

Curriculum Vitae  
***Kay Michille Brummond***

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**Personal**

Date, Place of Birth	July 4, 1962, Blair, Nebraska, USA
Citizenship	United States of America
Marital Status	Married, Joseph L. Kent, Patent Attorney, K&L Gates

**Academic Appointments**

2010	<i>Visiting Professor</i> , Université Pierre et Marie Curie-Paris 6, Paris, France, Fall 2010
2008	<i>Visiting Professor</i> , Department of Chemistry, Massachusetts Institute of Technology (MIT), Boston, MA, Spring 2008
2007-2010	<i>Member</i> , University of Pittsburgh Drug Discovery Institute, Pittsburgh, PA.
2006	<i>Professor</i> , Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.
2005– 2008	<i>Deputy Core Director</i> , University of Pittsburgh Molecular Libraries Screening Center-Synthetic Chemistry Core, Pittsburgh, PA.
2002	<i>Vice-Director</i> , University of Pittsburgh Chemical Methodology and Library Development Center, Pittsburgh, PA.
2001 – 2006	<i>Associate Professor</i> , Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.
2000 – 2001	<i>Adjunct Associate Professor</i> , Department of Basic Pharmaceutical Sciences, West Virginia University, Morgantown, WV.
1999 – 2001	<i>Associate Professor</i> , Department of Chemistry, West Virginia University, Morgantown, WV.
1993 – 1999	<i>Assistant Professor</i> , West Virginia University, Morgantown, WV.

**Education**

1991 – 1993	<i>Postdoctoral Fellow</i> , University of Rochester, Rochester, NY. Mentor: Professor Robert K. Boeckman, Jr.
1987 – 1991	<i>Ph.D., Organic Chemistry</i> , Pennsylvania State University, State College, PA. Mentor: Professor Raymond L. Funk
1986 – 1987	<i>Doctoral Student</i> , University of Nebraska-Lincoln, Lincoln, NE. Mentor: Professor Raymond L. Funk
1980 – 1985	<i>Bachelor of Science</i> , University of Nebraska-Lincoln, Lincoln, NE.

**Honors and Awards**

2010 American Chemical Society Fellow

University of Pittsburgh Drug Discovery Institute, Member 2007 – 2010.

Carnegie Science Center Award-Emerging Female Scientist, 2007.

American Chemical Society Akron Section Award, 2007.

Alternate Councilor, Division of Organic Chemistry-ACS, Elected, 2006 – 2008.

NIH Synthetic and Biological Chemistry Study Section A, Permanent Member, 2005 – 2009.

Chancellor's Distinguished Research Award, Junior Scholar Awardee, University of Pittsburgh, 2003.

Johnson & Johnson Focused Giving Award, 2002 – 2005.

Departmental Outstanding Faculty Award, Department of Chemistry, West Virginia University, 1999.

National Science Foundation-CAREER Award, 1998 (declined to accept NIH Award).

General Electric Faculty of the Future, 1994 – 1995.

**Editorial and Advisory Boards**

Guest Editor, *Beilstein Journal of Organic Chemistry*, 2011. Thematic Issue, Allene Chemistry.

Advisory Board, *Beilstein Journal of Organic Chemistry*, 2009-present.

Editorial Advisory Board, *Journal of Organic Chemistry*, Member, 2007 – present.

Board of Editors, *Organic Synthesis*, Member, 2006 – 2014.

Guest Editor, *Tetrahedron Symposium-in-Print Series*, "Natural Product Synthesis: New Applications of Metal-Catalyzed Reactions." Volume 62, Issue 45, 2006.

Invited Expert Analyst, *Chemtracts: Organic Chemistry*, 1999 – present.

**Conferences, Symposia and Workshops Organized**

Co-organizer of the workshop, "Computationally-Assisted and Accelerated Reaction Discovery" at the Telluride Science Research Center, Telluride, Colorado, June 19-24, 2011.

Organized a COACH workshop to take place in Pittsburgh, PA on October 1, 2011.

Organizer of the ACS Ernest Guenther Award in Organic Chemistry, honoring Peter Wipf, National Meeting of the ACS, Spring 2009.

Organizer of the ACS Award in Organometallic Chemistry, honoring David Milstein, National Meeting of the ACS, Spring 2006.

Co-organizer of Symposium "Allenes in Organic Synthesis." National Meeting of the ACS, Spring 2006.

Organic Reactions and Processes Gordon Research Conference, Chair, 2004.

Organic Reactions and Processes Gordon Research Conference, Vice-Chair, 2003.

**Invited Symposia**

Pacificchem 2010: Diversity-oriented Synthesis Symposium, Hawaii, December 15-20, 2010

Pacificchem 2010: Green Chemistry Symposium, Honolulu, Hawaii, December 15-20, 2010

20<sup>th</sup> International Symposium: Synthesis in Organic Chemistry, Churchill College, Cambridge, England, July 16-20, 2007.

21<sup>st</sup> Annual W.S. Johnson Symposium in Organic Chemistry, Stanford University, Palo Alto, CA October 14, 2006.

Sixth Annual Symposium on Advances in Organic Chemistry and Synthesis at the Chemical Methods and Library Development, Boston, MA, June, 2006.

Nakanishi Award Symposium, ACS National Meeting, San Diego, CA, March 16, 2005.

Women in Organic Chemistry Symposium, ACS National Meeting, Philadelphia, PA, August 24, 2004.

Symposium on the Latest Trends in Organic Synthesis, St. Catherines, Ontario, Canada, August 11, 2004.

Pfizer Organic Symposium, University of Toronto, Toronto, Canada, November 8, 2002.

Procter & Gamble Organic Symposium, Cincinnati, OH, August 2, 2002.

Connecticut Organic Symposium, Yale University, New Haven, CT, January 11, 2002.

Frontiers of Science Symposium, Invited Participant, Sponsored Jointly by the American Chemical Society and Gesellschaft Deutscher Chem., Munich, Germany, 2000.

Synthetic Organic Chemistry for the 21<sup>st</sup> Century Symposium, ACS National Meeting, 1999.

NSF Workshop on Organic Synthesis and Natural Products, Invited Speaker, Ward, Colorado, 1999.

**Publications (Independent)**

1. "Complete Transfer of Chirality in an Intramolecular Thermal [2 + 2] Cycloaddition of Allene-yne to Form Non-Racemic Spirooxindoles." Kay M. Brummond and Joshua M. Osbourn, *Beilstein J. Org. Chem.*, **2011**, *in press*.
2. "Chemical Methodology as a Source of Small-Molecule Checkpoint Inhibitors and Hsp70 Modulators." Donna M. Huryna, Jeffrey L. Brodsky, Kay M. Brummond, Peter G. Chambers, Benjamin Eyre, Alex W. Ireland, Masaoki Kawasumi, Matthew G. LaPorte, Kayla Lloyd, Baptiste Manteau, Paul Nghiem, Bettina Quade, Sandlin P. Seguin, and Peter Wipf, *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, *108*, 6757-6762.

3. “Diverging DOS Strategy Using an Allene-Containing Tryptophan Scaffold and a Library Design that Maximizes Biologically Relevant Chemical Space While Minimizing the Number of Compounds.” Thomas O. Painter, Lirong Wang, Supriyo Majumder, Xiang-Qun Xie, and Kay M. Brummond, *ACS Combinatorial Science*. **2011**, *13*, 166–174.
4. “Allenenes: The Changing Landscape of Csp.” Kay M. Brummond, *Beilstein J. Org. Chem.* **2011**, *7*, 394-395.
5. “Differentiating Mechanistic Possibilities for the Thermal Intramolecular [2 + 2] Cycloaddition of Allene-ynes.” Matthew Siebert, Joshua M. Osbourn, Kay M. Brummond and Dean J. Tantillo, *J. Am. Chem. Soc.* **2010**, *132*, 11952-11966.
6. “A Thermally-Induced, Tandem [3,3]-Sigmatropic Rearrangement/[2 +2] Cycloaddition Approach to Carbocyclic Spirooxindoles.” Kay M. Brummond and Joshua M. Osbourn *Beilstein J. Org. Chem.* **2010**, *6*, Published April 8.
7. “Rh(I)-Catalyzed Cyclocarbonylation of Allenol Esters to Prepare Acetoxy 4-Alkylidene Cyclopent-3-en-2-ones.” Kay M. Brummond and Matthew Davis, *J. Org. Chem.* **2009**, *74*, 8314-8320.
8. Cdc25B Dual Specificity Phosphatase Inhibitors Identified in a High Throughput Screen of the NIH Compound Library.” Paul A. Johnston, Caleb Foster, Marni Brisson Tierno, Tong Ying Shun, Sunita N. Shinde, William D. Paquette, Kay M. Brummond, Peter Wipf, John S. Lazo *Assay and Drug Development Technologies* **2009**, *7*, 253-265.
9. “Design and Synthesis of a Library of Tetracyclic Hydroazulenoisindoles.” Kay M. Brummond, Shuli, Mao, Sunita N. Shinde, Paul A. Johnston, Billy W. Day, *J. Comb. Chem.* **2009**, *10*, 486-494.
10. “Synthesis and Antiviral activity of the Naturally Occurring (-)-1,3,5-tri-O-Caffeoylquinic Acid and Analogs.” Kay M. Brummond and Jolie E. Deforrest, *Synlett* **2009**, 1517-1519.
11. “Skeletal and Appendage Diversity as Design Elements in the Synthesis of a Discovery Library of Nonaromatic Polycyclic 5-Iminooxazolidin-2-ones, Hydantoins, and Acylureas.” Stefan Werner, David M. Turner, Pete G. Chambers and Kay M. Brummond *Tetrahedron Symposia-in-Print, Synthetic Advances in Transition Metal-Catalyzed Bond-Forming Reactions* **2008**, *64*, 6997-7007.
12. “A General Synthetic Route to Differentially Functionalized Angularly and Linearly Fused [6-7-5] Ring Systems: A Rh(I)-Catalyzed Cyclocarbonylation Reaction.” Kay M. Brummond, Daitao Chen and Matthew M. Davis *J. Org. Chem.* **2008**, *73*, 5064-5068.
13. “Towards a Molecular Understanding of the Interaction of Dual-Specificity Phosphates with Substrates: Insights from Structure-Based Modeling and High Throughput Screening.” Ahmet Bakan, J.S. Lazo, Peter Wipf, Kay M. Brummond and Ivet Bahar *Current Medicinal Chemistry* **2008**, *15*, 2536-2544.

