

**CURRICULUM VITAE****GLENN D. PRESTWICH****Date and Place of Birth:** 29 November 1948, Panama Canal Zone; U.S. Citizen**Education**

B.S. (Honors), 1970. California Institute of Technology, Pasadena, California; Ph.D., Organic Chemistry, 1974.  
 Professor William S. Johnson, Advisor, Department of Chemistry, Stanford University, Palo Alto, California

**Professional Experience**

**1974, 1977** Cornell University, NIH postdoctoral fellowship, Department of Chemistry  
**1974 – 1976** ICIPE, P.O. Box 30772, Nairobi, Kenya; Research Scientist in Chemistry Unit  
**1977 – 1996** Assistant, Associate, Full Professor of Chemistry, SUNY, Stony Brook, New York  
**1991 – 1992** Visiting Professor, Department of Chemistry, Harvard University  
**1992 – 1996** Professor of Biochemistry and Cellular Biology, SUNY, Stony Brook, New York  
**1992 – 1996** Director, Center for Biotechnology, SUNY, Stony Brook, New York  
**1996 – 2002** Chair, Medicinal Chemistry, The University of Utah  
**1996 – current** Research Professor of Biochemistry; Adjunct Professor of Chemistry and of Bioengineering  
 The University of Utah; Adjunct Professor of Biology (Utah State University, Logan, UT)  
**1996 – current** Presidential Professor, Medicinal Chemistry, The University of Utah  
**2001 – 2005** Chief Scientific Officer, Echelon Biosciences Incorporated, Salt Lake City, UT  
**2004 – 2005** Chief Scientific Officer, Sentrx Surgical, Inc., Salt Lake City, UT  
**2005 – 2007** Senior Scientific Advisor, Carbylan BioSurgery, Inc., Palo Alto, CA  
**2006 – 2011** Chief Scientific Officer, Glycosan BioSystems, Inc., Salt Lake City, UT  
**2006 – current** Senior Scientific Advisor, Sentrx Animal Care, Inc., Salt Lake City, UT  
**2008 – current** Chief Scientific Advisor, Echelon Biosciences-Frontier Scientific, Salt Lake City, UT  
**2008 – current** Chief Scientific Officer, GlycoMira, LLC and GlycoMira Therapeutics, Inc., Salt Lake City, UT  
**2011 – 2014** Scientific Advisor, BioTime, Inc., Alameda, CA  
**2013 - current** Chancellor's Distinguished Visiting Professor, Washington State University, WA  
**2014 - current** Manager, Deuteria Agrochemicals LLC, Reno, NV  
**2014 – current** Manager, Deuteria Biomaterials LLC, Reno, NV  
**2014 – current** Adjunct Professor of Surgery, Division of Otolaryngology, University of Utah, UT

**Professional Affiliations and Interests***Co-founder*

Clear Solutions Biotech, Inc.; Echelon Biosciences Inc.; Sentrx Surgical, Inc.; Carbylan BioSurgery, Inc.; Glycosan BioSystems, Inc.; Sentrx Animal Care, Inc.; GlycoMira, LLC; GlycoMira Therapeutics, Inc.; Metallosensors, Inc.; Deuteria Agrochemicals LLC; Deuteria Biomaterials LLC

*Other Administrative Roles*

Director, Center for Cell Signaling (1997-2004); Director, Center for Therapeutic Biomaterials (2004-2008); Scientific Advisory Board (SAB), Clinical Tissue Engineering Center, Cleveland Clinic Foundation (2004-2010); VP Applied Research, International Society for Hyaluronan Science (2004-2008); SAB, Novozymes Biopolymers (2006-11); SAB, Sorenson Discovery & Innovation Center (2007-11); SAB, Organovo, Inc. (2007 - ); SAB, Inst. Systems Biol. & Ecol., Czech Academy of Sciences (2007 - 2011); Chair, Advisory Board, National Center for Voice and Speech (2010 - 2013); SAB, BOD, Brickell Biotech (2010 - 2013); AB, Modern Meadow, Inc. (2012 - ) AB, Jade Therapeutics, Inc./Eyegate, Inc. (2012 - ); AB, American Med Chem (nonprofit) (2013- ); AB, ASHA Vision (2013 - ); SAB Symic Bio (2014 - )

*Research Interests*

Phosphoinositide and lysolipid signaling, therapeutic biomaterials; anti-inflammatory GAGs

*Courses Taught*

Bioorganic Chemistry; Structural Organic Chemistry; Introductory, Honors and Intermediate Organic Chemistry, Chemical Ecology; Medicinal Chemistry; Site-Targeted Drug Delivery

