY (November 17, 2005).
- Central Texas Chapter of the IEEE Engineering in Medicine and Biology Society, San Antonio, TX (September 21, 2006).
- Department of Biomedical Engineering, The University of Texas at Austin (October 25, 2006).
- Department of Biomedical Engineering, Clemson University, Clemson, SC (February 23, 2007).
- Department of Chemical, Biological and Materials Engineering, The University of Oklahoma, Norman, OK (October 25, 2007).
- Department of Chemical and Department of Biomedical Engineering, Wayne State University, Detroit, MI (November 15, 2007).
- Laboratoire de Recherches Orthopédiques, U.P.R.E.S. - A. – C.N.R.S. 7052, Université Denis Diderot – Paris VII, Paris, France (January 10, 2008).
- Department of Chemical Engineering, University of West Virginia, Morgantown, WV (October 17, 2008)

Rena Bizios

INVITED LECTURES/SEMINARS (*continued*)

- Kinetic Concepts, Inc. (KCI), San Antonio, TX (November 24, 2008).
- University of Kentucky Graduate School and Center for Biomedical Engineering, University of Kentucky, Lexington, KY (May 4, 2009).
- Department of Materials Science and Engineering, The University of Texas at Arlington, Arlington, TX (October 30, 2009).
- Department of Biology, The University of Texas at San Antonio, San Antonio, TX (April 19, 2010).
- Seminars in Translational Research (STRECH), The University of Texas Health Science Center at San Antonio, San Antonio, TX (to be presented March 23, 2011)
- Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL (to be presented April 8, 2011).
- Department of Bioengineering, University of California at Riverside, Riverside, CA (to be presented April 20, 2011).

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES

- Bizios, R. (speaker), P.J. Del Vecchio, A.B. Malik. *Transport properties of cultured vascular endothelial monolayers*. Presented at the 40th Annual Conference on Engineering in Medicine and Biology, Niagara Falls, NY, 1987.
- Bizios, R. (speaker), R.S. Cargill, R.D. Iveson, L.A. Holleran. *Cultured endothelial monolayers: A model for transport studies*. Presented at the International Symposium on Engineering Approaches to Atherosclerosis, World Congress on Medical Physics and Biomedical Engineering, San Antonio, TX, 1988.
- Sloan, C.M., S.S. Bowser, R. Bizios (speaker). *Endothelial cell responses to sustained normal stresses*. Workshop on "Mechanical Stress Effects on Vascular Cells." Presented at the "Mechanical Stress Effects on Vascular Cells" Workshop, Atlanta, GA, 1991.
- Puleo, D.A., R. Bizios (speaker). Mechanisms of osteoblast adhesion to biomaterials. Presented at the Fall Meeting of the Materials Research Society, Boston, MA, 1991.
- Bizios, R. (speaker). *Mechanisms of osteoblast adhesion to substrates*. Presented at the Cells and Materials Symposium of the 1993 Scanning Microscopy Meeting, Los Angeles, CA, 1993.
- Bizios, R. (speaker). *In vitro studies of osteoblast interactions with implant biomaterials*. Presented at the Biological Mechanisms of Tooth Eruption, Resorption and Replacement by Implants International Conference, Danvers, MA, 1993.
- Bizios, R. (speaker). *Cell function on surfaces containing immobilized, bioactive peptides*. Presented at the Biomaterials for Drug and Cell Delivery Symposium of the 1993 Fall Materials Research Society Meeting, Boston, MA, 1993.
- Shin, H.Y., F.A. Blumenstock, R. Bizios (speaker). *Osteoblast responses to steady shear stress*. Presented at the Symposium on Cell Mechanics and Cellular Engineering, Second World Congress of Biomechanics, Amsterdam, The Netherlands, 1994.
- Schwartz, E.A. (speaker), R. Bizios, M.E. Gerritsen. *Effects of sustained hydrostatic pressure on the expression of adhesion molecules by human vascular endothelial cells*. Presented at the Mechanical Force Regulation on Genes Minisymposium, Experimental Biology `96 Meeting, Washington, DC, 1996.
- Bizios, R. (speaker). *Molecular responses of endothelial cells to normal stresses*. Presented at the Scientific Conference on The Pathogenesis and Treatment of Pulmonary Edema, Eighth Pulmonary Circulation Conference, American Heart Association/American Thoracic Society/The Pulmonary Circulation Foundation, Sedalia, CO, 1996.
- Bizios, R. (speaker). *Conditions that optimize bone cell interactions with materials*. Presented at the Surfaces in Biomaterials `96 Symposium, Phoenix, AZ, 1996.