14. "Mo(CO)<sub>6</sub>- and [Rh(CO)<sub>2</sub>Cl]<sub>2</sub>-Catalyzed Allenic Cyclocarbonylation Reactions of Alkynones: Efficient Access to Bicyclic Dienediones." Kay M. Brummond and Daitao Chen *Org. Lett.* **2008**, *10*, 705-708.
15. "Diverging Rh(I)-Catalyzed Carbocyclization Strategy to Prepare a Library of Unique Cyclic Ethers." Shuli Mao, Donald A. Probst, Stefan Werner, Jianzhong Chen, Xiangqun Xie and Kay M. Brummond *J. Comb. Chem.* **2008**, *10*, 235-246.
16. "A Rh(I)-Catalyzed Cycloisomerization Reaction Affording Cyclic Trienones." Kay M. Brummond, Daitao Chen, Thomas O. Painter, Shuli Mao and Darla D. Seifried *Synlett* **2008**, 759-764. *Cluster: Acetylene and Allene Chemistry*.
17. "Rh(I)-Catalyzed Cycloisomerization Reaction of Yne-Allenamides: An Approach to Cyclic Enamides." Kay M. Brummond, Bingli Yan *Synlett* **2008**, 2303-2309.
18. "A Cell-based Phenotypic and Biochemical Screening System for the Discovery of Small Molecule Inhibitors of Cytoplasmic Dynein." Guangyu Zhu, Xinjia Wang, Christine M. Wright, Stefan Werner, Branko Mitasev, Kay M. Brummond, Peter Wipf, Jeffrey L. Brodsky, Donald B. DeFranco and Billy W. Day, *manuscript submitted for publication*.
19. "Rhodium(I)-Catalyzed Allenic Carbocyclization Reaction Affording  $\delta$ - and  $\epsilon$ -Lactams." Kay M. Brummond, Thomas O. Painter, Donald A. Probst and Branko Mitasev *Org. Lett.* **2007**, *9*, 347-349.
20. "Structurally Unique Inhibitors of Human Mitogen-activated Protein Kinase Phosphatase-1 Identified in a Pyrrole Carboxamide Library." John S. Lazo, John J. Skoko, Stefan Werner, Branko Mitasev, Ahmet Bakan, Fumito Koizumi, Archibong Yellow-Duke, Ivet Bahar, and Kay M. Brummond *J. Pharmacol. & Experimental Therapeutics* **2007**, *322*, 940-947.
21. "Design and Synthesis of a 3,4-Dehydroproline Amide Discovery Library." Stefan Werner, Dhanalakshmi Kasi and Kay M. Brummond *J. Comb. Chem.* **2007**, *9*, 677-683.
22. "Cycloaddition Reactions of Amino-Acid Derived Cross-Conjugated Trienes: Stereoselective Synthesis of Novel Heterocyclic Scaffolds." Branko Mitasev, Bingli Yan and Kay M. Brummond, *Honorary Issue for Professor Steven Weinreb, Heterocycles* **2006**, *70*, 367-388.
23. "The Allenic Alder-ene Reaction: Constitutional Group Selectivity and its Application to the Synthesis of Ovalicin." Kay M. Brummond and Jamie M. McCabe, *Tetrahedron Symposia-in-Print, New Applications of Metal Catalysis in Natural Product Synthesis* **2006**, *62*, 10541-10554.
24. "Synthesis of Functionalized  $\Delta^3$ -Pyrrolines via a Ag(I)-Catalyzed Cyclization of Amino Acid Derived Allenes." Branko Mitasev and Kay M. Brummond *Honorary Issue for Professor Richard Heck, Synlett* **2006**, 3100-3104.
25. "Solution-Phase Synthesis of a Tricyclic Pyrrole-2-Carboxamide Discovery Library Applying a Stetter-Paal-Knorr Reaction Sequence." Stefan Werner, Pravin S. Iyer, Matthew

- D. Fodor, Claire M. Coleman, Leslie A. Twining, Branko Mitasev and Kay M. Brummond *J. Comb. Chem.* **2006**, 8, 368-380.
26. "Computational Insight Concerning Catalytic Decision Points of the Transition Metal Catalyzed [2 + 2 + 1] Cyclocarbonylation Reaction of Allenes." Alexander S. Bayden, Kay M. Brummond and Kenneth Jordan *Organometallics* **2006**, 25, 5204-5206.
27. "Trimethylaluminum (TMA)-Catalyzed Reaction of Alkynyllithiums with Ethylene Oxide: Increased Yields and Purity of Homopropargylic Alcohols." Kay M. Brummond and Jamie M. McCabe *Synlett* **2005**, 2457-2460.
28. "Microwave-Assisted Intramolecular [2 + 2] Allenic Cycloaddition Reaction for the Rapid Assembly of Bicyclo[4.2.0]octa-1,6-dienes and Bicyclo[5.2.0]nona-1,7-dienes." Kay M. Brummond and Daitao Chen *Org. Lett.* **2005**, 7, 3473-3475.
29. "Heterocyclic  $\alpha$ -Alkylidene Cyclopentenones Obtained via a Pauson-Khand Reaction of Amino Acid Derived Allenynes. A Scope and Limitation Study Directed Toward the Preparation of a Tricyclic Pyrrole Library." Kay M. Brummond, Dennis P. Curran, Branko Mitasev and Stefan Fischer *J. Org. Chem.* **2005**, 70, 1745-1753.
30. "A Formal Total Synthesis of (-)-FR901483 Using a Tandem Cationic Aza-Cope Rearrangement/Mannich Cyclization Approach." Kay M. Brummond and Sang-phyo Hong *J. Org. Chem.* **2005**, 70, 907-916. *JOC Most-Accessed Articles January-June, 2005*.
31. "Rhodium(I)-Catalyzed Alder-ene Reactions." Kay M. Brummond and Jamie M. McCabe in *Modern Rhodium-Catalyzed Transformations*, P. Andrew Evans, ed., Wiley VCH, **2005**, pp. 151-172.
32. "Consecutive Rh(I)-Catalyzed Alder-ene/Diels-Alder/Diels-Alder Reaction Sequence Affording Rapid Entry to Polycyclic Compounds." Kay M. Brummond and Lingfeng You, *Tetrahedron Symposia-in-Print, Applications of Catalysis in Industry and Academia* **2005**, 61, 6180-6185.
33. "Allenenes and Transition Metals: A Diverging Approach to Heterocycles." Kay M. Brummond and Branko Mitasev *Org. Lett.* **2004**, 6, 2245-2248.
34. "Rhodium(I)-Catalyzed Ene-Allene Carbocyclization Strategy for the Formation of Azepines and Oxepines." Kay M. Brummond, Hongfeng Chen, Branko Mitasev and Anthony D. Casarez *Org. Lett.* **2004**, 6, 2161-2163.
35. "The First Total Synthesis of 15-Deoxy- $\Delta^{12,14}$ -prostaglandin J<sub>2</sub> and the Unambiguous Assignment of the C<sup>14</sup> Stereochemistry." Kay M. Brummond, Peter C. Sill and Hongfeng Chen *Org. Lett.* **2004**, 6, 149-152.
36. "Unique Strategy for the Assembly of the Carbon Skeleton of Guanacastepene A Using an Allenic Pauson-Khand-Type Reaction." Kay M. Brummond and Dong Gao *Org. Lett.* **2003**, 5, 3491-3494.