**Awards and Honors**

National Institutes of Health Postdoctoral Fellow, 1976-1977; National Institutes of Health Senior Fellowship, 1992  
 Alfred P. Sloan Foundation Research Fellow, 1981-1985; Camille and Henry Dreyfus Teacher-Scholar, 1981-1986  
 Distinguished Research Fellow, Bodega Marine Laboratory, University of California, 1989  
 H.C. Brown Lecturer, Purdue University, March 1990  
 Paul Dawson Biotechnology Award, American Association of Colleges of Pharmacy, 1998  
 Small Business Administration Tibbetts Awards to Echelon Research Laboratories, 1999 and 2003  
 Silverstein-Simeone Award of the International Society of Chemical Ecology, 2001  
 Stoel Rives Utah Innovation Awards (Echelon Biosciences, 2003; Sentrx Surgical, 2005)  
 Fellow of the American Institute for Medical and Biological Engineering, 2005 - current  
 Governor's Medal for Science & Technology, 2006; VSpring Capital Top 100 Entrepreneurs, 2005, 2006  
 TIAA-CREF 'Greater Good Award' for 2006-2007; Utah Business Magazine's "Health Care Heroes," 2006  
 Volwiler Research Award, American Association of Colleges of Pharmacy, 2008  
 Rooster Prize for Therapeutic uses of Hyaluronan, International Society for Hyaluronan Science, 2010  
 University of Utah Distinguished Scholarly and Creative Research Award, 2010  
 Fellow of the National Academy of Inventors, 2013 - current  
 University of Utah Distinguished Innovation and Impact Award, 2014

**Invited Lectures:** Dr. Prestwich presented over 660 invited lectures. Selections from last 8 years are listed below.

- 2009** Macromolecular Materials, Gordon Research Conference, Ventura, California, 11-15 January  
Johns Hopkins University, Department of Biomedical Engineering, 2 February  
Hilton Head Workshop, Stem Cell Short Course, 4 March  
Hilton Head Workshop, Regenerative Medicine, 5-8 March  
University of Delaware, Department of Bioengineering, 1 April  
University of Tennessee, Knoxville, Department of Chemistry, 2 April  
UC San Diego, Tissue Engineering and Regenerative Medicine Course, 9 April  
American College of Veterinary Internal Medicine, Montreal, 4 June  
FASEB Lysophospholipid Symposium, Tucson, 29 June - 3 July  
Case Western Reserve University, 2<sup>nd</sup> Annual Business Education Course, Cleveland, 13-16 July  
Tissue Engineering Course, Rice University, 12-14 August  
European Symposium on Hormones and Cell Regulators, Alsace, France, 15-18 September  
Life Sciences Summit, University at Stony Brook, 23-24 September  
Pfizer International, Sandwich, UK, 29 September  
Royal Chemical Society, Chemical Tools in Systems Biology, Cambridge, UK, 1 October  
University of Minnesota, Medicinal Chemistry, 17 November
- 2010** Stem Cell Summit, New York City, 16 February  
Orthopedic Research Society, Faculty Entrepreneur Program, New Orleans, 7-8 March  
Society of Toxicology, Salt Lake City, 10-12 March  
University of Utah, Pharmaceuticals and Pharmaceutical Chemistry, 5 April  
Society for Biomaterials, co-organizer, Glycosaminoglycan Biomaterials in Medicine, Seattle, 21-24 April  
HA 2010, Rooster Prize Award Lecture, Kyoto, Japan, 6-11 June  
Case Western Reserve University, 3<sup>rd</sup> Annual Business Education Course, Cleveland, 12-15 July  
American Chemical Society Division of Polymer Science, Entrepreneur Program, 22-23 August  
Life Sciences Summit, Hauppauge, NY, 22-23 September  
University of Memphis, Biomedical Engineering, Memphis, September 24  
Institute for Chemical Biology and Drug Discovery, Going to FDA, Plenary, University at Stony Brook, 14 October  
New Jersey Symposium on Biomaterials Science, Rutgers U, 24-26 October  
Pre-symposium Workshop Organizer, TERMIS, Orlando, 5-8 December
- 2011** Rice University, Workshop on 3D Cell Culture, 10 February  
15<sup>th</sup> International Symposium on Recent Advances in Drug Delivery Systems, Salt Lake, 13-16 February  
University of Georgia, College of Pharmacy, Athens, 1 March  
Complex Carbohydrate Research Center, Athens, 2 March  
Symposium Co-organizer and Plenary Speaker, Society for Biomaterials, Orlando, 13-16 April  
Australasian Society for Biomaterials & Tissue Engineering, Queenstown, New Zealand, 27-29 April  
Johnson-Sokatch Lecturer, University of Oklahoma, 11-12 May  
OKBio Lecture, Oklahoma University Health Sciences Center, 12 May  
Changchun Institute for Applied Chemistry, Chinese Academy of Sciences, 27 May  
International Symposium on Biomaterials, Guilin City, China, 29 May – 1 June  
Case Western Reserve University, 4<sup>th</sup> Annual Business of Regenerative Medicine Course, Cleveland, 11-13 July  
European Society for Biomaterials, Dresden, Germany, 1-2 September  
Pharmacy Alumni Advisory Committee, University of Utah, 6 October 2011  
University of Nebraska, Department of Biochemistry and Redox Biology Center, Lincoln, 11 October  
Plenary Keynote Lecturer, GTC Modern Drug Design and Development, San Diego, 19 October  
Panelist, Modern Devices, Drugs and Delivery Summit, Salt Lake City, 26 October  
Children's Hospital of Oakland Research Institute, Distinguished Lecture, Oakland, 6 December  
Nano Today, Waikoloa, Hawaii, 11-15 December
- 2012** University of Texas, Austin, Department of Bioengineering, Austin, 2 February  
Translational Medicine Symposium, U of Utah, Salt Lake City, Co-organizer, speaker, 7 February  
Material Research Society Symposium, San Francisco, 12-15 April  
GTC 8<sup>th</sup> Stem Cell Summit, Boston, 19,20 April  
US-Canada Workshop on Commercialization, Universities of Calgary, Waterloo, and Montreal, 10-15 June  
Advanced Functional Polymers for Medicine, Vico Equense, Italy, 2-6 July  
Case Western Reserve University, 5<sup>th</sup> Annual Business of Regenerative Medicine Course, Cleveland, 14-16 July  
Washington State University, College of Arts & Sciences, Bench to Business, 5 October  
Commercialization Interchange, U of Utah, 17-19 October