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- Dee, K.C. (speaker), T.T. Andersen, R. Bizios. *Immobilization of Select Peptides to Control Osteoblast Adhesion*. Presented at the BIOSURF. Biomaterials: Surfaces & Biocompatibility, Eidgenössische Technische Hochschule, Zürich, Switzerland, 1997.
- Bizios, R. (speaker). *Bone Cell Responses to Mechanical Perturbations*. Presented at the Biological Mechanisms of Tooth Eruption, Resorption, and Replacement by Implants International Conference, Toledo, Spain, 1997.
- Bizios, R. (speaker). *Proactive Biomaterials*. Presented at the 24th Annual Meeting of the Society for Biomaterials, San Diego, CA, 1998.
- Bizios, R. (speaker). *Proactive Biomaterials for Tissue Engineering Applications*. Presented at 2nd Annual NMHCC Bio/Technology Conference on Orthopaedic Tissue Engineering, Boston, MA, 1998.
- Schwartz, E.A., R. Bizios, M.E. Gerritsen (speaker). *Endothelial Cell Responses to Sustained Pressure*. Presented at the 1999 Lifeline Foundation Research Initiatives Conference, "Movers and Shakers in the Vascular Tree-Hemodynamic and Biomechanical Factors in Blood Vessel Pathology", Bethesda, MD, 1999.
- Bizios, R. (keynote speaker). *Design and Evaluation of Proactive Biomaterials*. Presented at The NIST International Symposium on Advanced Materials with Biomedical Applications, Gaithersburg, MD, 1999.
- Bizios, R. (speaker). *Cell Adhesion and Adhesive Receptors*. Presented at the Advances in Tissue Engineering short course, Rice University, Houston, TX, 1999.
- Bizios, R. (speaker). *Cell Interactions with Patterned Surfaces*. Presented at the Nanobiotechnology Interfacing the Physical and Biological Worlds Symposium, Albany, NY, 2000.
- Schwartz, E. A., M.E. Gerritsen, R. Bizios (speaker). *Endothelial Cell Responses to Sustained Pressure*. Presented at the World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, 2000.
- Bizios, R. (speaker). *Synthesis and Evaluation of Nanophase Materials for Orthopaedic/Dental Applications*. Presented at the 5th New Jersey Symposium on Biomaterials Science, Somerset, NJ, 2000.
- Bizios, R. (speaker). *New Directions for Biomaterials Research*. Presented at the "Frontiers of Materials Research" Symposium at the Fall 2000 Materials Research Society (MRS) Meeting, Boston, MA, 2000.