37. "A Rhodium(I)-Catalyzed Formal Allenic Alder-ene Reaction for the Rapid and Stereoselective Assembly of Cross-Conjugated Trienes." Kay M. Brummond, Hongfeng Chen, Peter C. Sill and Lingfeng You *J. Am. Chem. Soc.* **2002**, *124*, 15186-15187.
38. "Chiral Nonracemic  $\alpha$ -Alkylidene and  $\alpha$ -Silylidene Cyclopentenones from Chiral Allenes Using an Intramolecular Allenic Pauson-Khand-Type Cycloaddition." Kay M. Brummond, Angela D. Kerekes and Honghe Wan *J. Org. Chem.* **2002**, *67*, 5156-5163.
39. "A Silicon Tethered Allenic Pauson-Khand Reaction." Kay M. Brummond, Brenden Rickards, Peter C. Sill and Steven J. Geib *Tetrahedron Lett.* **2002**, *43*, 3735-3738.
40. "An Allenic Pauson-Khand-Type Reaction: A Reversal in  $\pi$ -Bond Selectivity and the Formation of Seven-Membered Rings." Kay M. Brummond, Hongfeng Chen, Kimberly D. Fisher, Angela D. Kerekes, Brenden Rickards, Peter C. Sill and Steven J. Geib *Org. Lett.* **2002**, *4*, 1931-1934.
41. "Tandem Cationic Aza-Cope Rearrangement-Mannich Cyclization Approach to the Core Structure of FR901483 via a Bridgehead Iminium Ion." Kay M. Brummond and Jianliang Lu, *Org. Lett.* **2001**, *3*, 1347-1349.
42. "A Rapid Synthesis of Hydroxymethylacylfulvene (HMAF) Using the Allenic Pauson-Khand Reaction. A Synthetic Approach to Either Enantiomer of this Illudane Structure." Kay M. Brummond, Jianliang Lu and Jeff Petersen *J. Am. Chem. Soc.* **2000**, *122*, 4915-4920.
43. "A Short Synthesis of the Potent Antitumor Agent ( $\pm$ )-Hydroxymethylacylfulvene Using an Allenic Pauson-Khand Type Cycloaddition." Kay M. Brummond and Jianliang Lu *J. Am. Chem. Soc.* **1999**, *121*, 5087-5088.
44. "Solid-Phase Synthesis of BRL 49653." Kay M. Brummond and Jianliang Lu *J. Org. Chem.* **1999**, *64*, 1723-1726.
45. " $\alpha$ -Chlorination of Ketones Using *p*-Toluenesulfonyl Chloride." Kay M. Brummond and Kirsten D. Gesenberg *Tetrahedron Lett.* **1999**, *40*, 2231-2234.
46. "Polymorphism in Myristoylpalmitoylphosphatidylcholine." Stephanie Tristram-Nagle, Yisrael Isaacson, Yulia Lyatskaya, Yufeng Liu, Kay Brummond, John Katsaras, John F. Nagle *Chem. Phys. Lipids* **1999**, *100*, 101-110.
47. "A New Method for the Preparation of Alkynes from Vinyl Triflates." Kay M. Brummond, Kirsten D. Gesenberg, Joseph L. Kent and Angela D. Kerekes *Tetrahedron Lett.* **1998**, *39*, 8613-8616.
48. "An Intramolecular Allenic [2 + 2 + 1] Cycloaddition." Kay M. Brummond, Honghe Wan and Joseph L. Kent *J. Org. Chem.* **1998**, *63*, 6535-6545.
49. "The Allenic Pauson-Khand Cycloaddition. Dependence in  $\pi$ -Bond Selectivity on Substrate Structure." Kay M. Brummond and Honghe Wan *Tetrahedron Lett.* **1998**, *39*, 931-934.

50. "Strategy for the Preparation of Allenes from  $\alpha,\beta$ -Unsaturated and Saturated Ketones via Enol Phosphates." Kay M. Brummond, Elizabeth A. Dingess and Joseph L. Kent *J. Org. Chem.* **1996**, *61*, 6096-6097.
51. "A New Allenic Pauson-Khand Cycloaddition for the Preparation of  $\alpha$ -Methylene Cyclopentenones." Joseph L. Kent, Honghe Wan and Kay M. Brummond *Tetrahedron Lett.* **1995**, *36*, 2407-2410.

### Reviews and Book Chapters

52. "Discovery of Chemical Reactions Through Multidimensional Screening." Kay M. Brummond and Jennifer A. Loyer-Drew *Chemtracts Special Thematic Issue, Combinatorial Chemistry* **2008**, *20*, 185-190.
53. "Rhodium-Catalyzed Cycloisomerization Reactions of Allenes in Diversity Oriented Synthesis." Kay M. Brummond and Branko Mitasev *Strategies and Tactics in Organic Synthesis, Honorary Volume for Professor Paul Wender, Volume 7*, **2008**, 328-366.
54. "Environmentally Benign Solvent Systems: Toward a Greener [4 + 2] Cycloaddition Process." Kay M. Brummond and Christopher K. Wach *Mini-Reviews in Organic Chemistry* **2007**, *4*, 281-290.
55. "Synthesizing Allenes Today (1982-2006)." Kay M. Brummond and Jolie E. Deforrest, *Synthesis* **2007**, *6*, 795-818.
56. "The Direct Proline-Catalyzed Enantioselective Aza-Diels-Alder Reaction: From Development to Use in Natural Product Synthesis." Thomas O. Painter and Kay M. Brummond *Chemtracts* **2006**, *19(10)*, 377-384.
57. "C-C Bond Formation (Part 1) by Addition Reactions: Alder-ene Reaction." Kay M. Brummond and Jennifer A. Loyer-Drew, in *Comprehensive Organometallic Chemistry, Third Edition, 2006, Applications II: Transition Metal Compounds in Organic Synthesis, Volume 10*, pp 557-601.
58. "Hexacarbonylmolybdenum." John W. Faller, Kay M. Brummond and Branko Mitasev *e-EROS Encyclopedia of Reagents for Organic Synthesis* **2006**.
59. "Allenenes in Natural Product Synthesis." Kay M. Brummond and Hongfeng Chen in *Modern Allene Chemistry*, N. Krause, ed., Wiley VCH, **2004**, *Volume 2*, pp. 1041-1090.
60. "4-Benzyloxybutanal." Kay M. Brummond, *e-EROS Encyclopedia of Reagents for Organic Synthesis* **2003**.
61. "Synthesis of ( $\pm$ )-Arisugacin A Using a Formal [3 + 3] Cycloaddition Reaction." Kay M. Brummond *Chemtracts* **2002**, *15(7)*, 373-379.



62. "A Novel Application of a Pd(0)-Catalyzed Nucleophilic Substitution Reaction to the Regio- and Stereoselective Synthesis of Lactam Analogues of the Epothilone Natural Products." Kay M Brummond and Joseph L. Kent *Chemtracts* **2001**, 14(7), 401-404.
63. "Recent Advances in the Pauson-Khand Reaction and Related [2 + 2 + 1] Cycloadditions." Kay M. Brummond and Joseph L. Kent *Tetrahedron* **2000**, 56, 3263-3283.
64. "An Allenic [2 + 2 + 1] Cycloaddition." Kay M. Brummond in *Advances in Cycloaddition Chemistry, Volume 6*, Harmata, M. ed., JAI Press Inc., Stamford, Connecticut, **1999**, pp. 211-237.

### Undergraduate Research Assistants

*Greg Aaron*, 1 semester, U of Pittsburgh, Chemistry Major.

*Vincent Barth*, summer, undergraduate at École Polytechnique, Palaiseau, France.

*Angela Berry*, 2 semesters, WVU, Located: Boehringer Ingelheim, Ridgefield, CT.

*Bobby Burches*, U of Pittsburgh, *Howard Hughes MI 2002 Summer Research Fellow*.

*Elizabeth Dingess*, 2 semesters, WVU, Located: Eli Lilly, Indianapolis, IN.

*Patrick O'Donnell*, 4 semesters, WVU, Located: U of Florida, Graduate Program in Chemistry.

*Benjamin Eyer*, summer, undergraduate at Allegheny College.

*Derek Hammond*, 2 semesters, WVU, Chemistry Major.

*Daniel Harki*, 3 semesters, WVU, Located: Postdoc, California Institute of Technology.

*Jason Hawkins*, 3 semesters, WVU, Located: Mylan Pharmaceuticals, Morgantown, WV.

