

# James Robert Vyvyan, Jr.

Summer 2009

## Office:

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## Education:

Ph.D.	University of Minnesota	1995
B.S. (ACS cert.)	University of Wisconsin-Eau Claire	1991

## Experience:

2006 – present	Professor of Chemistry Western Washington University, Bellingham, WA <i>Teaching specialty:</i> organic chemistry, NMR spectroscopy <i>Research interests:</i> asymmetric synthesis and catalysis, natural products
2003-2006	Associate Professor of Chemistry Western Washington University
1997-2003	Assistant Professor of Chemistry Western Washington University
1995-1997	Camille and Henry Dreyfus Postdoctoral Fellow, Hope College, Holland MI <i>Advisor:</i> Stephen K. Taylor
1991-1995	Graduate assistant, University of Minnesota <i>Advisor:</i> Professor Thomas R. Hoye <i>Thesis:</i> Applications of the Fischer Carbene Polycyclic Cyclopropanation Reaction in Natural Product Synthesis: ( $\pm$ )-Carabrone, ( $\pm$ )-Pentalenene, and ( $\pm$ )-Thujopsene
1991 (summer)	Technician, 3M Company, St. Paul, MN <i>Supervisor:</i> Steven M. Heilmann
1988-1991	Undergraduate research at the University of Wisconsin-Eau Claire <i>Advisor:</i> Professor Leo A. Ochrymowycz
1989-90 (summers)	Technician, S. C. Johnson & Son, Racine, WI <i>Supervisor:</i> D. Sunil Jayasuriya

## Awards and Honors:

WWU Peter J. Elich Excellence in Teaching Award	2008
Invited speaker, 34 <sup>th</sup> NSF Workshop on Organic Synthesis and Natural Products Chemistry Holderness, NH	2004
Henry Dreyfus Teacher-Scholar Award	2003
Faculty Travel Award, ACS Division of Organic Chemistry National Science Foundation	1999, 2003
Faculty Early Career Development (CAREER) Award	2001-2006

**Awards and Honors, continued**

Project Development Award, WWU Bureau for Faculty Research	1999-2000
Invited Student Participant, Union Carbide Innovation Recognition Program	1995
ACS Graduate Fellowship, Division of Organic Chemistry	1995
Lee I. Smith Stainless Steel Beaker Award, University of Minnesota	1995
University of Minnesota Graduate School Dissertation Fellowship	1994
University of Minnesota Departmental Graduate Fellowship, Hercules	1993
University of Minnesota Departmental Graduate Fellowship, Air Products	1991
National Merit Scholar	1987-1991
University of Wisconsin-Eau Claire Chancellor's Scholarship	1987

**External Research Grants: (> \$1.2 M since 1997)**

American Chemical Society Petroleum Research Fund (PRF 49441-UR 1) "Au(I)-Catalyzed Aromatic Claisen Rearrangements"	7/01/09–8/31/12	\$65,000
National Institutes of Health (R15CA122084-01) "Synthesis of (–)-cananodine, an alkaloid active against hepatocellular carcinoma"	4/01/07– 3/31/10	\$204,473
National Science Foundation RUI (NSF-0616995) "New Approaches to the Synthesis of 1-benzoxocanes"	7/01/06– 6/30/09	\$264,000
Camille and Henry Dreyfus Foundation Henry Dreyfus Teacher Scholar Award "Computational Investigation of Phenol Epoxide Cyclizations"	11/20/02 – 11/20/07	\$60,000
Herman Frasch Foundation "Synthesis and Evaluation of Novel Herbicides Based on Natural Product Templates"	7/01/02– 6/30/07	\$200,000
National Science Foundation CAREER Award (NSF-0094378) "Synthesis of Allelopathic Agents as Leads to New Agrochemicals"	3/01/01– 2/28/06	\$391,750
Council on Undergraduate Research Summer Student Fellowship "Synthesis of Medium Ring Ethers via Phenol Epoxide Cyclizations"	6/15/01– 9/15/01	\$4,000
Research Corporation Cottrell College Science Award "Synthesis of Allelochemicals: The Heliannuols and Related Compounds"	6/01/99–5/31/01	\$38,125
American Chemical Society Petroleum Research Fund (Type G) "Reagent Controlled Asymmetric Iodoetherification"	6/98–6/00	\$20,000
Camille and Henry Dreyfus Foundation Faculty Start-Up Grants for Undergraduate Institutions "Asymmetric Iodoetherification"	9/97–9/99	\$12,500
Camille and Henry Dreyfus Foundation Scholar/Fellow Program for Undergraduate Institutions Supplemental Award	9/97–9/99	\$10,000