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- Bizios, R. (speaker), D.W. Metzger, S. Salon, R.W. Siegel, R.H. Doremus, P. Ajayan, L. Schadler. "*Strategies for Bone Tissue Engineering: Novel Material Formulations and Select Biophysical Stimuli*". Presented at the Biotechnology in the Capital Region. Part I: Imaging and Bioengineering, Rensselaerville, NY, 2001.
- Bizios, R. (speaker). *Design and Evaluation of Biomaterials that Modulate Biological Activity*. Presented at the International and American Association for Dental Research (IADR) Meeting, San Diego, CA, 2002.
- Bizios, R. (speaker), R.W. Siegel, P.M. Ajayan, R.H. Doremus. *Nanocomposite Materials for Orthopaedic Applications*. Presented at the "Polymers in Orthopaedics: Resorbable and Nanostructured Polymers" Symposium at the 224th National Meeting of the American Chemical Society, Boston, MA, 2002.
- Bizios, R. (speaker), R.W. Siegel, P.M. Ajayan, R.H. Doremus. *Nanocomposites for Orthopaedic/Dental Applications*. Presented at the NSF-EC Nanomaterials Workshop: From Nanomaterials to Nanotechnology, Cambridge, MA, 2002.
- Bizios, R. (speaker). *Nanophase Materials for Orthopaedic/Dental Applications*. Presented at the International Symposium on "Applications of Nanotechnology for Biomaterials and Artificial Organs", Tokyo, Japan, 2003.
- Bizios, R. (speaker). *Synthesis and Evaluation of Nanocomposite Materials for Orthopaedic/Dental Applications*. Presented at the European Congress on Advanced Materials and Processes, Lausanne, Switzerland, 2003.
- Bizios, R. (speaker). *Tissue Engineering*. Presented at the "2003 Whitney Symposium on Bionics", GE Global Research Center, Niskayuna, NY, 2004.
- Bizios, R. (speaker), R.W. Siegel, P.M. Ajayan, L.S. Schadler. *Nanostructured Materials for Orthopaedic/Dental Applications*. Plenary presentation at the 133rd TMS Annual Meeting & Exhibition, Charlotte, NC, 2004.
- Bizios, R. (speaker). *Strategies for Bone Tissue Engineering: The Role of Select Biophysical Stimuli*. Presented at the Regenerate 2004: Tissue Engineering the Human Body, Seattle, WA, 2004.
- Bizios, R. (speaker). *Strategies for Bone Tissue Engineering: Novel Material Formulations and Select Biophysical Stimuli*. Presented at the Société de Biomécanique-Gamac. Congrès 2004, Paris, France, 2004.
- Bizios, R. (speaker). *Cellular Responses to Select Biophysical Stimuli*. Presented at the 4th International Technology Transfer Days: Biomaterials 2004, Erfurt, Thüringen, Germany, 2004.

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- Bizios, R. (speaker). *Mammalian Cell Interactions with Nanophase Materials*. Presented at the “Applications of Micron and Nanoscale Materials in Biology and Medicine” Symposium at the Fall 2004 Materials Research Society (MRS) Meeting, Boston, MA, 2004.
- Bizios, R. (speaker). *Bone Cell Responses to Select Biophysical Stimuli*. Presented at the “Current Concepts & Advancements in the Management of Knee Disorders” International Symposium, Larissa, Greece, 2004.
- Bizios, R. (speaker). *Strategies for Bone Tissue Engineering: Material Substrates, Growth Factors and Select Biophysical Stimuli*. Presented at the “Current Concepts & Advancements in the Management of Knee Disorders” International Symposium, Larissa, Greece, 2004.
- Bizios, R. (speaker). *Challenges for Tissue Engineering Applications in Tissue Repair*. Presented at the 2nd International Conference on Tissue Engineering, Crete, Greece, 2005.
- Bizios, R. (speaker). *Design Strategies for the Next Generation of Nanophase Materials for Biomedical Applications*. Presented at the “Next Generation Biomaterials” Symposium at the Materials Science & Technology 2005 Conference, Pittsburgh, PA, 2005.
- Bizios, R. (speaker). *Mammalian Cell Function on Nanostructured Materials*. Presented at the “Whitaker Nanobioengineering Symposium: Nanotechnology in Medicine and Biology”, The Associated Nanotechnology Congress Meeting, Houston, TX (October 11, 2005).
- Bizios, R. (speaker). *Mammalian Cell Function on Nanostructured Materials*. Presented at the “Whitaker Nanobioengineering Symposium: Nanotechnology in Medicine and Biology”, The Associated Nanotechnology Congress Meeting, Houston, TX (October 11, 2005).
- Bizios, R. (speaker). *Design and Evaluation of Biomaterials to Induce Biological Activity*. Presented at the “Biological Responses to Central nervous System Implants” Research Symposium”, Biomimetic MicroElectronic Systems Center, University of Southern California, Los Angeles, CA (January 27, 2006).
- Bizios, R. (speaker). *Design Strategies for the Next Generation of Nanophase Materials for Biomedical Applications*. Presented at the “23rd Annual Houston Conference on Biomedical Engineering Research”, The Houston Society for Engineering in Medicine and Biology, Houston, TX (February 9, 2006).
- Bizios, R. (speaker). *Mammalian Cell Interactions on Nanostructured Materials*. Presented at the “Nanomaterials Applications in Orthopaedics” Workshop at the 52nd Meeting of the Orthopaedic Research Society, Chicago, IL (March 20, 2006).
- Bizios, R. (speaker). *Vascular Cell Responses to Pressure*. Presented at the “Symposium on the 65th Birthday of Prof. Clark K. Colton”, at the 2006 Annual Meeting of the American Institute of Chemical Engineers (AIChE), San Francisco, CA (November 14, 2006).

