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EXPERIENCE

- 2005 Interim Director, Institute for Biomedical Studies, Baylor University.
- 2002 Associate Professor, Department of Chemistry & Biochemistry, Baylor University.
- 1999 Director, Center for Drug Discovery, Baylor University.
- 1996 Assistant Professor, Department of Chemistry & Biochemistry and Institute of Biomedical Studies, Baylor University, Waco Texas.
- 1991 Post-Ph.D, The University of California, Los Angeles.
Professor M. Frederick Hawthorne, Research Advisor.
- 1990 Ph.D. degree in Chemistry (Organic), Texas Tech University, Lubbock Texas.
Professor Robert D. Walkup, Research Advisor.
- 1987 B.S. degree in Chemistry, Texas Lutheran College, Seguin Texas.

PROFESSIONAL DISTINCTIONS

- 2006 Phi Beta Kappa Acknowledgement (also 2004, 2003, 2002 (x2) and 2001)
- 2002 Symposia Chair, "Frontiers of Oligonucleotides" and "The Future of Academic/Industrial Collaborations", 58th SW Regional Meeting, American Chemical Society, Austin, TX
- 2002 Chair, Conflict of Interest Committee, Baylor Research Inst. (Baylor Health Care System)
- 2001 Appointed to Board of Trustees, Baylor Research Institute (Baylor Health Care System)
- 2000 Paper highlighted in ACS Meeting Briefs, "Reductive method alkylates amines"
C&E News **2000**, 78(37), 30.
- 2000 "Circle of Achievement" Award from Baylor University Mortar Board (also 1998)
- 2000 Chair, 'Broaden CCR To Other Disciplines' Action Network, Council of Chemical Research
- 1999-2004 Consultant, Genzyme Tissue Repair (Boston, MA)
- 1998 Appointed to Scientific Advisory Board, OXiGENE, Inc.
- 1998-2003 Consultant, OXiGENE (Lund, Sweden)
- 1998-2003 Consultant, Campamed, Inc. (Arlington, VT)
- 1994-97 Consultant, IONIX Corporation (Seattle, WA)
- 1994 Session Chair (Chemistry), Sixth International Symposium on Neutron Capture Therapy for Cancer, November 1994, Kobe Japan.
- 1992-95 NIH Individual Postdoctoral Fellowship; NIH Institutional Postdoctoral Fellowship (Tumor Cell Biology Training Program).
- 1992 Invited presentation to the Board of Scientific Counselors of the Division of Cancer Treatment of the National Cancer Institute (NIH), Bethesda Maryland.
- 1991 First Annual Song Prize, TTU (best dissertation, Chemistry & Biochemistry).
- 1989 First Place Award for paper presented at the Student Research Conference at ENMSU; 2nd Place Award for paper presented at the South Plains Research Symposium at TTU.
- 1985 Robert A. Welch Foundation Undergraduate Research Fellow, Department of Chemistry, Texas Lutheran College.

GRADUATE THESES

- “Study of the Photochemical Protein Crosslinking of 1,8-Naphthalimides”, Timothy M. Rowland, *Masters of Science Thesis, Biomedical Studies (Spring 1999)*.
- “Modification of Metoclopramide at the Ortho-Methoxy Position Enhances Cytotoxicity and Induces Apoptosis”, Elizabeth A. Keschman, *Masters of Science Thesis, Biomedical Studies (Spring 2000)*.
- “Photochemical Protein Crosslinking by 1,8-Naphthalimides”, Robert Jeremy Woods, *Doctor of Philosophy Dissertation (Summer 2003)*.
- “The Synthesis of Novel Phosphate Diester Prodrugs of Combretastatin A4; DNA Cleavage with a Metal Ion-Iminoacetic Acid Linked Deoxyoligonucleotide System or by Photoreaction with 4-Amino-1,8-Naphthalimides”, Mark Devannand Jonklaas, *Doctor of Philosophy Dissertation (Summer 2003)*.
- “Modification of Fresh Tissue Surfaces; Synthesis of Labeled L-DOPA Analogs; Synthesis of Metaclopramide Analogs”, Aruna Perera, *Doctor of Philosophy Dissertation (Fall 2005)*.
- “Coenzymes for *in Vitro* Selection of DNA Enzymes”, Dorn L. Carranza, *Doctor of Philosophy Dissertation (Spring 2006)*.
- “Synthesis of Protected Amino Thymidines and New Thiol Derivatives of the Vascular Targeting Agent Combretastatin A-4”, Daniel A. Ramirez, *Masters of Science Thesis (Summer 2006)*.