*Samuel Kim*, 4 semesters, U of Pittsburgh, *Pfizer Undergraduate Research Fellowship Summer 2004*.

*Matthew Kluge*, 2 semesters, U of Pittsburgh, Chemistry Major.

*Jomei Liao*, 1 semester, U of Pittsburgh.

*Mary Martucci*, 1 semester, U of Pittsburgh, *Summer 2004 REU Fellow*, Located: Colorado State University, Graduate Program in Chemistry.

*Joseph Minardi*, 2 semesters, WVU, Located: West Virginia University Medical School.

*Stephanie Moran*, 2 semesters, WVU, Located: Union Carbide, Charleston, WV.

*Ruchi Nagpal*, 2 semesters, U of Pittsburgh, Located: University of Pittsburgh School of Dentistry.

*Nick Naro*, current, University of Pittsburgh, Chemistry Major.

*Thomas Painter*, 2 semesters, U of Pittsburgh, Located: Pittsburgh Graduate Program in Chemistry.

*Katie Paris*, current, University of Pittsburgh, Chemistry Major, thesis 2011.

*Brenden Rickards*, 5 semesters, WVU, *Pfizer Undergraduate Research Fellowship Summer 1999*, Located: Princeton University, Graduate Program in Biochemistry.

*Darla Seifried*, 4 semesters, U of Pittsburgh, Located: Merck Research

Anne Sendeck, current, University of Pittsburgh, Chemistry Major.

Mark Sperry, 4 semesters, U of Pittsburgh, Located: Drexel Medical School.

Jennifer Sutton, 2 semesters, WVU.

Paul Zipper, 1 semester, U of Pittsburgh.

### Graduate Research Assistants

Laura Kocsis, Ph.D. Candidate, Pittsburgh, anticipated graduation date, 2014.

Joshua M. Osbourn, Ph.D. Candidate, Pittsburgh, anticipated graduation date, 2012.

Adam D. Rosenberg, M.S. thesis entitled, "A Cyclocarbonylation Approach to Rippertene." University of Pittsburgh, July 2009.

Matthew M. Davis, M.S. thesis entitled, "The Rh(I)-Catalyzed Cyclocarbonylation of Allenol Esters to Prepare  $\alpha$ -Acetoxy 4-Alkylidene Cyclopent-3-en-2-ones." University of Pittsburgh, July 2009.

Jolie E. De Forrest, Ph.D. thesis entitled, "The Allenic Carbocyclization Reaction of Allene-ynes: Progress towards the Syntheses of Fumagillol and Ovalicin." University of Pittsburgh, April 2009.

Thomas O. Painter, Ph.D. thesis entitled, "Application of Allene-ynes to the Synthesis of Novel Carbocyclic and Heterocyclic Scaffolds." University of Pittsburgh, April 2009. Postdoctoral fellow with Professor Jeff Aube, University of Kansas, Medicinal Chemistry Department.

Jennifer A. Loyer-Drew, M.S. thesis entitled, "A 1,3-Dipolar Cycloaddition Approach to the Synthesis of Resiniferatoxin." University of Pittsburgh, July 2008. Located: Gilead Sciences, Inc. Seattle, Washington.

Remond Moningka, M.S. thesis entitled, "Progress Toward the Total Synthesis of Guanacastepene A Via a Rh(I)-Catalyzed Cyclocarbonylation Reaction." University of Pittsburgh, May 2008, Located: Merck Pharmaceuticals, New Jersey.

Jamie M. McCabe, Ph.D., thesis entitled, "Application of Rh(I)-Catalysis to Natural Product Synthesis: Routes to Ovalicin and Guanacastepene." University of Pittsburgh, May 2007, Located: Merck Pharmaceuticals, Union, New Jersey.

Branko Mitasev, Ph.D., thesis entitled, "Transition-Metal Catalyzed Reactions of Allenes in Diversity Oriented Synthesis." University of Pittsburgh, May 2007, Located: Eisai Research Institute, Andover, MA.

Christopher K. Wach, M.S., thesis entitled, "Environmentally Benign Solvent Systems: Toward a Greener [4 +2] Cycloaddition Process." University of Pittsburgh, 2006, Located: Graduate Program in Philosophy, Indiana University, Bloomington, IN.

Alexander S. Bayden, Ph.D., thesis entitled, "Modeling Organorhodium Catalysis." University of Pittsburgh, December 2005, Served as co-mentor with Professor Ken Jordan.

*Lingfeng You*, Ph.D., thesis entitled, "Consecutive Rh(I)-Catalyzed Alder-ene/Diels-Alder/Diels-Alder Reaction Sequence Affording Rapid Entry to Polycyclic Compounds." University of Pittsburgh, 2005, Located: Albany Molecular Research, Inc., Albany, NY.

*Anthony D. Casarez*, M.S., thesis entitled, "Rhodium(I)-Catalyzed Cycloisomerization of Tethered Ene-Allenes: Formation of Tetrahydroazepines." University of Pittsburgh, 2005, Located: Ph.D. candidate, Professor David MacMillan, Princeton University, Princeton, NJ.

*Prasan Tangyuenyongwatana*, M.S., thesis entitled, "Synthesis of the Bridged Bicyclic Intermediate of Suberosenone." University of Pittsburgh, 2004, Located: Thailand.

*Dong Gao*, M.S., thesis entitled, "An Allenic Pauson-Khand Approach to Guanacastepene A." University of Pittsburgh, 2003, Located: Mylan Pharmaceuticals, Morgantown, WV.

*Kimberly D. Fisher*, M.S., thesis entitled, "Expansion of the Scope of the Allenic Pauson-Khand Reaction to Include Carboxylic Acids and Esters." West Virginia University, 2002, Located: Ph.D. candidate, Professor Bjorn Soderberg, WVU.

*Li Sha*, M.S., thesis entitled, "A Synthetic Approach to FR901483." West Virginia University, 2001, Located: Astra-Zeneca, NJ.

*Angela D. Kerekes*, Ph.D., thesis entitled, "I. Chirality Transfer in the Allenic [2 + 2 + 1] Cycloaddition Reaction. II. An Approach Towards the Synthesis of Antitumor Agent, ( $\pm$ )-Suberosenone, Using an Allenic [2 + 2 + 1] Cycloaddition Reaction." West Virginia University, 2000, Located: Merck Pharmaceuticals, Kenilworth, NJ.

*Honghe Wan*, M.S., thesis entitled, "Allenenes and [2 + 2 + 1] Cycloaddition Reactions." West Virginia University, 1998, Located: Bristol-Myers Squibb, Wallingford, CT.

*Elizabeth A. Dingess*, M.S., thesis entitled, "A New Method for the Preparation of Allenes from Ketones and Investigation of the Silicon-Tethered [2 + 2 + 1] Cycloaddition Reaction." West Virginia University, 1998, Located: Eli Lilly, Indianapolis, IN.

### Postdoctoral Associates

*Kainan Zhang*, Ph.D., 2011-present.

*Bo Wen*, Ph.D., 2011-present.

*Francois Grillet*, Ph.D., 2010-present.

*Chaofeng Wang*, Ph.D., 2009-2010.

*Baptiste Manteau*, Ph.D., 2010-2011.

*Supriyo Mujumder*, Ph.D., 2009-2010, Located: University of Michigan.

*Daitao Chen*, Ph.D., 2004 – 2007, Located: Scynexis, Inc., Durham, NC.

*Bingli Yan*, Ph.D., 2005 – 2007, Located: Sigma-Aldrich, St. Louis, MO.

*Donald A. Probst*, Ph.D., 2004 – 2007, Located: Radiopharmaceuticals, St. Louis, MO.

*Hongfeng Chen*, Ph.D., 2001 – 2004, Located: Johnson & Johnson Pharmaceuticals,  
New Brunswick, NJ.

*Sang-phyo Hong*, Ph.D., 2001 – 2004, Located: H. Lundbeck A/S, NJ.

*Peter C. Sill*, Ph.D., 1999 – 2002, Deceased.

*Jianliang Lu*, Ph.D., 1997 – 2000, Located: Eli Lilly, Indianapolis, IN.

### Visiting Scientists and Scholars

*Vincent Barth*, B.S., Ecole Nationale Supérieure des Techniques Avancées, France

*Joseph L. Kent*, Ph.D., Located: K&L Gates, Pittsburgh, PA.

*Kirsten D. Gesenberg*, M.S., Located: Bristol-Myers Squibb, Wallingford, CT.

*Ysrael Isaacson*, M.D., Ph.D., Located: Veteran's Admin. Hospital, Pittsburgh, PA.

### Collaborators

*Ivet Bahar*, Ph.D., John K. Vries Chair in Computational Biology, Department of Computational Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

*Mu-Hyun Baik*, Ph.D., Professor of Chemistry, Professor of Informatics, Indiana University, Bloomington Indiana.