GTC Modern Drug Discovery & Development Summit, Keynote, Philadelphia, 24,25 October  
 New Jersey Symposium on Biomaterials Science at Rutgers U, New Brunswick, 13-15 October  
 BioTime, Inc., videotaped seminar series on Clinical Biomaterials, Alameda, CA 19 November

- 2013** University of California San Francisco, 14-15 January  
 Translational Medicine Symposium, U of Utah, Salt Lake City, Co-organizer, speaker, 19 February  
 Executive Summit, Lasso Center, Salt Lake City, UT 21-23 February  
 University of Georgia, College of Pharmacy, Athens, 5 March  
 Carnegie Mellon University-McGowan Institute Annual Retreat, 8 March  
 Washington State University, NIH Protein Technology Training Grant Keynote Talk, 13 April  
 HA 2013, co-organizer and speaker, University of Oklahoma, Oklahoma City, OK, 5-9 June  
 Case Western Reserve University, 6<sup>th</sup> Annual Business of Regenerative Medicine Course, Cleveland, 15-18 July  
 University of Utah, Department of Surgery Grand Rounds, 8 August  
 McGowan Institute for Regenerative Medicine, 9 October  
 Commercialization Interchange, U of Utah, 14-15 October  
 Penn State University Medical Center, Keynote for Awards Dinner, 22 October
- 2014** University of California, Riverside, Bioengineering, 22 January  
 Translational Medicine Symposium, U of Utah, Salt Lake City, Co-organizer, speaker, 11 February  
 University of Illinois, Urbana-Champaign, Chemical & Biomolecular Engineering, 20 March  
 Biomaterials for Biomolecule Delivery, Materials Research Society, San Francisco, 21-25 April  
 Penn State University Medical Center, Hershey, Keynote for Faculty Entrepreneur launch, 29 April 16, 2014  
 Intellectual Ventures, Seattle, 7 May  
 Gordon Research Conference on Proteoglycans, Andover, New Hampshire, 8-11 July  
 Case Western Reserve University, 7<sup>th</sup> Annual Business of Regenerative Medicine Course, Toronto, 14-17 July  
 Skaggs Symposium, Missoula, MT, 14 August  
 Commercialization of Micro and Nanotechnologies Symposium (COMS), Salt Lake City, 13 October  
 Commercialization Interchange, Midway and U of Utah, 14-16 October  
 Rotary Club of Salt Lake, 2 December
- 2015** National Cancer Institute, Frederick, MD, 22 January  
 University of Texas San Antonio Health Sciences Center, 13 April  
 Hong Kong University of Science & Technology, Keynote, 20-23 April  
 HA 2015, co-organizer and speaker, Firenze, Italy 7-11 June  
 Rutgers University, Faculty Ambassadors, 22-24 June  
 Commercialization Interchange, Salt Lake City, New Brunswick, NJ 13-15 October  
 Hong Kong University of Science & Technology, Entrepreneurship Talk, 8 October  
 Alliance for Arts in Research Universities, Workshop, Va6-8 November
- 2016** Washington State University, Pullman, WA Launch of Entrepreneurial Faculty Ambassadors, 19 January  
 University of Montana, Biomedical Engineering & Entrepreneurship, Missoula, MT 24-25 March  
 Assoc for Research in Vision & Ophthalmology, Intellectual Property Symposium, Seattle, 30 April  
 Translate! 2016, speaker/moderator, Berlin, Germany, 23-27 May  
 Gordon Research Conference on Proteoglycans, 10-15 July  
 UC Irvine Innovation Center, Entrepreneurship and Translational Medicine, 29 July  
 Moving Forward with Stem Cell Therapy, EuroCon web seminar, 6 September  
 Commissioned Sounds of Science's "Reaction Yield" by Third Coast Percussion, 8 October premiere, Chicago  
 Led External Review of Innovation and Entrepreneurship team, WSU Pullman and Spokane, 7-9 Nov
- 2017** Leadership Retreat invitee, Mayo Clinic Executive Dean for Research, Tucson, AZ 12-13 February  
 Translational Medicine Symposium, U of Utah, Salt Lake City, Co-organizer, speaker, 27 February  
 Cornell University, BEST Program, College of Veterinary Medicine, Ithaca, NY 22 May  
 HA 2017, Session organizer and speaker, Cleveland Clinic, OH 11-15 June