UNDERGRADUATE THESES

- “A Study of Synthetic DNA Fitted with Metal Binding Ligands”, Carla E. Torres, *Honors Thesis (Spring 1998)*.
- “Synthesis of Deuterium-Labeled 4-Hydroxy-3-methoxyphenylalanine From 3,4-Dihydroxybenzaldehyde”, Emily Morgan, *Honors Thesis (Spring 2004)*.

BOOKS

Chuck Garner and Bob Kane, *Experiments in Organic Chemistry Laboratory*, Kendall/Hunt, Dubuque, IA; 2002 (ISBN 0-7872-9625-2).

PUBLICATIONS

39. “Synthesis and crystal structures of *cis*- and *trans*-1-(3'-*N*, *N*-dimethylthiocarbamoyl-4'-methoxy)-2-(3", 4", 5"-trimethoxyphenyl) ethene”, Daniel A. Ramirez, Jianxing Zhang, Kevin Klausmeyer, and Robert R. Kane, *J. Chem. Crystallography* **2005**, 35(3), 227-232.
38. “Synthesis and *in vitro* Biological Evaluation of Aminoal and Thioamino Analogues of Cordycepin”, Hui-Min Chang, Jesse Oakes, Anders Olsson, Luminita Panaitescu, B. Mark Britt, Christopher M. Kearney, and Robert R. Kane, *Letters in Drug Design & Discovery* **2005**, 2(2), 133-136.
37. “Suture-Less Avascular Meniscal Repair: A Preliminary Animal Study”, Fabian E. Pollo, Robert W. Jackson, Robert R. Kane, Hui-Min Chang, Jianxing Zhang, Chad P. Dieterichs, and Stephan Riedel, *Arthroscopy: The Journal of Arthroscopic and Related Surgery* **2004**, 20(8), 824-830.
36. “Photochemical Tissue Bonding Using 4-Amino-1,8-Naphthalimides”, Jianxing Zhang, R. Jeremy Woods, Phillip B. Brown, Richard A. Mowery, Fabian Pollo, Robert W. Jackson, and Robert R. Kane, *Journal of Biomedical Optics* **2004**, 9(5), 1089-1092.
35. “Combretastatin Family Member OXI4503 induces Tumor Vascular Collapse Through the Induction of Endothelial Apoptosis”, Yezhou Sheng, Jianyi Hua, Kevin G. Pinney, Charles M. Garner, Robert R. Kane, Joseph A. Prezioso, David J. Chaplin, and Klaus Edvardsen, *International Journal of Cancer* **2004**, 111, 604-610.