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- Bizios, R. (speaker). *Nanophase Materials for Biomedical Applications*. Presented at the “Biomaterials from 2D to 3D to Larger than Life” Symposium on the Future of Biomaterials to celebrate Buddy Ratner’s 60th Birthday, Maui, Hawaii (December 17, 2006).
- Bizios, R. (speaker). *Design of Material Substrates to Modulate Biological Activity*. Presented at the First “Creating International Cooperation Teams of Excellence in the Emerging Biomaterials Surface Research” (INCOMAT) Meeting, Erfurt, Germany (May 11, 2007).
- Bizios, R. (speaker). *Nanophase Materials for Biomedical Applications*. Presented at the “omics & Nanotechnology in Biomedicine” International Symposium, Institute of Biomedical Research & Technology, School of Health Sciences, University of Thessalia, Larissa, Greece (December 1, 2007).
- Bizios, R. (speaker). *Materials for Cell Targeting Pertinent to New Tissue Formation and Function*. Presented at the Second Regional Bioengineering Day, University of Kansas Medical Center, Kansas City, KS (December 8, 2007).
- Bizios, R. (speaker). *Challenges and Opportunities in Tissue Engineering, Genetic Engineering and Regenerative Medicine*. Presented at the 25th Annual Houston Conference on Biomedical Engineering Research, The Houston Society of Engineering in Medicine and Biology (HSEMB), Houston, TX (February 8, 2008).
- Gibson, C.C., D.A. Puleo and R. Bizios (speaker). *The Role of Growth Factors and Soluble Mediators in Bone Tissue Engineering*. Presented at the Third International Conference on Tissue Engineering, Rhodes, Greece (September 22, 2008).
- Bizios, R. (speaker). *Biomimetic Extracellular Matrix Analogue Coatings*. Presented at the 5th International Technology Transfer Days: Biomaterial 2009, Erfurt, Germany (February 19, 2009).
- Bizios, R. (speaker). *Nanophase Materials for Medical Implant Applications: Potential, Challenges and Opportunities*. Presented at the 2nd International Conference from Nanoparticles & Nanomaterials to Nanodevices & Nanosystems, Rhodes, Greece (June 30, 2009).
- Bizios, R. (speaker). *The Tissue/Hydroxyapatite Implant Interface: A Cellular Perspective*. Presented at the 2nd Biomaterials Symposium, Queen Mary University of London, London, UK (November 30, 2009).
- Bizios, R. (Invited Plenary speaker). *Nanostructured Biomaterials for Implant Applications: Potential, Challenges and Future Directions*. Presented at the Nanotheranostics: Fabrication and Safety Concerns. Ayia Napa, Cyprus (April 28, 2010).
- Bizios, R. (speaker). *Nanostructured Biomaterials for Implant Applications: Potential, Challenges and Future Directions*. Presented at the XIX International Materials Research Congress (IMRC) 2010, Symposium 21: Nanomaterials for Biomedical Applications Symposium. Cancun, Mexico (August 16, 2010).