## Publications of Original Research

1. G.D. Prestwich, "I. Solvolysis of *trans*-9-Methyl-5,9-undecadienyl and *trans*-Undec-5-en-9-ynyl *para*-Nitrobenzene Sulfonates. II. The Total Synthesis of *dl*-Serratenediol via a Cationic Polyolefinic Cyclization," Ph.D. Dissertation, Stanford University, 1974.
2. G.D. Prestwich and J.N. Labovitz, "Application of Nonenzymic Biogenetic-like Olefinic Cyclizations to the Total Synthesis of *dl*-Serratenediol," *J. Am. Chem. Soc.*, **96**, 7103-7105 (1974).
3. G.D. Prestwich, "Chemical Analysis of Soldier Defensive Secretions Species of East African Termites," *Proc. IUSSI Symp.* (Dijon), pp 149-152 (1975).
4. G.D. Prestwich, M. Kaib, W.F. Wood, and J. Meinwald, "1,13-Tetradecadien-3-one and Homologs: New Natural Products Isolated from *Schedorhinotermes* Soldiers," *Tetrahedron Lett.*, 4701-4704 (1975).
5. W.F. Wood, M.G. Leahy, R. Galun, G.D. Prestwich, J. Meinwald, R.E. Purnell, and R.C. Payne. "Phenols as Sex Pheromones of Ixodid Ticks: A General Phenomenon?," *J. Chem. Ecol.*, **1**, 501-509 (1975).
6. G.D. Prestwich, F.B. Whitfield, and G. Stanley, "Synthesis and Structures of Dihydroedulan I and II: Trace Components from the Juice of *Passiflora edulis* Sims," *Tetrahedron*, **32**, 2945-2948 (1976).
7. G.D. Prestwich, "Composition of the Scents of Eight East African Hemipterans. Nymph-Adult Chemical Polymorphism in Coreids," *Ann. Entomol. Soc. Am.*, **69**, 812-814 (1976).
8. G.D. Prestwich, S.P. Tanis, J.P. Springer, and J. Clardy, "Nasute Termite Soldier Frontal Gland Secretions. I. Structure of Trinervi-2 $\beta$ ,3 $\alpha$ ,9 $\alpha$ -triol 9-*O*-Acetate, a Novel Diterpene from *Trinervitermes* Soldiers," *J. Am. Chem. Soc.*, **98**, 6061-6062 (1976).
9. G.D. Prestwich, S.P. Tanis, F. Pilkiewicz, I. Miura, and K. Nakanishi, "Nasute Termite Soldier Frontal Gland Secretions. II. Structures of Trinervitene Congeners from *Trinervitermes* Soldiers," *J. Am. Chem. Soc.*, **98**, 6062-6064 (1976).
10. G.D. Prestwich, "Chemical Composition of the Soldier Secretions of the Termites *Trinervitermes graciosus*," *Insect Biochem.* **7**, 91-94 (1977).
11. G.D. Prestwich, B.A. Bierl, E.D. DeVilbiss, and M.F.B. Chaudhury, "Soldier Frontal Glands of the Termite *Macrotermes subhyalinus*: Morphology, Chemical Composition, and Use in Defense," *J. Chem. Ecol.*, **3**, 579-590 (1977).
12. G.D. Prestwich, B.A. Solheim, J. Clardy, F.G. Pilkiewicz, I. Miura, S.P. Tanis, and K. Nakanishi, "Kempene-1 and -2, Unusual Tetracyclic Diterpenes from *Nasutitermes* Termite Soldiers," *J. Am. Chem. Soc.*, **99**, 8082-8083 (1977).