**External Equipment / Instructional Grants:**

National Science Foundation Major Research Instrumentation (MRI)  
 “MRI/RUI: Acquisition of a 500-MHz Nuclear Magnetic Resonance Spectrometer at Western Washington  
 University” (NSF-0216604) 8/15/02–7/31/05 \$454,101

**Publications:** (\* indicates undergraduate student coauthor, # indicates M.S. student coauthor)

25. Vyvyan, J. R.; \*Brown, R. C.; \*Woods, B. P.; “Alkylation of 2-substituted (6-methyl-2-pyridyl)methyl lithium species with epoxides,” *J. Org. Chem.* **2009**, *74*, 1374-1376.
24. Pavia, D. L.; Lampman, G. M.; Kriz, G. S.; Vyvyan, J. R. *Introduction to Spectroscopy*, 4<sup>th</sup> edition; Brooks/Cole: Belmont, CA, 2009. ISBN-13: 978-0-495-11478-9
23. Van Alstyne, K. L.; Nelson, A. V.; Vyvyan, J. R.; Cancilla, D. A. “Dopamine functions as an antiherbivore defense in the temperate green alga *Ulvaria obscura*,” *Oecologia* **2006**, *148*, 304-311.
22. Vyvyan, J. R.; \*Oaksmith, J. M.; \*Parks, B. W.; \*Peterson, E. M.; “Total Synthesis of (±)-Heliannol C and E via Aromatic Claisen Rearrangement,” *Tetrahedron Lett.* **2005**, *46*, 2457-2460.
21. Person, E. C.; #Meyer, J. A.; Vyvyan, J. R.; “Structural Determination of the Principle Byproduct of the Lithium-Ammonia Reduction Method of Methamphetamine Manufacture,” *J. Forensic Sci.* **2005**, *50*, 87-95.
20. Taylor, S. K.; \*Arnold, C. R.; \*Gerds, A. T.; \*Ide, N. D.; \*Law, K. M.; \*Kling, D. L.; \*Pridgeon, M. G.; \*Simons, L. J.; Vyvyan, J. R.; \*Yamaoka, J. S.; Liao, M.-K.; Goynes, T. E. “Lactone synthesis via biotransformations of  $\gamma$ -hydroxyamides,” *Tetrahedron: Asymm.* **2004**, *15*, 3819-3821.
19. Heilmann, S. M.; Drtina, G. J.; Haddad, L. C.; Rassmussen, J. K.; Gaddam, B. N.; Liu, J. J.; Fitzsimmons, R. T.; Fansler, D. D.; Vyvyan, J. R.; Yang, Y. N.; Beauchamp, T. J. “Azlactone-Reactive Polymer Supports for Immobilizing Synthetically Useful Enzymes. Part I. Pig Liver Esterase on Dispersion Polymer Supports,” *J. Mol. Catal. B: Enz.* **2004**, *30*, 33-42.
18. Vyvyan, J. R.; #Loitz, C.; #Looper, R. E.; \*Mattingly, C. S.; \*Peterson, E. A.; \*Staben S. T. “Synthesis of Aromatic Bisabolene Natural Products via Palladium-Catalyzed Cross-Couplings of Organozinc Reagents,” *J. Org. Chem.* **2004**, *69*, 2461-2468.
17. Vyvyan, J. R.; \*Meyer, J. A.; \*Meyer, K. D. “Conversion of Epoxides to 1,3-Dioxolanes Catalyzed by Tin (II) Chloride,” *J. Org. Chem.* **2003**, *68*, 9144-9147.
16. Vyvyan, J. R.; Pavia, D. L.; Lampman, G. M.; Kriz, G. S. “Preparing Students for Research: Synthesis of Substituted Chalcones as a Comprehensive Guided-Inquiry Experience,” *J. Chem. Educ.* **2002**, *79*, 1119-1121.
15. Vyvyan, J. R.; #Holst, C. L.; \*Johnson, A. J.; \*Schwenk, C. M. “Total Synthesis of Gibbilimbols A-D,” *J. Org. Chem.* **2002**, *67*, 2263-2265.
14. Vyvyan, J. R.; “Allelochemicals as Leads for New Herbicides and Agrochemicals,” *Tetrahedron* **2002**, *58*, 1631-1646.
13. Vyvyan, J. R.; #Rubens, C. A., Halfen, J. A. “Synthesis of the napalilactone and pathylactone A spirocyclic skeleton,” *Tetrahedron Lett.* **2002**, *43*, 221-224.
12. Vyvyan, J. R.; \*#Looper, R. E. “Total Synthesis of (±)-Heliannol D, an Allelochemical from *Helianthus annuus*,” *Tetrahedron Lett.* **2000**, *41*, 1151-1154.
11. Vyvyan, J. R.; \*Peterson, E. A.; \*Stephan, M. L. “Expedient Total Synthesis of (±)-Caparratriene,” *Tetrahedron Lett.* **1999**, *40*, 4947-4949.
10. Taylor, S. K.; \*Chmiel, N. H.; \*Mann, E. E.; Silver, M. E.; Vyvyan, J. R. “Spiro  $\gamma$ -lactones via Aluminum Enolate Spiroepoxide Openings,” *Synthesis* **1998**, 1009-1014.