Rena Bizios

INVITED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- Bizios, R. (speaker) *Nanostructured Biomaterials: Potential, Challenges and Needs*. Presented at the “Next Generation Biomaterials: Nanobiomaterials” Symposium at the Materials Science & Technology 2010 Conference and Exhibition (MS&T’10), Houston, TX, (October 19, 2010).
- Bizios, R. (speaker). *Nanostructured Ceramics: Potential, Challenges and Opportunities for Implant Applications*. Presented at the Next Generation Bioceramics Symposium at the 35th International Conference and Exhibition on Advanced Ceramics and Composites (ICACC’11). Daytona Beach, FL. (January 26, 2011).
- Bizios, R. (speaker). *Strategies to Promote Mammalian Cell Functions Pertinent to Tissue Formation at the Tissue-Implant Interface*. Presented at the TMS2011 Annual Meeting & Exhibition. San Diego, CA (March 1, 2011).
- Bizios, R. (speaker). “Biomaterial Days at Texas A&M”, Texas A&M University, College Station, TX (to be presented May 16, 2011).
- Bizios, R. (speaker). *Strategies to Promote Cell Functions Pertinent to New Tissue Formation: The Role of Biochemical and Biophysical Stimuli*. 4th International Conference on Tissue Engineering. Crete, Greece (to be presented June, 2011).

Rena Bizios

TECHNICAL SYMPOSIA ORGANIZED AND CHAIRED AT NATIONAL CONFERENCES

- "Transport Phenomena at the Blood Vessel Wall." American Institute of Chemical Engineers 1987 Annual Meeting, New York, NY, November 1987 (with J.A. Frangos).
- "Cellular Responses to Stress and Injury." American Institute of Chemical Engineers 1989 Annual Meeting, San Francisco, CA, November 1989 (with J.A. Frangos).
- "Tissue Engineering." American Institute of Chemical Engineers 1990 Annual Meeting, Chicago, IL, November 1990 (with J.A. Frangos).
- "Cell Engineering." American Institute of Chemical Engineers 1990 Annual Meeting, Chicago, IL, November 1990 (with J.A. Frangos).
- "Molecular and Cellular Approaches in Bioengineering: Cell Responses to Different Stimuli." American Institute of Chemical Engineers 1991 Annual Meeting, Los Angeles, CA, November 1991 (with E.T. Papoutsakis).
- "Mechanisms of Cell-Biomaterial Interactions I." American Institute of Chemical Engineers 1992 Annual Meeting, Miami, FL, November 1992 (with K. Leong).
- "Biomaterials for Repair or Replacement of Tissues." American Institute of Chemical Engineers 1993 Annual Meeting, St. Louis, MO, November 1993 (with A.G. Mikos).
- "Environmental Effects on Animal Cells." American Institute of Chemical Engineers 1993 Annual Meeting, St. Louis, MO, November 1993 (with E.T. Papoutsakis).
- "Gene Therapy and Cell Transplantation." American Institute of Chemical Engineers 1994 Annual Meeting, San Francisco, CA, November 1994 (with L.T. Baxter).
- "Cellular Engineering in Bone," 1995 Annual Fall Meeting of the Biomedical Engineering Society, Boston, MA, October 1995 (with D.A. Puleo).
- "Cell Transplantation and Gene Therapy," 5th World Congress of Chemical Engineering, San Diego, CA, July 1996.
- "Biomolecular Modification of Materials," Society for Biomaterials 1999 Meeting, Providence, RI, April 1999, (with D. Tirrell).
- "*In Vitro* Endothelial and Epithelial Cell Attachment." The 17th Annual Meeting of the Society for Biomaterials, Scottsdale, AZ, May 1991 (with G.L. Picciolo).
- "Cell-Biomaterial Interactions." The 21st Annual Meeting of the American Association for Dental Research, Boston, MA, March 1992 (with J.C. Keller).