13. G.D. Prestwich, D.F. Wiemer, J. Meinwald, and J. Clardy, "Cubitene: An Irregular Twelve-Membered-Ring Diterpene from a Termite Soldier" *J. Am. Chem. Soc.*, **100**, 2560-2561 (1978).
14. G.D. Prestwich, "Isotrinervi-2 $\beta$ -ol. Structural Isomers in the Defense Secretions of Allopatric Populations of the Termite *Trinervitermes gratiosus*," *Experientia*, **34**, 682-683 (1978).
15. J. Meinwald, G.D. Prestwich, K. Nakanishi, and I. Kubo, "Chemical Ecology: Studies from East Africa," *Science*, **199**, 1167-1173 (1978).
16. G.D. Prestwich, "Termites: Dweller in the Dark," *National Geographic*, **153**, 532-547 (April 1978).
17. D.F. Wiemer, J. Meinwald, G.D. Prestwich, and I. Miura, "Cembrene A and (3*Z*)-Cembrene A: Diterpenes from a Termite Soldier (Isoptera:Termitidae: Termitinae)," *J. Org. Chem.*, **44**, 3950-3952 (1979).
18. G.D. Prestwich, "Interspecific Variation in the Defence Secretions of *Nasutitermes* Soldiers," *Biochem. Syst. Ecol.*, **7**, 211-221 (1979).
19. G.D. Prestwich, "Defence Secretion of the Black Termite, *Grallatotermes africanus* (Termitidae, Nasutitermitinae)," *Insect Biochem.*, **9**, 563-567 (1979).
20. G.D. Prestwich, J.W. Lauher, and M.S. Collins, "Two New Tetracyclic Diterpenes from the Defense Secretion of the Neotropical Termites *Nasutitermes octopilis*," *Tetrahedron Lett.*, 3827-3830 (1979).
21. G.D. Prestwich, "Las Termitas: El Increible Mundo de Milliones de Seres Ciegos, Sordos y Mudos," *GeoMundo*, **2**, 704-720 (January 1979).
22. G.D. Prestwich, "Chemical Defense by Termite Soldiers," *J. Chem. Ecol.*, **5**, 459-480 (1979).
23. G.D. Prestwich, "Termite Chemical Defense: New Natural Products and Chemosystematics," *Sociobiology*, **4**, 127-138 (1979).
24. G.D. Prestwich and J. Vrkoc, "Standard Nomenclature for Termite Diterpenes," *Sociobiology*, **4**, 139-140 (1979).
25. D.F. Wiemer, J. Meinwald, G.D. Prestwich, B.A. Solheim, and J. Clardy, "Biflora-4,10(19),15-triene: A New Diterpene from a Termite Soldier (Isoptera: Termitidae: Termitinae)," *J. Org. Chem.*, **45**, 191-192 (1980).
26. G.D. Prestwich, S.G. Spanton, J.W. Lauher, and J. Vrkoc, "Structure of 3 $\alpha$ -Hydroxy-15-rippertene. Evidence for a 1,2-Methyl Migration During Biogenesis of a Tetracyclic Diterpene in Termites," *J. Am. Chem. Soc.*, **102**, 6825-6828 (1980).
27. G.D. Prestwich, K.A. Plavcan, and M. Melcer, "Synthesis of Fluorolipids: 1-*O*-Alkyl-2,3-*O*-Diacylglycerides as Targeted Insecticides," *J. Agric. Food Chem.*, **29**, 1018-1022 (1981).