*Dennis P. Curran*, Ph.D., Distinguished Service Professor and Bayer Professor, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.

*Billy W. Day*, Ph.D., Professor, Department of Pharmaceutical Sciences, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.

*Paul E. Floreancig*, Ph.D., Associate Professor, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.

*Kenneth Jordan*, Ph.D., Distinguished Professor of Computational Chemistry, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.

*John S. Lazo*, Ph.D., Allegheny Foundation Professor, Department of Pharmacology and Chemical Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

*Mathias McIntosh*, Ph.D., Professor of Chemistry, University of Arkansas, Department of Chemistry, Fayetteville, AR.

*Paul Ngheim*, M.D., Ph.D. Associate Professor, University of Washington Dermatology, Fred Hutchinson Cancer Research Center, Seattle, WA.

*Michael Parniak*, Ph.D., Professor, Department of Molecular Virology and Microbiology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

*Dean J. Tantillo*, Ph.D., Professor, Department of Chemistry, University of California-Davis, Davis, CA.

*Paul Wender*, Ph.D., Bergstrom Professor of Chemistry, Department of Chemistry,

Professor of Chemical and Systems Biology (by courtesy), Stanford Medical School, Stanford University, Stanford, CA.

*Peter Wipf*, Ph.D., University Professor of Chemistry, Department of Chemistry, Director of Centers of Combinatorial Chemistry and Chemical Methodology and Library Development, Professor of Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, PA.

**Invited Lectures and Conferences**

2011

University of Ottawa, Canada, December 7

University of Sydney, Sydney, Australia, October

University of New South Wales, Sydney, Australia, October

University of Melbourne, Melbourne, Australia, October

Australian National University, Australia, October

Cephalon, Inc., Westchester, PA, March 8.

2010

University of Aix-Marseille, Marseille, France, October 30.

University of Pierre and Marie Curie, Paris, France, October 25.

Sanofi-Aventis-Ecole Polytechnique, June 11.

French American Chemical Society (FACS XIII), June 6-10.

Heterocyclic Compounds Gordon Research Conference, June 20-25.

George Mason University, April 1 (recruiting).

2009

Schering-Plough Research Institute, Union, New Jersey, October 15.

GECCO 50, Strasbourg, France, September 1-4.

Natural Products Gordon Research Conference, New Hampshire, July 26-30.

University of California-Davis, Davis, California, April 28.

Ohio State University, Columbus, Ohio, April 16.

Michigan State University, East Lansing, Michigan, April 9.

University of Rochester, Rochester, New York, March 4.

University of Iowa, Iowa City, Iowa, February 24.

University of Nevada, Reno, Nevada, January 16.

2008

University of Colorado, Boulder, Colorado, December 8.

North Carolina State University, Raleigh, North Carolina, October 20.

University of Minnesota, Department of Medicinal Chemistry, Minneapolis, MN, October 14.

UCB Pharma, Slough, England, September 7.

Combinatorial Chemistry Gordon Research Conference, Oxford, England, September.

Organic Reaction and Processes Gordon Research Conference, Rhode Island, July.

Rutgers University, Piscataway, New Jersey, May 16.

### 2007

Oregon State University, Corvallis, Oregon, October 6.

University of Nebraska-Lincoln Departmental Colloquium, Lincoln, Nebraska, September 14.

Gulf Coast Chemistry Conference 2007, Pensacola Beach, Florida, August.

### 2006

University of Akron, Department of Chemistry, Akron, Ohio, November 14.

Akron ACS Local Section Lecture, Akron, Ohio, November 14.

Brandeis University, Waltham, Massachusetts, October 30.

Genentech, San Francisco, California, October 12.

Mid-Atlantic Regional ACS Meeting, Hershey, Pennsylvania, June 5.

Philadelphia Organic Chemists' Club (POCC), Philadelphia, Pennsylvania, April 20.

University of Kansas, Lawrence, Kansas, April 13.

Akron ACS Section Lecture, Kent State University, Kent, Ohio, March 23.

University of San Diego, San Diego, California, March 9.

San Diego State University, San Diego, California, March 6.

Smith College, Northhampton, Massachusetts, February 16.

Mount Holyoke College, South Hadley, Massachusetts, February 15.

### 2005

New Aspects of Heterocyclic Chemistry: Pacifichem, Honolulu, Hawaii, December 14.

Green Chemical Processes: Pacifichem, Honolulu, Hawaii, December 17.

Hamilton College, Clinton, New York, November 18.

Chemical Methodology and Library Development, Boston University, Boston, Massachusetts, August 8.

Schering-Plough Pharmaceuticals, Kenilworth, New Jersey, July 20.

Biogen Pharmaceuticals, Boston, Massachusetts, July 10.

University Louis Pasteur, Strasbourg, France, June 1.

University of Paris, Paris, France, May 30.

Johnson & Johnson Pharmaceuticals, New Brunswick, New Jersey, May 10.

University of Texas-Arlington, Arlington, Texas, April 8.

University of Buffalo-SUNY, Buffalo, New York, March 23.

West Virginia University, Morgantown, West Virginia, February 23.

Swarthmore College, Swarthmore, Pennsylvania, February 10.

Stanford University, Palo Alto, California, January 26.

#### 2004

Texas A & M University, College Station, Texas, September 2.

Heterocycles Gordon Research Conference, Newport, Rhode Island, July.

ACS Regional Meeting (CERM), Indianapolis, Indiana, June 2.

Ohio Valley Organic Chemistry Symposium-Wright State University, Dayton, Ohio, May 15.

#### 2003

University of Utah, Salt Lake City, Utah, September 25.

Pfizer Inc., Ann Arbor, Michigan, September 19.

Roche-Palo Alto, Palo Alto, California, September 5.

Wyeth-Ayerst Pharmaceuticals, Pearl River, New York, August 15.

Combinatorial Chemistry Gordon Research Conference, Tilton, New Hampshire, July.

University of North Carolina-Chapel Hill, Chapel Hill, North Carolina, April 4.

University of Texas-Austin, Austin, Texas, March 26.

University of California-Irvine, Irvine, California, March 10.

University of California-Berkeley, Berkeley, California, March 4.

Merck Discovery, West Point, Pennsylvania, February 28.

Merck Process, Rahway, New Jersey, February 27.

#### 2002

Johnson & Johnson Symposium, New Brunswick, New Jersey, December 3.

Albany Molecular Research, Albany, New York, October 31.

Allegheny College, Allegheny, Pennsylvania, October 11.

Emory University, Atlanta, Georgia, October 2.

Georgia Institute of Technology, Atlanta, Georgia, October 1.

Bayer Pharmaceutical, Orange, Connecticut, September 20.

Stereochemistry Gordon Research Conference, Newport, Rhode Island, June.

Frontiers in Organic Synthesis, Abbott Laboratories, Chicago, Illinois, February 21.

2001

Midwest Regional ACS Meeting, Lincoln, Nebraska, October 12.  
Indiana University, Bloomington, Indiana, October 8.  
University of Illinois-Chicago, Chicago, Illinois, September 25.  
Natural Products Gordon Research Conference, Tilton, New Hampshire, August.  
Organic Reaction and Processes Gordon Research Conference, Bristol, Rhode Island, July.  
Heterocycles Gordon Research Conference, Newport, Rhode Island, July.  
Northeast Regional ACS Meeting, Durham, New Hampshire, June 26.  
Florida State University, Tallahassee, Florida, April 17.

2000

University of Louisville, Louisville, Kentucky, December 1.  
Wayne State University, Detroit, Michigan, November 15.  
Astra-Zeneca, Wilmington, Delaware, October 18.  
University of Rochester, Rochester, New York, October 13.  
Eastman-Kodak, Rochester, New York, October 12.  
Bristol-Myers Squibb Co., Wallingford, Connecticut, June 22.  
Bristol-Myers Squibb Pharmaceutical Research Inst., Princeton, New Jersey, June 21.  
ACS Regional Meeting Symposium, Covington, Kentucky, May 18.  
University of Arkansas, Fayetteville, Arkansas, May 1.  
University of Arizona, Tucson, Arizona, March 20.  
University of Kentucky, Lexington, Kentucky, March 3.  
R.W. Johnson Pharmaceutical Research Institute, New Brunswick, New Jersey, February 24.

1999

Massachusetts Institute of Technology, Cambridge, Massachusetts, November 18.  
University of Alabama, Tuscaloosa, Alabama, November 4.  
Pfizer Inc., Central Research Division, Groton, Connecticut, October 8.  
University of Delaware, Newark, Delaware, October 22.  
Novartis, Newark, New Jersey, September 22.  
Affymax Pharmaceuticals, Sunnyvale, California, September 3.  
Eli Lilly, Indianapolis, Indiana, July 27.  
Colorado State University, Fort Collins, Colorado, March 1.