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TECHNICAL SYMPOSIA CHAIRED AT NATIONAL/INTERNATIONAL CONFERENCES

- "Cell and Tissue." 1992 Annual Fall Meeting of the Biomedical Engineering Society, Salt Lake City, UT, October 1992.
- "Current Concepts in Cell Adhesion." The 1993 ASME/AIChE/ASCE Summer Bioengineering Conference, Breckenridge, CO, June 1993 (with L.V. McIntire)
- "Proteins and Cells I." The 20th Annual Meeting of the Society for Biomaterials, Boston, MA, April 1994 (with J.A. Hubbell).
- "Proteins and Cells at Interfaces I." The 21st Annual Meeting of the Society for Biomaterials, San Francisco, CA., March 1995 (with J. Woodard).
- "Bone-Surface Interactions." Fifth World Biomaterials Congress, Toronto, Canada, June 1996 (with S. Szmuckler-Moncler).
- "Hydrogels and Extracellular Matrix Gels." American Institute of Chemical Engineers 1996 Annual Meeting, Chicago, IL, November 1996 (with A.G. Mikos).
- "Excellence Session II." The 23rd Annual Meeting of the Society for Biomaterials, New Orleans, LA, May 1997 (with K. Kottke-Marchant).
- "The Role of Physical Forces in Remodeling of Systemic and Pulmonary Microvessels." The 1997 Annual Fall Meeting of the Biomedical Engineering Society, San Diego, CA, October 1997 (with T.C. Skalak).
- "Biomaterials and Tissue Engineering." The 10th International Conference on Mechanics in Medicine and Biology, Honolulu, HI, March 1998 (with P.X. Ma).
- "Cell and Protein Interactions with Orthopaedic Biomaterials." The 24th Annual Meeting of the Society for Biomaterials, San Diego, CA, April 1998 (with K. C. Dee).
- "Student Oral Presentations". Bioceramics 11: The 11th International Symposium on Ceramics in Medicine, New York, NY, November 1998 (with A. Yii-Urpo).
- "Molecular and Cellular Engineering". Minisymposium at the First Joint Meeting of BMES and EMBS, Atlanta, GA, October 1999.
- "Cells at Surfaces". The First Joint Meeting of BMES and EMBS, Atlanta, GA, October 1999.
- "Orthopaedic Biomaterials: Bone Formation/Bone Substitutes". Sixth World Biomaterials Congress, Kamuela, HI, May 2000 (with T. Bauer and K. Ushio).

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TECHNICAL SYMPOSIA CHAIRED AT NATIONAL/INTERNATIONAL CONFERENCES (*continued*)

- “Protein and Cell Interactions with Biomaterials”. 27th Annual Meeting of the Society for Biomaterials, St. Paul, MN, April 2001 (with C. Frondoza and C. Siedlecki).
- “Biomedical II”. Eight International Conference on Composites Engineering, Tenerife, Spain, August 2001.
- “Protein-Mediated Cell Behavior on Matrices for Tissue Engineering. Symposium II”. 28th Annual Meeting of the Society for Biomaterials, Tampa, FL, April 2002 (with J. Tschopp).
- “Cellular and Molecular Aspects of Tissue Biomechanics”, Biomaterials: Biocompatibility and Tissue Engineering Gordon Research Conference, Plymouth, NH, July 2003.
- “Bone”. Regenerate 2004: Tissue Engineering the Human Body, Seattle, WA, June, 2004.
- “Nanotechnology & Biomaterials Symposium IV – Tissue & Cellular Engineering”, 30th Annual Meeting of the Society for Biomaterials, Memphis, TN, April, 2005 (with S. E. Sakiyama-Elbert).
- “Nano-Bio Interface”. 23rd Annual Houston Conference on Biomedical Engineering, Research The Houston Society for Engineering in Medicine and Biology, Houston, TX, February 2006 (with K. F. Kelly).
- “Tissue Engineering Strategies I”, 3rd International Conference on Tissue Engineering, Rhodes, Greece, 2008.
- First Morning Session (on February 20, 2009), 5th *International Technology Transfer Days: Biomaterial 2009*, Erfurt, Germany, 2009.
- Afternoon Session (on November 30, 2009), 2nd Biomaterials Symposium, Queen Mary University of London, London, UK, 2009.
- “Next Generation Biomaterials: Ceramic Bioamaterials III”, Materials Science & Technology 2010 (MS&T’10) Conference and Exhibition. Houston, TX (Co-chaired with Antony Tomsia on October 19, 2010).
- “Stem Cells and Regenerative Medicine”, Session III at the San Antonio Stem Cell Conference, San Antonio, TX (Co-chaired with Steve Wolf on October 20, 2010).