9. Goodwin, T. E.; \*Cousins, D. M.; \*Debenham, S. D.; \*Green, J. L.; \*Guyer, M. L.; \*Jacobs, E. G.; Hoye, T. R.; Koltun, D. O.; Vyvyan, J. R. "Synthesis of Conformationally Mobile Bicyclic Tetrahydro-1,2-oxazines by Isomerization of Isoxazolidinylmethyl Tosylates," *J. Org. Chem.* **1998**, *63*, 4485-4488.
8. Taylor, S. K.; \*DeYoung, D.; \*Simons, L. J.; Vyvyan, J. R.; \*Wood, N. K. "Efficient Preparation of  $\gamma$ -Hydroxynitriles via Nitrile Enolate-Epoxy Reactions: Scope and Diastereoselectivity," *Synth. Comm.* **1998**, *28*, 1691-1701.
7. Dunn, B. C.; Wijetunge, P.; Vyvyan, J. R.; Howard, T. A.; Grall, A. J.; Ochrymowycz, L. A.; Rorabacher, D. B.; "Electron-Transfer Kinetics and Thermodynamic Characterization of Copper(II/I) Complexes with Acyclic Tetrathiaethers in Aqueous Solution," *Inorg. Chem.* **1997**, *36*, 4484-4489.
6. Taylor, S. K.; \*Chmiel, N. H.; \*Simons, L. J.; Vyvyan, J. R. "Conversion of Hydroxy Nitriles to Lactones Using *Rhodococcus rhodochrous* Whole Cells," *J. Org. Chem.* **1996**, *61*, 9084-5.
5. Hoye, T. R.; Vyvyan, J. R. "Polycyclic Cyclopropanes from Reactions of Alkene-Containing Fischer Carbene Complexes and Alkynes: A Formal Synthesis of ( $\pm$ )-Carabrone." *J. Org. Chem.* **1995**, *60*, 4184-4195.
4. Aronne, L.; Dunn, B. C.; Vyvyan, J. R.; \*Souvignier, C. W.; Mayer, M. J.; Howard, T. A.; Salhi, C. A.; Goldie, S. N.; Ochrymowycz, L. A.; Rorabacher, D. B.; "Effect of Ligand Constraints upon the Stabilities and Potentials of Macrocyclic Polythiaether Complexes. Copper(II) and Copper(I) Complexes with Cyclohexyl and Benzyl Derivatives of [14]aneS<sub>4</sub> in Water, 80% Methanol and Acetonitrile," *Inorg. Chem.* **1995**, *34*, 357-369.
3. Hoye, T. R.; Hanson, P. R.; Vyvyan, J. R. "A Practical Guide to First-Order Multiplet Analysis in <sup>1</sup>H NMR Spectroscopy," *J. Org. Chem.* **1994**, *59*, 4096-4103.
2. Hoye, T. R.; Chen, K.; Vyvyan, J. R. "Preparation of Fischer Carbene Complexes by Alkylation of Acylmetallates with Alkyl Iodides," *Organometallics* **1993**, *12*, 2806-9.
1. Desper, J. M.; Vyvyan, J. R.; Mayer, M. J.; Ochrymowycz, L. A.; Gellman, S. H. "Nickel(II) Chelation by Three Bicyclic Tetrathiaethers: Solution and Solid State Data," *Inorg. Chem.* **1993**, *32*, 381-2.

## Invited Presentations:

"Au(I)-Catalyzed Rearrangements of Allyl Aryl Ethers," University of Utah, September 25, 2008, Salt Lake City, UT.

"Synthesis and Evaluation of Heliannuols and Synthetic Analogues," University of Richmond, April 24, 2006, Richmond, VA.

"Synthesis of Allelopathic Natural Products: The Heliannuols," Colorado State University, November 8, 2004, Fort Collins, CO.

"Recent Progress in the Synthesis of the Heliannuols," National Science Foundation Workshop on Synthetic Organic Chemistry, June 10-13, 2004, Minary Center, Holderness, NH.

"Synthesis of Benzoxocanes via Regioselective 8-endo Phenol Epoxide Cyclizations," University of Oregon, January 30, 2004, Eugene, OR.

"Synthesis of Allelochemicals via Phenol Epoxide Cyclizations: The Heliannuols," Central Washington University, November 14, 2003, Ellensburg, WA.