1998

West Virginia University, Department of Pharmacy, Morgantown, West Virginia, December 3.

North Dakota State University, Fargo, North Dakota, November 11.

University of Minnesota, Minneapolis, Minnesota, November 9.

University of Pittsburgh, Pittsburgh, Pennsylvania, October 15.

The Ohio State University, Columbus, Ohio, October 8.

Pfizer Inc., Central Research Division, Groton, Connecticut, September 3.

Ohio University, Athens, Ohio, May 1.

University of Kansas-Lawrence, Lawrence, Kansas, April 23.

Kansas State University-Manhattan, Manhattan, Kansas, April 24.

University of Nebraska-Lincoln, Lincoln, Nebraska, April 22.

University of Missouri-Columbia, Columbia, Missouri, April 20.

Wesleyan University, Middletown, Connecticut, April 10.

Dartmouth College, Hanover, New Hampshire, April 9.

University of Connecticut, Storrs, Connecticut, April 8.

University of Pennsylvania, Philadelphia, Pennsylvania, March 17.

1997

Organic Reactions and Processes Gordon Research Conference, Henniker, New Hampshire, August.

West Virginia Institute of Technology, Montgomery, West Virginia, March 16.

**Oral Presentations and Posters**

1. "Intramolecular, Thermal [2 + 2] Cycloaddition Reactions of Allene-ynes: Exploring the Scope, Mechanism, and Application to Natural Product Synthesis." Brummond, Kay M.; **Joshua M. Osbourn**, 240th ACS National Meeting, Boston, MA, United States, August 22-26, 2010, ORGN-1015.
2. "Recent Developments in the Pauson Khand Reaction of Allenol-Acetates." **Supriyo Majumder**; Brummond, Kay M., 240th ACS National Meeting, Boston, MA, United States, August 22-26, 2010, ORGN-623.
3. "Toward the Synthesis of Thapsigargin." **Chaofeng Huang**, Kay M. Brummond, 240th ACS National Meeting, Boston, MA, United States, August 22-26, 2010, ORGN-1055.
4. "SAR and Protein Binding Studies of MARPIN, a Recently Discovered Synthetic Chk1-Phosphorylation Inhibitor." **Baptiste Manteau**, Kay M. Brummond, Paul Nghiem, Masaaki Kawasumi, 240th ACS National Meeting, Boston, MA, United

States, August 22-26, 2010, ORGN-657. SCI-MIX

5. "A Diverging DOS Strategy Using an Allene-yne Containing Tryptophan Scaffold." **Supriyo Majumder**, Thomas Painter, Kay M. Brummond, CMLD Annual Program Meeting, Broad Institute, August 25, 2010, Boston, MA.
6. "The Rh(I)-Catalyzed Cyclocarbonylation of Allenol Esters to Prepare  $\alpha$ -Acetoxy 4-Alkylidene Cyclopentenones." **Matthew M. Davis** and Kay M. Brummond, Graduate Student Expo, University of Pittsburgh, March 2009.
7. "Microwave Assisted Intramolecular [2 + 2] Cycloaddition of Allene-ynes Exploring the Scope, Mechanism, and Application." **Joshua M. Osbourn** and Kay M. Brummond, Microwave and Flow Chemistry Meeting 2009, Antigua, January 28-31, 2009.
8. "Application of Rhodium(I)-Catalyzed Ene-Allene Carbocyclization Strategy to Prepare a Library of Alkyl- and Alkylidene-Oxepanecarboxamides." **Shuli Mao** and Kay M. Brummond, 234th ACS National Meeting, Boston, MA, August 19-23, 2007, ORGN-010.
9. "Preparation of Enamide Skeletons via Rh(I)-Catalyzed Alder-ene Reaction." **Bingli Yan** and Kay M. Brummond, 232nd ACS National Meeting, San Francisco, CA, United States, September 10-14, 2006, ORGN-948.
10. "Rh(I)-Catalyzed Allenic Pauson-Khand Reaction for Efficient Construction of Complex [6-7-5] Tricyclic Skeletons." **Daitao Chen** and Kay M. Brummond, 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006 ORGN-889.
11. "Efforts Towards Ovalicin and Fumigillol via a Rhodium(I)-Catalyzed Alder-ene Reaction." **Jolie Deforrest** and Kay M. Brummond, 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006, ORGN-695.
12. "Design and Synthesis of a 3-Pyrroline Discovery Library." **Dhanalakshmi Kasi** and Kay M. Brummond, 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006, ORGN-050.
13. "Rhodium-Catalyzed Approach to Libraries of Highly Functionalized Lactams." **Donald Probst** and Kay M. Brummond, 230th ACS National Meeting, Washington, DC, August 28 - September 1, 2005, ORGN-705.
14. "Heterocyclic  $\alpha$ -Alkylidene Cyclopentenones Obtained via a Pauson Khand Reaction of Amino Acid Derived Allenynes. Preparation of a Library of Novel Tricyclic Pyrroles." Kay M. Brummond and **Branko Mitasev**, Pacificchem, Honolulu, Hawaii, December, 2005, oral presentation.
15. "Progress Towards the Synthesis of Guanacastepene A using a Rh(I)-Catalyzed Allenic Pauson-Khand Reaction." Kay M. Brummond and **Jamie M. McCabe**, Pacificchem, Honolulu, Hawaii, December, 2005, poster presentation.

16. "Microwave-Assisted Intramolecular [2+2] Cycloaddition Reaction for the Rapid and Regiospecific Synthesis of Bicyclomethylenecyclobutene." Kay M. Brummond, *Daitao Chen*, 230th ACS National Meeting, Washington, DC, August 28 - September 1, 2005, ORGN-533.
17. "Rhodium(I)-Catalyzed Alder-Ene Reactions of Allenic Ynones." *Thomas O. Painter, Jr.* and Kay M. Brummond, 230th ACS National Meeting, Washington, DC, August 28 - September 1, 2005, ORGN-401.
18. "Transition Metal Catalyzed Carbon-Carbon Bond Forming Reactions: A Strategy for Assembling Multiple Architecturally Unique Compounds." Kay M. Brummond and *Branko Mitasev*, 38th National Organic Symposium (NOS), Bloomington, Indiana, June, 2003, poster.
19. "Progress Towards the Synthesis of Fumagillol/Ovalicin Substructures via a Rhodium(I) Catalyzed Formal Alder-ene Reaction." Kay M. Brummond and *Jamie M. McCabe*, 38th National Organic Symposium (NOS), Bloomington, Indiana, June, 2003, poster.
20. "An Allenic Alder-Ene Approach Towards the Synthesis of Cassiol." Kay M. Brummond and *Thomas O. Painter, Jr.*, 38th National Organic Symposium (NOS), Bloomington, Indiana, June, 2003, poster.
21. "A Transition-Metal Catalyzed Allene-Alkene Cyclization for the Formation of Seven-Membered Rings." Kay M. Brummond and *Hongfeng Chen*, 226th ACS National Meeting, New York, NY, September, 2003, ORGN-726.
22. "Progress Toward the Total Synthesis of (-)-FR901483." Kay M. Brummond and *Sang-phyo Hong*, 226th ACS National Meeting, New York, NY, September, 2003, ORGN-714.
23. "Transition-Metal Catalyzed Protocol for Rapid Assembly of Polycyclic Compounds." Kay M. Brummond and *Lingfeng You*, 226th ACS National Meeting, New York, NY, September, 2003, ORGN-443.
24. "Rhodium(I)-Catalyzed Allenic Alder-Ene Reaction: Scope and Limitations." Kay M. Brummond, *Jamie M. McCabe*, Peter C. Sill, and Hongfeng Chen, 224th ACS National Meeting, Boston, MA, August, 2002.
25. "Formal Allenic-Alder-Ene and Pauson-Khand Reactions, A Strategy for Assembling Multiple Architecturally Unique Compounds." Kay M. Brummond, *Branko Mitasev*, Hongfeng Chen and Peter C. Sill, 224th ACS National Meeting, Boston, MA, August, 2002.
26. "Cross-Conjugated Trienes: Rapid Increases in Molecular Complexity." Kay M. Brummond, *Lingfeng You*, Peter C. Sill and Hongfeng Chen, 224th ACS National Meeting, Boston, MA, August, 2002. (Poster selected for the Sci-Mix).