28. G.D. Prestwich, M.E. Melcer, K.A. Plavcan, "Fluorolipids as Targeted Termiticides and Biochemical Probes," *J. Agric. Food Chem.*, **29**, 1023-1027 (1981).
29. G.D. Prestwich, B.L. Bentley, and E.J. Carpenter, "Nitrogen Sources of Neotropical Nasute Termites: Fixation and Selective Foraging," *Oecologia*, **46**, 397-401 (1980).
30. G.D. Prestwich and D. Chen, "Soldier Defense Secretions of *Trinervitermes bettonianus* (Isoptera, Nasutitermitinae): Chemical Variation in Allopatric Populations," *J. Chem. Ecol.*, **7**, 147-157 (1981).
31. G.D. Prestwich, S.H. Goh, and Y.P. Tho, "Termite Soldier Chemotaxonomy. A New Diterpene from Malaysian Nasute Termite *Bulbitermes singaporensis*," *Experientia*, **37**, 11-12 (1981).
32. G.D. Prestwich and M.S. Collins, "Chemotaxonomy of *Subulitermes* and *Nasutitermes* Termite Soldier Defense Secretions. Evidence Against the Hypothesis of Diphyletic Evolution of the Nasutitermitinae," *Biochem. Syst. Ecol.*, **9**, 83-88 (1981).
33. G.D. Prestwich, S.G. Spanton, S.H. Goh, and Y.P. Tho, "New Tricyclic Diterpene Propionate Esters from a Termite Soldier Defense Secretion," *Tetrahedron Lett.* **22**, 1563-1566 (1981).
34. G.D. Prestwich, R.W. Jones, and M.S. Collins, "Terpene Biosynthesis by Nasute Termite Soldiers (Isoptera: Nasutitermitinae)," *Insect Biochem.*, **11**, 331-336 (1981).
35. G.D. Prestwich and M.S. Collins, "A Novel Enolic  $\beta$ -Ketoaldehyde in the Defense Secretion of the Termite *Rhinotermes hispidus*," *Tetrahedron Lett.*, **21**, 5001-5002 (1980).
36. G.D. Prestwich and B.L. Bentley, "Nitrogen Fixation by Intact Colonies of the Termite *Nasutitermes corniger*," *Oecologia*, **49**, 249-251 (1981).
37. G.D. Prestwich and M.S. Collins, "3-Oxo-(Z)-9-Hexadecenal: An Unusual Enolic  $\beta$ -Keto Aldehyde from a Termite Soldier Defense Secretion," *J. Org. Chem.*, **46**, 2383-2385 (1981).
38. H.-M. Shieh and G.D. Prestwich, "Stereoselective Alkylation and Aldol Reactions of (S)-(-)- $\beta$ -Hydroxy- $\gamma$ -butyrolactone Dianion," *J. Org. Chem.*, **46**, 4319-4321 (1981).
39. G.D. Prestwich and M.S. Collins, "Macrocyclic Lactones as the Defense Substances of the Termite Genus *Armitermes*," *Tetrahedron Lett.*, **22**, 4587-4590 (1981).
40. S.G. Spanton and G.D. Prestwich, "Chemical Self-Defense by Termite Workers: Prevention of Autotoxication in Two Rhinotermitids," *Science*, **214**, 1363-1365 (1981).
41. G.D. Prestwich and M.S. Collins, "Chemical Defense Secretions of the Termite Soldiers of *Acorhinotermes* and *Rhinotermes* (Isoptera, Rhinotermitinae): Ketones, Vinyl Ketones, and  $\beta$ -Ketoaldehydes Derived from Fatty Acids," *J. Chem. Ecol.*, **8**, 147-161 (1982).
42. G.D. Prestwich, "From Tetracycles to Macrocycles: Chemical Diversity in the Defense Secretions of Nasute Termites," *Tetrahedron*, Symposium-in-Print, **38**, 1911-1919 (1982).

43. S.G. Spanton and G.D. Prestwich, "Chemical Defense and Self-Defense: Biochemical Transformations of Contact Insecticides Produced by Soldier Termites," *Tetrahedron*, Symposium-in-Print, **38**, 1921-1930 (1982).
44. J.F. Carvalho and G.D. Prestwich, "Evidence for Stereoselective Lipolysis in a Termite. Toxicity of Enantiomeric  $\omega$ -Fluorinated Alkyldiacylglycerols to *Reticulitermes flavipes*," *Insect Biochem.*, **12**, 343-348 (1982).
45. G.D. Prestwich, G.E. Kovalick, and J.K. Koeppe, "Photoaffinity Labelling of Juvenile Hormone Binding Proteins in the Cockroach *Leucophaea maderae*," *Biochem. Biophys. Res. Commun.*, **107**, 966-973 (1982).
46. G.D. Prestwich, "Termite Soldiers: Warriors with Chemical Weapons," *The Science Teacher*, **49**, 50-53 (1982).
47. G.D. Prestwich, "The Total Termite," *The Science Teacher*, **49**, 29-33 (1982).
48. T.B. Kline and G.D. Prestwich, "Side Chain Modified Sterols as Probes into Insect Molting Hormone Metabolism. I. Synthesis of Monofluorophytosterols," *Tetrahedron Lett.*, **23**, 3043-3046 (1982).
49. G.D. Prestwich and B.L. Bentley, "Ethylene Production by the Fungus Comb of Macrotermitines (Isoptera, Termitidae): A Caveat for the Use of the Acetylene Reduction Assay for Nitrogenase Activity," *Sociobiology*, **7**, 145-152 (1982).
50. Y. Naya, G.D. Prestwich, and S.G. Spanton, "Sesquiterpenes from Termite Soldiers. Structure of Amiteol, A New  $5\beta$ ,  $7\beta$ ,  $10\beta$  Eudesmane from *Amitermes excellens*," *Tetrahedron Lett.*, **23**, 3047-3050 (1982).
51. H.-M. Shieh and G.D. Prestwich, "Chiral, Biomimetic Total Synthesis of (-)-Aplysistatin," *Tetrahedron Lett.*, **23**, 4643-4646 (1982).
52. M.S. Collins and G.D. Prestwich, "Defense in *Nasutitermes octopilis* Banks (Isoptera, Termitidae, Nasutitermitinae): Comparative Effectiveness of Soldier Secretion," *Insectes Sociaux*, **30**, 70-81 (1983).
53. G.D. Prestwich, J.K. Mauldin, J.B. Engstrom, J.F. Carvalho, and D.Y. Cupo, "Comparative Toxicity of Fluorinated Lipids and Their Evaluation as Bait-Block Toxicants for the Control of *Reticulitermes* spp. (Isoptera: Rhinotermitidae)," *J. Econ. Entomol.*, **76**, 690-695 (1983).
54. G.D. Prestwich, H.-M. Shieh, and A.K. Gayen, "Side Chain Modified Sterols as Probes into Insect Molting Hormone Metabolism. II. Synthesis of Monofluorocholesterols," *Steroids*, **41**, 79-94 (1983).
55. G.D. Prestwich, "The Chemical Defenses of Termites," *Scientific American*, pp. 78-87 (August 1983).
56. G.D. Prestwich and S. Phirwa, "Synthesis of 29-Fluorophytosterols: A Novel Class of Insect-Activated Selective Poisons," *Tetrahedron Lett.*, **24**, 2461-2464 (1983).