34. "Protein Crosslinking by 1,8-Naphthalimides: Influence of the 4-Substituent", R. Jeremy Woods, Jianxing Zhang, Charalene R. Green, and Robert R. Kane, *ARKIVOC* **2003**, (xiii), 109-118.
33. "OXI4503 A Novel Vascular Targeting Agent: Effects on Bloodflow and Antitumor Activity in Comparison to Combretastatin A-4 Phosphate", Jianyi Hua, Yezhou Sheng, Kevin Pinney, Charles M. Garner, Robert R. Kane, Joseph A. Prezioso, George R. Pettit, David J. Chaplin, and Klaus Edvardsen, *Anticancer Research* **2003**, *23*, 1433-1440.
32. "[*(E)*-1-(2-hydroxy-4-methoxyphenyl)-2-(3,4,5-trimethoxyphenyl)-ethene]", Jianxing Zhang, Shou-Feng Chen, Kevin K. Klausmeyer and Robert R. Kane, *Acta Cryst. C* **2003**, *C59*, o381-o382.
31. "Synthesis, *in vitro*, and *in vivo* Evaluation of Phosphate Ester Derivatives of Combretastatin A-4", M. Devan Jonklaas, Jianxing Zhang, Klaus Edvardsen, Robert R. Kane, and Kevin G. Pinney, *Biochem. Med. Chem. Lett.*, **2003**, *13(9)*, 1505-1508.
30. "Synthesis of deuterium-labeled 3-*O*-methyldopa and 4-*O*-methyldopa", Aruna Perera, Hoa K. Nguyen, Keith Hyland, and Robert R. Kane, *J. Labeled Compds. Radiopharm.* **2003**, *46(5)*, 389-394.
29. "Synthesis and Photochemical Protein Crosslinking Studies of Hydrophilic Naphthalimides", Jianxing Zhang, R. Jeremy Woods, Philip B. Brown, Kap Duk Lee, and Robert R. Kane, *Biochem. Med. Chem. Lett.* **2002**, *12(6)*, 853-856.
28. "Reductive Alkylation of Aromatic Amines via Amidine Intermediates", Jianxing Zhang, Hui-Min Chang, and Robert R. Kane, *Synlett* **2001**, (5), 643-645.
27. "Pharmacokinetics and Central Nervous System Toxicity of Declopramide (3-Chloroprocainamide) in Rats and Mice", Jianyi Hua, Robert R. Kane, and Ronald W. Pero, *Anticancer Drugs* **1999**, *10*, 79-88.
26. "The Synthesis of 3'- and 5'-Iminodiacetic Acid Derivatives of Thymidine and Their Incorporation into Synthetic Oligonucleotides", M. Devan Jonklaas and Robert R. Kane, *Tetrahedron Letters* **2000**, *41*, 4035-3037.
25. "Comparison of Antitumor Activity of Declopramide (3-Chloroprocainamide) and N-Acetyl-Declopramide", Jianyi Hua, Carl Bryngelsson, Robert R. Kane, and Ronald W. Pero, *Anticancer Research* **1999**, *19(1A)*, 285-290.
24. "Toward a Cancer Therapy with Boron-Rich Oligomeric Phosphate Diesters Which Target the Cell Nucleus", Akira Nakanishi, Lufeng Guan, Robert R. Kane, Harumi Kasamatsu, and M. Frederick Hawthorne, *Proceedings of the National Academy of Sciences (USA)* **1999**, *96(1)*, 238-241.
23. "Efficient Asymmetric Synthesis of the C9-C21 Portion of the Aplysiatoxin and Oscillatoxin Marine Natural Products", Robert D. Walkup, Jeffrey D. Kahl, and Robert R. Kane, *Journal of Organic Chemistry* **1998**, *63(24)*, 9113-9116.
22. "Homogeneous Immunoconjugates for Boron Neutron Capture Therapy: Design, Synthesis, and Preliminary Characterization", Lufeng Guan, Letitia A. Wims, Robert R. Kane, Mark B. Smuckler, Sherie L. Morrison, and M. Frederick Hawthorne, *Proceedings of the National Academy of Sciences (USA)* **1998**, *95(22)*, 13206-13210.
21. "The Synthesis, Purification, Characterization, And Derivatization Of Boron-Rich Oligophosphates", Robert R. Kane, Young Soo Kim, and M. Frederick Hawthorne, *Advances in Neutron Capture Therapy*, **1997**. Edited by B. Larson, J. Crawford, and R. Weinreich, eds., Elsevier Science; Amsterdam, pp 126-130.
20. "Approaches To The Selective Concentration Of Boron-Rich Oligophosphates In Tumors", Robert R. Kane, Lufeng Guan, Kenneth Shelly, and M. Frederick Hawthorne, *Advances in Neutron Capture Therapy*, **1997**. Edited by B. Larson, J. Crawford, and R. Weinreich, eds., Elsevier Science; Amsterdam, pp 362-365.
19. "Boron-Rich Oligophosphates – Novel Molecules for Use in BNCT", Robert R. Kane, Karin Drechsel, Young-Soo Kim, Cynthia L. Beno, Christine S. Lee, Gabriel Mendez, Solomon Romano, and M. Frederick Hawthorne, *Neutron Capture Therapy of Human Cancers*, Y. Mishima, Ed., Plenum Press, New York, *in press*.