27. "Silicon-Tethered Allenic Pauson-Khand Reaction and its Application Toward the Synthesis of Cyclopentenone Prostaglandins." Kay M. Brummond and **Peter C. Sill**, 224th ACS National Meeting, Boston, MA, August, 2002.
28. "Approach Toward the Synthesis of Suberosenone, An Anticancer Agent Using an Allenic [2 + 2 + 1] Cycloaddition Reaction." Kay M. Brummond, **Prasan Tangyuenyongwatana**, Angela Kerekes and Joseph L. Kent, 224th ACS National Meeting, Boston, MA, August, 2002.
29. "Allenic Pauson-Khand Approach to Guanacastepene." Kay M. Brummond and **Dong Gao**, 224th ACS National Meeting, Boston, MA, August, 2002.
30. "Progress Toward the Synthesis of FR901483." Kay M. Brummond, **Sang-phyo Hong**, Li Sha and Jianliang Lu, 224th ACS National Meeting, Boston, MA, August, 2002.
31. "New and Innovative Strategies for Accessing Natural Products Using Allenynes." Kay M. Brummond and **Hongfeng Chen**, 224th ACS National Meeting, Boston, MA, August, 2002.
32. "Tandem Cationic Aza-Cope Rearrangement-Mannich Cyclization Approach to FR901483 by a Bridgehead Iminium Ion." Kay M. Brummond and **Jianliang Lu**, 220th ACS National Meeting, Washington DC, August 2000.
33. "Progress Toward the Synthesis of the Antitumor Agent, Suberosenone." Kay M. Brummond, Joseph L. Kent and **Angela D. Kerekes**, 220th ACS National Meeting, Washington DC, August, 2000.
34. "The Allenic Pauson-Khand Reaction and its Application to Biologically Relevant Molecules." Kay M. Brummond and **Angela D. Kerekes**, Inaugural Research Horizons Symposium, West Virginia University, Morgantown, WV, September, 1999.
35. "A Silicon Tethered Pauson-Khand Reaction." Kay M. Brummond and **Brenden Rickards**, Pfizer Undergraduate Research Fellowship Program, Groton, CT, October, 1999.
36. "Enantioselective Synthesis of the Potent Antitumor Agent Hydroxymethylacylfulvene (HMAF)." Kay M. Brummond and **Jianliang Lu**, 218th ACS National Meeting, New Orleans, LA, August, 1999.
37. "Chirality Transfer in the Allenic [2 + 2 + 1] Cycloaddition." Kay M. Brummond and **Angela D. Kerekes**, 218th ACS National Meeting, New Orleans, LA, August, 1999.
38. "An Expedient Synthesis of the Potent Antitumor Agent, ( $\pm$ )-Hydroxymethylacylfulvene Using an Allenic Pauson-Khand Type Cycloaddition." **Jianliang Lu** and Kay M. Brummond, 217th ACS National Meeting, Anaheim, California, March, 1999.

39. "Studies Toward the Synthesis of the Antitumor Agent, Suberosenone." Kay M. Brummond and **Joseph L. Kent**, 217th ACS National Meeting, Anaheim, CA, March, 1999.
40. "A Chiral Allenic Pauson-Khand Cycloaddition." Honghe Wan and **Kay M. Brummond**. 215th ACS National Meeting, Dallas, Texas, April, 1998.
41. "A Retrocycloaddition Approach to (*E*)-Olefin Peptide Isosteres." **Angela D. Kerekes** and Kay M. Brummond. 215th ACS National Meeting, Dallas, Texas, March, 1998.
42. "Enantioselective Formation of Allenes From Prochiral Enol Phosphates Using a Chiral Base. Dependence of Allene/Alkyne Formation on Leaving Group." **Kay M. Brummond**, Elizabeth Dingess, Joseph L. Kent and Angela D. Kerekes, 215th ACS National Meeting, Dallas, Texas, April, 1998.
43. "A Solid-Phase Synthesis of BRL 49653 and Its Analogs." **Jianliang Lu** and Kay M. Brummond, 215th ACS National Meeting, Dallas, Texas, April, 1998.
44. "The Allenic Pauson-Khand Cycloaddition. Dependence in  $\pi$ -Bond Selectivity on Substrate Structure and Reaction Conditions." Honghe Wan and **Kay M. Brummond**, 215th ACS National Meeting, Dallas, Texas, April, 1998.
45. "Applications of the Allenic Pauson-Khand Reaction." Kay M. Brummond, **Elizabeth Dingess** and **Honghe Wan**, Thirty-Fifth National Organic Symposium, San Antonio, Texas, June, 1997.
46. "A Retrocycloaddition Approach to (*E*)-Olefin Peptide Isosteres." Kay M. Brummond, Kirsten Gesenberg and **Angela Kerekes**, Thirty-Fifth National Organic Symposium, San Antonio, Texas, June, 1997.
47. "A Strategy for the Preparation of Allenes." **Kay M. Brummond** and Elizabeth A. Dingess, 211th ACS National Meeting, New Orleans, LA, March, 1996.
48. "A New Molybdenum Mediated Allenic Pauson-Khand Cycloaddition for the Preparation of  $\alpha$ -Methylene Cyclopentenones." Joseph L. Kent, Honghe Wan, and **Kay M. Brummond**, 209th ACS National Meeting, Anaheim, CA, April, 1995.

## Funded Proposals

### Current

1. National Institutes of Health General Medical Sciences, 2RO1-GM054161: "An Allenic Pauson-Khand Reaction, New Directions." 12/01/2002-11/30/2011.
2. National Institutes of Health General Medical Sciences P50 GM067082-02: "Centers of Excellence in Chemical Methodologies and Library Development." 9/30/08-9/29/13, \$10,000,000. PI Project 2, Kay M. Brummond, "Heterocycle Synthesis and Scaffold Diversity," in collaboration with Professor Paul E. Floreancig.

3. National Science Foundation, 0910597: "Exploiting Allenes: Synthesis and Reactivity of Strained Compounds." 8/1/09-7/31/12.
4. National Institutes of Health, 2R01ARO49832-07: The Replication Checkpoint and Genomic Fidelity in Skin." PI: Paul Nghiem, University of Washington/Fred Hutchison Cancer Center, 5/1/10-4/30/12.

**Expired**

5. Pfizer Graduate Research Fellow, Recipient: Jennifer Loyer-Drew, 2007, \$25,000.
6. National Institutes of Health General Medical Sciences P50 GM067082-01: "Centers of Excellence in Chemical Methodologies and Library Development." 9/30/02-9/29/08, \$9,639,000. PI Project 2, Kay M. Brummond, "Combining Solid Phase and Fluorous Techniques for Diversity Oriented Synthesis." \$950,000 in collaboration with Professor Dennis P. Curran.
7. National Science Foundation; "A Catalytic Synthesis of Cross-Conjugated Trienes: A Scaffold for Rapidly Increasing Molecular Complexity" 6/1/02-5/31/06, \$360,000.
8. Pfizer Graduate Research Fellow, Recipient: Jamie McCabe, 2004, \$25,000.
9. Pfizer Undergraduate Research Fellowship Program, Recipient: Samuel Kim, 2004, \$5,000.
10. National Science Foundation-EPSCoR; "Chemical Communication in Biological Systems." 7/1/96-12/31/98; \$1,200,000 (collaborative: Professors Kay Brummond, Fred King, Paul Jagodzinski, Debra Mohler, Vincent Remcho, Mary Scott).
11. National Institutes of Health General Medical Sciences, R01 GM54161; "Allenic-Pauson-Khand Reaction, Synthetic Applications." 6/1/98-5/31/02; \$650,000.
12. Pfizer Undergraduate Research Fellowship, Recipient: Brenden Rickards, 1999, \$5,000.
13. American Chemical Society-Petroleum Research Fund (ACS-PRF #28274-G1); "A Novel Intramolecular 1,3-Dipolar Cycloaddition Using a Sulfine and Its Application to the Synthesis of Antitumor Antibiotic Sarkomycin." 6/1/94-8/31/96; \$20,000.
14. C. Eugene Bennett Student Academic Enrichment Fund; 1/1/97-5/15/97; \$900.
15. American Cancer Society-West Virginia Affiliate; 9/30/93-6/30/94; \$9,000.

**Instruction**

Minicourse-New Developments in the Pauson-Khand and Pauson-Khand-Type Reactions

Minicourse-Recent Developments in the Preparation and Reactions of Allenes

Minicourse-Transition Metal Catalyzed Multicomponent Coupling Reactions Advanced Inorganic Synthesis Laboratory (1140), 1 semester (22 students/3 sections).

Teaching Chemistry in the Computer Age (3320) Mini-course co-taught with Professor Joseph Grabowski, Spring 2007, (12 students) U of Pittsburgh.