57. G.D. Prestwich, A.K. Singh, J.F. Carvalho, J.K. Koeppe, and G.E. Kovalick, "Photoaffinity Labels for Insect Juvenile Hormone Binding Proteins: Synthesis and Evaluation *In Vitro*" *Tetrahedron*, Symposium-in-Print, **40**, 529-537 (1984).
58. C.H. Chuah, S.H. Goh, G.D. Prestwich, and Y.P. Tho, "Soldier Defense Secretions of the Malaysian Termite *Hospitalitermes umbrinus* (Isoptera, Nasutitermitinae)," *J. Chem. Ecol.*, **9**, 347-356 (1983).
59. S.H. Goh, C.H. Chuah, Y.P. Tho, and G.D. Prestwich, "Extreme Intraspecific Chemical Variability in Soldier Defense Secretions of Allopatric and Sympatric Colonies of *Longipeditermes longipes*," *J. Chem. Ecol.*, **10**, 929-944 (1984).
60. J.K. Koeppe, G.E. Kovalick, and G.D. Prestwich, "A Specific Photoaffinity Label for Hemolymph and Ovarian Juvenile Hormone-binding Proteins in *Leucophaea maderae*," *J. Biol. Chem.*, **259**, 3219-3223 (1984).
61. G.D. Prestwich, A.K. Gayen, S. Phirwa, and T.B. Kline, "29-Fluorophytosterols: Novel Pro-insecticides Which Cause Death by Dealkylation," *Bio/Technology*, **1**, 62-65 (1983).
62. J.F.A. Traniello, B.L. Thorne, and G.D. Prestwich, "Chemical Composition and Efficacy of the Cephalic Gland Secretion of *Armitermes chagresi* (Isoptera: Termitidae)," *J. Chem. Ecol.*, **10**, 531-543 (1984).
63. J.F. Carvalho and G.D. Prestwich, "Synthesis of  $\omega$ -Tritiated and  $\omega$ -Fluorinated Analogues of the Trail Pheromone of Subterranean Termites," *J. Org. Chem.*, **49**, 1251-1258 (1984).
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### **Membership and Offices Held**

American Chemical Society (1970-current)  
Entomological Society of America (1976-1992)  
International Union for Study of Social Insects (1975-1999)  
International Society of Chemical Ecology (lifetime member)  
American Association for the Advancement of Science (1975 – current)  
Sigma Xi (1977-current; President 1986-87, local chapter)  
American Associate of Colleges of Pharmacy (1998-current)  
Alternate Councilor, Division of Medicinal Chemistry, American Chemical Society (2002-2004)  
American Association for Cancer Research (2003-current)  
Society for Biomaterials (2003 – current)  
International Society for Hyaluronan Sciences (founding VP Applied Research; 2004 – current)  
Tissue Engineering and Regenerative Medicine Society (2006 – current)

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Dr. Mirza A. Mohamed, October 1986 - March 1989, 1F32 GM 1156501  
Dr. Gregory M. Anstead, February 1988 - August 1989, 1F32 HL 0761301