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SUMMARY OF TEACHING EXPERIENCE

Courses Taught at Rensselaer Polytechnic Institute (year)

- 20.201. Engineering I (1981)
- 20.201. Engineering Modeling and Design (1982; 1983; 1984; 1986)
- 20.210 . Thermodynamics I (1985; 1989)
- 20.220. Lumped Parameter Systems (1985)
- 20.243. Introduction to Heat Transfer (1987; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1997; 1998; 1999)
- 31.425. Hematology and Hemodynamics for Engineers (1981; 1982; 1985)
- 31.425. Hemodynamics (1986; 1988)
- 31.494. Studies in Biomedical Engineering (1981; 1983; 1991; 1992; 1993)
- 31.496. Transport Phenomena in Living Systems (1983)
- 31.4962/36. 4962 Chemical Kinetics in Biomedical and Materials Engineering* (1984)
- 31.694 Studies in Biomedical Engineering (1981; 1983; 1984; 1985; 1990; 1993; 1994; 1995)
- 31.423. Transport Phenomena in Medicine and Biology (1987; 1989)
- 31.424. Tissue-Biomaterial Interactions (1989; 1990; 1991; 1992;1993; 1994; 1995; 1997; 1998; 1999)
- 31.624/BMED-6240 The Tissue-Implant Interface (1990**; 1991**; 1992; 1993; 1994; 1996)
- BMED-6240 The Tissue-Implant Interface (2000; 2003)
- BMED-4240 Tissue-Biomaterial Interactions (2000; 2001; 2002; 2004;2005)
- ENGR-2250. Thermal and Fluids Engineering I (2001; 2002; 2003; 2004)

New Courses Developed at Rensselaer Polytechnic Institute

- 31.425. Hemodynamics
- 31.423. Transport Phenomena in Medicine and Biology
- 31.4962. Chemical Kinetics in Biomedical Engineering*
- 31.424/ BMED-4240 Tissue-Biomaterial Interactions
- 31.624/BMED-6240 Tissue-Implant Interfaces**

*Co-taught with Robert H. Doremus

**Co-taught with John B. Brunski

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SUMMARY OF TEACHING EXPERIENCE (*continued*)

Courses Taught at the Chemical Engineering Department of Rice University (year)

- 401a. Transport Phenomena (1987; part time)
- 601b. Fluid Mechanics and Transport: Hemorheology (1988)
- Process Design (senior, capstone-design ChemE course; 1996; part time)

Short Courses

- Teaching Faculty in Advances in Tissue Engineering (Organizer: A.G. Mikos), Rice University, Houston, TX (1999; 2007; 2008, 2009, 2010).
- Teaching Faculty in Advanced Biomaterials (Organizers: F.J. Monteiro, M. Barbosa, P. Granja), University of Porto, Porto, Portugal (2001).
- Teaching Faculty in Material-Cell Interactions for the Development of Biocompatible Medical Devices (Organizers: P. Thomsen, J. Gold, C. Gretzer, C. Larsson), Chalmers University of Technology and Göteborg University, Ellös, Sweden (2001).
- Teaching Faculty in Dental and Craniofacial Bioengineering (Director: P. Spencer; Co-Directors: M. Bilgen, J.L. Katz, A. Misra, L. Friis, Y. Wang), University of Missouri-Kansas City, Kansas City, MO (2007).