Sophomore Organic Chemistry (0320), 1 semester (120 students), U of Pittsburgh.  
Graduate Synthesis Course (2320), 4 semesters (~25 students/semester), U of Pittsburgh.  
Sophomore Organic Chemistry (0310), 7 semesters (120-220 students/semester), U of Pittsburgh.  
Conformational Analysis (3310), (25 students), Mini-course co-taught with Professor Peter Wipf, U of Pittsburgh, Spring 2003.  
Advanced Organic Chemistry (0331), 3 semesters (~15 students/semester), WVU.  
Advanced Organic Synthesis Laboratory (239), 3 semesters (~24 students/semester), WVU.  
Careers in Chemistry (192), 3 semesters (~20 students/semester), WVU.  
Sophomore Organic Chemistry (133), 3 semesters (~150 students/semester), WVU.  
Sophomore Organic Lab (135), 7 semesters (~100 students/semester), WVU.  
Sophomore Organic Chemistry (134), 2 semesters (~120 students/semester), WVU.  
Sophomore Organic Lab (136), 2 semesters (~100 students/semester), WVU.  
Natural Products Synthesis (431), 1 semester (10 graduate students), WVU.  
Spectroscopy (235), 2 semesters (~25 students/semester), WVU.  
Advanced Organic Chemistry (332), 2 semesters (~10 students/semester), WVU.

## Service

### National

NIH Postdoctoral Fellowship Panel, Ad Hoc Member, March, 2011.  
NIH Special Emphasis Panel, Ad Hoc Member, September, 2010.  
NSF, CCI, Phase I Panel, June 12-14, 2010.  
NIH Special Emphasis Panel, Ad Hoc Member, May, 2010.  
Chair of the National ACS Awards Selection Committee, 2009.  
Member of the National ACS Awards Selection Committee, 2008-2010.  
Member of Advisory Committee for the 2008-2010 Carnegie Science Center Awards.  
Alternate Councilor for the Organic Division of the American Chemical Society, 2006-2008.  
Ad-Hoc member of the American Cancer Society Peer Review Committee, June 5, 2005.  
NIH Medicinal Chemistry A Study Section, Ad Hoc Member, 2004.  
Chaired sessions at National ACS Meeting, Dallas, 1998, Anaheim, 1999.  
Chaired sessions at Gordon Conferences, 1997, 1998, 1999, 2000, 2001, 2002.  
Refereed manuscripts for: *The Journal of the American Chemical Society*, *The Journal of Organic Chemistry*, *Tetrahedron Letters*, *Tetrahedron*, *Organic Letters*, *Chemical Reviews*, *Chemical Communications*, *Journal of Natural Products*, *Synlett*, *Angew. Chem.*, *Synthesis*, *Synlett*, *Journal of Combinatorial Chemistry*, *Heterocycles*.  
Grant Reviewer for NSF 1998-2008, ACS-PRF 1995-2007.

**Regional**

Organizer of Session at Regional ACS Meeting, Pittsburgh, October, 2003.

Poster Judge, WVU Meeting-in-Min, Hosted by the ACS Student Affiliates, April 5, 2003.

Secretary for the Local Section of the American Chemical Society, WVU, 2 years.

**Department**

Member of Diversity Committee, 2010-2011.

Member of Organic Search Committee, 2009-2011.

Member of Graduate Admissions Committee, 2009-2010.

Member of Graduate Student Advisement Committee, 2009-2010.

Member of Alumni Awards Committee, 2009-2010.

Member of Graduate Awards Selection Committee, 2009-2010

Chair of Organic Search Committee, 2008-2009.

Member of Senior Hire Committee, 2008-2009.

Peer Classroom Review for Joe Grabowski and Paul Floreancig, 2009-2010.

Peer Classroom Review for Dennis Curran, 2008-2009.

Member of the Organic Search Committee, 2007-2008.

Chair of the Organic Division, Pittsburgh, 2006-2007.

Member of the Safety Committee, Pittsburgh, 2005-2007.

Chair of the Graduate Recruiting Committee, Pittsburgh, 2004-2007.

Departmental Website Coordinator, Pittsburgh, 2002-2004.

Member of Graduate Recruiting Committee, Pittsburgh, 2002-2004.

Member of the Faculty Development Committee, Pittsburgh, 2001-2003.

Member of the Inorganic Faculty Search Committee, Pittsburgh, 2001-2002.

Member of the Graduate Studies and Admissions Committee, WVU, 2 years.

Co-Advisor for the ACS Student Affiliates, WVU, 1 year.

Member of C. Eugene and Edna P. Bennett Careers for Chemists Committee, WVU, 4 years.

Member of Organic Chemistry Professor Search Committee, WVU, 3 years.

Member of Departmental Scholarships and Awards Committee, WVU, 6 years.

Promotion and Tenure Guidelines Committee, WVU, 1 year.

Undergraduate Advisor, 14 chemistry majors, including 5 honors students per semester, WVU.

Member of Ph.D. Graduate Committees, 15 students, Pittsburgh.

Member of Ph.D. and M.S. Graduate Committees, 16 students, WVU.



**University**

Member of the University Council on Graduate Study, Pittsburgh, 2009 – 2011.

Travel Grant Awards Committee for pre- and post-doctoral students for the 2008 National Medicinal Chemistry Symposium sponsored by the Medicinal Chemistry Division of the ACS.

Competitive Medical Research Fund (CMRF) Grant Review Panel, Pittsburgh, 2007-2010.

Member of the Tenure Council Selection Committee, Pittsburgh, 2006 - 2009.

Member of the University Research Council Committee, Pittsburgh, 2006 - 2010.

Subcommittee Chair of the University Research Council (Science and Engineering), 2009.

Chair of Faculty Arts and Sciences Grants Competition Committee, Pittsburgh, 2005 - 2006.

Co-Chair of Faculty Arts and Sciences Grants Competition Committee, Pittsburgh, 2004 - 2005.

Member of Faculty Arts and Sciences Grants Competition Committee, Pittsburgh, 2004.

Member of Search Committee for the Associate Provost for Research, WVU, 2000.

Member, American Cancer Society-Institutional Review Committee, WVU, 2 years.

Member of NSF-EPSCoR-Institutional Grant Review Committee for Equipment Grants, 1 year.

Member, College Curriculum and Academic Quality Committee, WVU, 1 year.

**Professional Development**

Organized “COACH” workshop, October 1, 2011, Pittsburgh, Pennsylvania.

Organized workshop, “Computationally Assisted Reaction Discovery” Telluride, Colorado, June 19-25, 2011.

Attended workshop, “How Students Learn Directs How We Should Teach” offered by Summer Instructional Development Institute, University of Pittsburgh, May, 2010.

Organized Spartan Workshop for Faculty, Postdocs and Students, June 3-4, 2010.

Organized Mini-course on the “Claisen Rearrangement” for graduate students, presented by Professor Matthias McIntosh from the Chemistry Department at the University of Arkansas, Summer 2007.

Author of Test Bank for Organic Chemistry, Structure and Function, Fifth Edition, W.H. Freeman and Company, New York, ISBN:0-7167-2565-7, 2006.

McGraw-Hill Textbook Symposium, symposium organized to address the effectiveness of the current sophomore organic textbooks, Tucson Arizona, March 2005.

Organized Mini-course for graduate students, presented by Professor Jeff Aube from the Medicinal Chemistry Department, University of Kansas, University of Pittsburgh, Spring 2004.

Textbook Review for McGraw-Hill, 2004.

**Outreach**

Girl's Math and Science Partnership Program, Carnegie Science Center, Tour Your Future, Soap Making Workshop, February 26, 2011. Eleven 10 to 12-year-old girls.

Connect to Excellence Program. 10 students and teacher (Ellen Wright) from Perry High School, Pittsburgh, organized a soap-making lab. April 30, 2011.

Served as a female scientist for the New York Hall of Science, a science center located in Queens New York. This service included interacting with a group of girls during their camp week in February via teleconference. A description of the camp below:

Science Adventures For Girls, Grades 6-8, February 16-19. Their goal is to foster girls' enthusiasm in science and increase girls' self-confidence in science through positive female role models and engaging activities. On Wednesday February 17, the girls implemented a chemistry related activity (making soap) that was designed by myself, and I spoke with the girls through videoconferencing, for 30 minutes about my life as a female scientist. I also prepared a video to show them a taste of life as an academic researcher (<http://www.youtube.com/watch?v=5L3zldgDgD0>).

Connect to Excellence Program. 10 students and teacher (Ellen Wright) from Perry High School, Pittsburgh, participated in a soap-making lab designed by myself. Joshua Osbourn, Laura Kocsis (graduate students) and Meghan Bastin (undergraduate) assisted in the laboratory. March, 2010

Carnegie Science Awards, Carnegie Science Center, Advisory Committee, Pittsburgh, 2008-2011.

Girls, Math & Science Partnership, A Program of Carnegie Science Center, Pittsburgh, PA, Braincake Mentor, ([www.braincake.org/mentormatch](http://www.braincake.org/mentormatch)).

Pittsburgh Carnegie Science Center, Connect to Excellence Program, Corporate Mentor, 2007-2011.

Pittsburgh Carnegie Science Center, Girls Science and Science Partnership (GMSP), 2010-2011. Developing after school program, the preparation of soap.