18. "Rods, Rings, Balls, and Strings!", Mark D. Mortimer, Wei Jiang, Zhiping Zheng, Robert R. Kane, Igor T. Chizhevsky, Carolyn B. Knobler, and M. Frederick Hawthorne, in *Modular Chemistry*, J. Michl, Ed., Kluwer Academic Publishers, Dordrecht (the Netherlands), **1997**, 551–564.
17. "The Novel $[n\text{-B}_{20}\text{H}_{18}]^{2-}$ Induced Nucleophilic Ring-Opening of Tetrahydrofuran by Alkoxide Anions", Fangbiao Li, Kenneth Shelly, Robert R. Kane, Carolyn B. Knobler, and M. Frederick Hawthorne, *Angewandte Chemie Int. Ed. Engl.* **1996**, 35(22), 2646-2649.
16. "Targeting of Anionic *nido*-Carboranes to Human Colon Carcinoma Cells with Bispecific Antibodies", F. James Primus, Roger H. Pak, Karen J. Rickard-Dickson, Robert R. Kane, and M. Frederick Hawthorne, *Bioconjugate Chemistry* **1996**, 7(5), 532–535.
15. "Synthesis and Structure of the Polyhedral $[\mu\text{-B}_{20}\text{H}_{17}\text{OH}]^{2-}$ Borane Anion Containing Both Oxygen- and Hydrogen-Bridge Bonds", Fangbiao Li, Kenneth Shelly, Robert R. Kane, Carolyn B. Knobler, and M. Frederick Hawthorne, *Journal of the American Chemical Society* **1996**, 118(27), 6506–6507.
14. "Preparation and Properties of *nido*-Carborane-specific Monoclonal Antibodies for Potential Use in Boron Neutron Capture Therapy (BNCT) of Cancer", Roger H. Pak, F. James Primus, Karen J. Rickard-Dickson, Lai Ling Ng, Robert R. Kane, and M. Frederick Hawthorne, *Proceedings of the National Academy of Sciences (USA)* **1995**, 92, 6986-6990.
13. "Synthesis of New Building Blocks for Boron-Rich Oligomers in Boron Neutron Capture Therapy (BNCT). II. Monomers Derived From 2,2-Disubstituted-1,3-Diols", Young Soo Kim, Robert R. Kane, Cynthia L. Beno, Solomon Romano, Gabriel Mendez, and M. Frederick Hawthorne, *Tetrahedron Letters* **1995**, 36(29), 5147-5150.
12. "Synthesis and Characterization of Oligomeric *nido*-Carboranyl Phosphate Diester Conjugates to Antibodies and Antibody Fragments for Potential Use in Boron Neutron Capture Therapy of Solid Tumors", Christine J. Chen, Robert R. Kane, F. James Primus, Gyorgy Szalai, M. Frederick Hawthorne, and John E. Shively, *Bioconjugate Chemistry* **1994**, 5(6), 557-564.
11. "Synthesis and Structural Characterization of $[(\text{CH}_3)_3\text{NH}][\text{nido-9,11-}\text{I}_2\text{-7,8-C}_2\text{B}_9\text{H}_{10}]$ and $[(\text{CH}_3)_3\text{NH}][\text{nido-9-I-7,8-C}_2\text{B}_9\text{H}_{11}]$ ", Roger H. Pak, Robert R. Kane, Carolyn B. Knobler, and M. Frederick Hawthorne, *Inorganic Chemistry* **1994**, 33(23), 5355-5357.
10. "Synthesis of New Building Blocks for Boron-Rich Oligomers in Boron Neutron Capture Therapy (BNCT). I.", Karin Drechsel, Christine S. Lee, Eamon W. Leung, Robert R. Kane, and M. Frederick Hawthorne, *Tetrahedron Letters* **1994**, 35(34), 6217-6220.
9. "Automated Syntheses of Carborane-Derived Homogeneous Oligophosphates", Robert R. Kane, Karin Drechsel, and M. Frederick Hawthorne, *J. Am. Chem. Soc.* **1993**, 115(19), 8853-8854.
8. "Solution-Phase Synthesis of Boron-Rich Oligophosphates", Robert R. Kane, Christine S. Lee, Karin Drechsel, and M. Frederick Hawthorne, *Journal of Organic Chemistry* **1993**, 58(12), 3227-3228.
7. "Solution-Phase Segment Synthesis of Boron-Rich Peptides", Robert R. Kane, Roger H. Pak, and M. Frederick Hawthorne, *Journal of Organic Chemistry* **1993**, 58(5), 991-992.
6. "Novel Carboranyl Diols and Their Derived Phosphate Esters", Robert R. Kane, Christine S. Lee, Cynthia L. Coe, Melissa A. St. Rose, Karin Drechsel, and M. Frederick Hawthorne, in *Advances in Neutron Capture Therapy*, A.H. Soloway, Ed., Plenum Press, New York, **1993**, 293-296.
5. "Novel Carboranyl Amino Acids and Peptides", Robert R. Kane, Roger H. Pak, Lai-Ling Ng, and M. Frederick Hawthorne, in *Advances in Neutron Capture Therapy*, A.H. Soloway, Ed., Plenum Press, New York, **1993**, 273-276.
4. "A Stereoselective Route to the Spirobicyclic Ring System of Oscillatoxin D", Robert D. Walkup, P. Douglas Boatman, Jr., Robert R. Kane, and Raymond T. Cunningham, *Tetrahedron Letters* **1991**, 32(32), 3937-3940.
3. "Expeditious Synthesis of a Key C₉-C₂₁ Subunit of the Aplysiatoxins and Oscillatoxins", Robert D. Walkup, Robert R. Kane, P. Douglas Boatman, Jr., and Raymond T. Cunningham, *Tetrahedron Letters* **1990**, 31(52), 7587-7590.