Courses Taught at the University of Texas at San Antonio (year)

- BME.6923.001. Tissue Engineering (2006; 2007; 2008; 2009, 2010)
- BME.6993.001. Tissue-Biomaterial Interactions (2007; 2008; 2009, 2010, 2011)

New Courses Developed at the University of Texas at San Antonio

- BME.6923.001. Tissue Engineering

Rena Bizios

UNIVERSITY SERVICE AT RENSSELAER POLYTECHNIC INSTITUTE

- President's Council on Affirmative Action (Member, 1981)
- Affirmative Action Advisory Committee (Member, 1981 - 1984; Chairperson, 1982 -1983)
- Task Force on Promotion and Tenure (Member, 1983 - 1984)
- Dean of Engineering Search Committee (Member, 1984 - 1985)
- Vollmer Fries Lecture Series Selection Committee (Member, 1984 - 1986)
- School of Engineering Faculty Council (Member, 1985 - 1987)
- Psychology Department Chairman Search Committee (Member, 1986 - 1987)
- Engineering School Council (Chairperson of the Council, 1990 -1991; Chairperson-Elect, 1989 - 1990; Elected At-Large Faculty Representative, 1988 - 1990; Chairperson, Faculty Affairs Committee, 1988 - 1990)
- Life Sciences Electron Microscopy Laboratory Advisory Committee (Member, 1990 - 1994)
- Rensselaer Faculty Council (Elected Member-at-Large, 1992 - 1994)
- Rensselaer Faculty Senate (Elected Member-at-Large, 1994 - 1995)
- Library Director Search Committee (Member, 1994)
- Task Force on Undergraduate Student Advising, School of Engineering (Member, 1994 - 1995)
- Dean's Committee on Women in Engineering, School of Engineering (Member, 1996 - 1998)
- Dean's Committee on the Faculty Reward System, School of Engineering (Member, 1997)
- Strategic Planning Subcommittee, School of Engineering (Member, 1998)
- Promotion and Tenure Committee, Rensselaer Faculty Senate (Elected Member, 1998 - 2001)
- Dean of Engineering Search Committee (Member, 1998 - 1999)
- Subcommittee on An Inclusive and Rewarding Learning Environment, School of Engineering (Member, 1999)
- Faculty Search Committee, Department of Chemical Engineering, (Member, 1999 - 2000)
- Institute Diversity Committee (Member, 2000 - 2002)
- Faculty Search Committee, Department of Materials Science and Engineering, (Member, 2001 - 2002)
- Core Engineering Advisory Council, School of Engineering (Member, 2002)
- School of Engineering Space Committee (Member, 2003 – 2005)
- Biomedical Engineering Department Chairperson Search Committee (Member, 2003 – 2004)
- School of Engineering Promotion & Tenure Committee (Elected Faculty Representative, 2004 – 2005)
- Rensselaer Faculty Senate (Secretary of the Faculty, 2004 – 2005)
- Biotechnology Constellation Search Committee (Member, 2004 – 2005)
- Department of Biology Chair Search Committee (Member, 2004 – 2005)

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SERVICE AT THE UNIVERSITY OF TEXAS AT SAN ANTONIO (UTSA)

Department of Biomedical Engineering

- Department Faculty Review Advisory Committee (Chair, 2006-present)
- Faculty Search Committee (Member, 2006 – 2008)
- Senior Faculty Search Committee (Member, 2010 - 2011)
- Faculty Advisor, UTSA Student Chapter of the Society for Biomaterials (2010 - present)

College of Engineering

- College of Engineering Faculty Review Advisory Committee (Member, 2006- present)
- Governing Board of the Center for Excellence in Engineering Education (Member, 2008 – present)
- Faculty Search Committee, Department of Mechanical Engineering (Member, 2006-2007; 2009 – 2010; and 2010-2011)

University

- Faculty Senate (Member, 2006-2009)
- Graduate Council: Representative of the Biomedical Engineering Department (2007 - 2012)
- Graduate Council: Special Membership Committee (Member, 2007 – 2012)
- Southern Association of Colleges (SACS) Leadership Committee (Member, 2007 – 2010)
- University Review Committee (URC), (Member, 2009 - present).
- San Antonio Life Sciences Institute (SALSI) Review Committee (Alternative Reviewer, 2009 –2010)