### **Mentor for Research and Clinical Faculty**

Research Assistant Professor Ikuro Abe, July 1996 - March 1998  
Research Assistant Professor Koen P. Vercruyssen, June 1998 - July 2000  
Research Assistant Professor Yi Luo, June 2000 - December 2001  
Research Professor Shoichiro Ozaki, September 1997 - September 2002  
Research Associate Professor Jerald C. Hinshaw, July 1999 - June 2007  
Research Assistant Professor Yanchun Liu, September 2004 - June 2006  
Research Assistant Professor Xiao Zheng Shu, September 2004 - July 2006  
Research Assistant Professor Yong Xu, September 2004 - January 2006  
Research Assistant Professor Honglu Zhang, July 2007 - July 2008  
Assistant Professor of Surgery Siam Ootamasathien, January 2009 – current  
Assistant Professor of Surgery Jeremiah Alt, July 2013 - current

### **Host for Visiting Faculty Members and Scientists**

Professor John J. Brown (Entomology, Washington State University), 1982  
Professor Ryohei Yamaoka (Chemical Ecology, Kyoto Technical University, Japan), 1982-1983  
Professor Arnon Shani (Chemistry, Ben Gurion University, Israel), 1987-1988  
Professor James E. Carrel (Biology, University of Missouri, Columbia), 1990  
Professor Angel Guerrero (Department of Bioorganic Chemistry, CSIC, Barcelona, Spain), 1991  
Professor Shoichiro Ozaki (Department of Applied Chemistry, Ehime University, Japan), 1996  
Dr. David R. Greenwood (HortResearch, Mt. Albert Research Centre, Auckland, New Zealand), 1997  
Professor Alice Perez (Chemistry, University of Costa Rica), 1998  
Professor Matthew A. Movsesian (Cardiology, The University of Utah), 2000  
Dr. David R. Greenwood (HortResearch, Mt. Albert Research Centre, Auckland, New Zealand), 2000  
Professor Robert A. Peattie (Engineering, Trinity College, Hartford, Connecticut), 2001  
Professor Young Il Yang (Pathology, Paik-Inje Memorial Institute for Biomedical Science, Pusan, Korea), 2003  
Professor Jennifer Wilson (Institute for Glycomics, Griffith University, Gold Coast, Australia), 2005

**Reviewer of Manuscripts and Grants:** more than 50 journals including:

<i>Biochemistry</i>	<i>Eur. J. Biochem.</i>	<i>Organic Lett.</i>
<i>Biomacromolecules</i>	<i>J. Biol. Chem.</i>	<i>Proc. Natl. Acad. Sci., USA</i>
<i>Biomaterials</i>	<i>J. Org. Chem.</i>	<i>Science</i>
<i>Bioorg. Med Chem. Lett.</i>	<i>J. Am. Chem. Soc.</i>	<i>Tetrahedron Lett.</i>
<i>Chem. &amp; Biol.</i>	<i>Nature</i>	<i>Tissue Engineering</i>
<i>Chem. Senses</i>	<i>Nature Biotech.</i>	

Alfred P. Sloan Foundation  
National Institutes of Health  
National Science Foundation (8 programs)  
NIH Study Section, Bioorganic and  
Natural Products (ad hoc)  
NSERC (Canada)  
DOD Breast Cancer Review Panel

Petroleum Research Fund  
Research Corporation  
NIH Special Study Section (SBIRs) (1998 - 2002)  
Chair, Gordon Research Conference,  
Natural Products (1990)  
Chair, Gordon Research Conference,  
Bioorganic Chemistry (1995)

**Editorial and Advisory Boards**

*Journal of Chemical Ecology* (1984 - 1998)  
*Insect Biochemistry and Molecular Biology* (1985 - 1996)  
*Quarterly Review of Biology* (Book Review Consultant, 1986 -1996)  
*ChemTracts* (Organic Chemistry), Invited Expert Analyst (1989 - 2010)  
*Bioconjugate Chemistry* (1992 - 2010)  
*Current Opinion in Chemical Biology* (1997 - current)  
*Journal of Biological Chemistry* (2000 - 2006)  
*M.D. Anderson Cancer Center Advisory Board, University of Texas* (2001 - 2004)  
*Il Farmaco* Editorial Board (2001 - 2007)  
*Scientific Advisory Board, Aeterna Zentaris, Inc.* (2005 - 2007)  
*Current Bio Data Lipid Signalling* (2006 - 2010)  
*Perspectives in Medicinal Chemistry* (2007 - 2015)  
*Prostaglandins and Other Lipid Mediators* (2007 - 2015)  
*Macromolecular Biosciences* (2007 - current)  
*Biomatter* (2010 – 2016)  
*Science Translational Medicine* (2011 – current)