2. "Effects of Substituents Upon a Radical Cyclization of β -Chloroethylsilyl Enol Ethers", Robert D. Walkup, Robert R. Kane, and Nihal U. Obeyesekere, *Chemistry Letters* **1990**, (7), 1055-1058.
1. "An α -Alkylation/Reduction of Ketones via Radical Cyclizations of β -Chloroethylsilyl Enol Ethers", Robert D. Walkup, Robert R. Kane, and Nihal U. Obeyesekere, *Tetrahedron Letters* **1990**, 31(11), 1531-1534.

PATENTS

"Spatially-Defined Modification of Fresh Tissue Using Covalent Chemistry", Aruna Perera and Robert R. Kane, *provisional patent application filed September 28, 2004*.

"Nucleoside Prodrugs Resistant to Metabolic Deactivation", Hui-Min Chang and Robert R. Kane, *provisional patent application filed December 3, 2002; complete application filed December 2003*.

"Functionalized Z- and E- Stilbene Derivatives as Improved Vascular Targeting Agents", Dai Chaplin, Klaus Edvardsen, Charles M. Garner, Robert R. Kane, Kevin G. Pinney, and Joseph A. Prezioso, *patent application filed October 26, 2002*.

"Boron-Containing Hormone Analogs and Methods of Their Use in Killing Cells Having Hormone Receptors", M. Frederick Hawthorne, Mark Groudine, and Robert R. Kane, U.S. and International Patent applications submitted.

"Macromolecular Structure for Boron Neutron Capture Therapy", M. Frederick Hawthorne and Robert R. Kane, U.S. Patent #6,248,916.

"Macromolecular Structure for Boron Neutron Capture Therapy", M. Frederick Hawthorne and Robert R. Kane, U.S. Patent #5,856,551.

PRESENTATIONS

Past 3 years, of a total of 61

- 2005 Invited seminar presentation at the Texas Southern University, October 6, Houston, TX: "Organic Chemistry on Fresh Flesh"
 Invited seminar, Stryker Orthopaedics, May 10, Mahwah, NJ: "Meniscal Repair"
 Poster Presentation, 30th Annual Meeting of the Society for Biomaterials, April 28, Memphis, TN: "Spatially-defined Modification Of Fresh Tissues Using Covalent Chemistry"
 Invited seminar presentation at the University of Mary Hardin Baylor Department of Chemistry, March 24, Belton, TX: "Organic Chemistry on Fresh Flesh"
- 2004 Brief research presentation at the Baylor University Sciences Building Dedication Symposium, September 23, Waco, TX: "Organic Chemistry on Fresh Flesh"
 Invited seminar presentation at the Texas Lutheran University Department of Chemistry, October 1, Seguin, TX: "Organic Chemistry on Fresh Flesh"
 Invited seminar presentation at the Texas Womens University Department of Chemistry, February 6, Denton, TX: "Synthetic and Mechanistic Studies of Photochemical Tissue-Welding Agents"

- 2003 Invited seminar presentation at the Texas Lutheran University Department of Chemistry, November 21, Seguin, TX: “Synthetic and Mechanistic Studies of Photochemical Tissue-Welding Agents”
- Invited seminar presentation at the TAMU-Commerce, Department of Chemistry, March 6, Commerce, TX: “Synthetic and Mechanistic Studies of Photochemical Tissue-Welding Agents”

OTHER PROFESSIONAL INFORMATION

MEMBERSHIPS: American Chemical Society (since 1986); AAAS.

MANUSCRIPTS REVIEWED: Chirality, Journal of Neuro-oncology, British Journal of Cancer, Molecules, Journal of the American Chemical Society, John Wiley & Sons (textbooks), Journal of Organic Chemistry, Tissue Engineering, Journal of Chemical Education, Inorganic Chemistry, Bioorganic and Medicinal Chemistry Letters, Bioconjugate Chemistry, Journal of Labeled Compounds and Radiopharmaceuticals..

PROPOSALS REVIEWED: Petroleum Research Foundation, Research Corp.

TEXTS REVIEWED: Bruice – *Organic Chemistry*, Carey – *Organic Chemistry*, Solomons – *Organic Chemistry*.