"Synthesis of Benzoxocanes via Regioselective 8-endo Phenol Epoxide Cyclizations," Emory University, September 17, 2003, Atlanta, GA.

"Synthesis of Allelopathic Natural Products: The Heliannuols," Seattle Pacific University, November 29, 2001, Seattle, WA.

"Synthesis of Allelopathic Natural Products: The Heliannuols," Pacific Lutheran University, November 13, 2000, Tacoma, WA.

"Applications of the Fischer Carbene Polycyclic Cyclopropanation Reaction in Natural Product Synthesis," Grand Valley State University, February 2, 1996, Allendale, MI.

“Applications of the Fischer Carbene Polycyclic Cyclopropanation Reaction in Natural Product Synthesis,” Union Carbide Innovation Recognition Program, May 18-19, 1995, Charleston, WV.

“Applications of the Fischer Carbene Polycyclic Cyclopropanation Reaction in Natural Product Synthesis,” Macalester College, February 14, 1995, St. Paul, MN.

“A Fischer Carbene-Based Synthesis of (±)-Carabrone,” University of Wisconsin-Eau Claire, December 4, 1993.

## Contributed Presentations:

(\* indicates undergraduate student; # indicates M.S. student; presenter in **bold**)

**Vyvyan, James R.**; Bennett,\* Jennifer A.; Dimmitt,\* Heidi E.; Griffith,# Jennifer K.; Steffens,\* Laura D.; Swanson,# Rebecca A. Development of a gold(I)-catalyzed aromatic Claisen rearrangement. Abstracts of Papers, 64<sup>th</sup> Northwest Regional Meeting of the ACS, Tacoma, WA, United States, June 28 – July 1, 2009, Oral Presentation 198.

**Vyvyan, James R.**; Bray,\* Scott L. Wold,\* Erik D.; Engles,# Courtney A. 1-Benzoxocanes via Intramolecular Buchwald-Hartwig Etherification. Abstracts of Papers, 64<sup>th</sup> Northwest Regional Meeting of the ACS, Tacoma, WA, United States, June 28 – July 1, 2009, Oral Presentation 197.

**Motanic,\* Kelsey K.**; Vyvyan, James R.; Ligon,# Toby J.; Wall,\* Hayley S.; Suzuki-Miyaura Cross Couplings of Pyridyl 3-Triflates with Alkenyl Boronates. Abstracts of Papers, 64<sup>th</sup> Northwest Regional Meeting of the ACS, Tacoma, WA, United States, June 28 – July 1, 2009, Poster 159.

**Ligon,# Toby J.**; Vyvyan, James R.; Recent Progress Toward the Synthesis of Cananodine. Abstracts of Papers, 64<sup>th</sup> Northwest Regional Meeting of the ACS, Tacoma, WA, United States, June 28 – July 1, 2009, Poster 153.

**Tallman,\* Katie R.**; Werner,# Erik W.; Vyvyan, James R.; Progress Toward the Synthesis of Heliannol A Using 8-endo Epoxide Cyclizations. Abstracts of Papers, 64<sup>th</sup> Northwest Regional Meeting of the ACS, Tacoma, WA, United States, June 28 – July 1, 2009, Poster 154.

Vyvyan, James R.; **Steffens,\* Laura D.**; Swanson,# Rebecca A.; Johnson,# Jennifer K. Gold(I)-catalyzed aromatic Claisen rearrangement: Effects of allyl ether structure on product distribution. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008, ORGN-158.

**Vyvyan, James R.**; Johnson,# Jennifer K.; Steffens,\* Laura D.; Swanson,# Rebecca A. Development of a gold(I)-catalyzed aromatic Claisen rearrangement. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008, ORGN-217.

Vyvyan, James R.; **Wall,\* Hayley S.**; **Ligon,# Toby J.**; Meyer,# Jennifer A. Suzuki-type cross-couplings of substituted 3-pyridyl substrates. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008 (2008), ORGN-353.

Vyvyan, James R.; **Breakey,\* Kyle S.**; **McMahon,\* Travis C.**; Werner, Erik W. Use of conformational constraint to promote 8-endo phenol epoxide cyclizations. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008 (2008), ORGN-354

Vyvyan, James R.; **Bray, Scott L.\*** Strategies for the synthesis of 1-benzoxocanes via Caryl-O bond formation. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008 (2008), ORGN-355.

Vyvyan, James R.; **Brown,\* Rebecca C.**; **Woods,\* Brian P.** Reaction of substituted 2-picolylolithiums with epoxides. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008 (2008), ORGN-356.

**Vyvyan, James R.**; Bray,\* Scott L.; Breakey,\* Kyle S.; McMahon,\* Travis C.; Werner,# Erik W. New strategies for the synthesis of 1-benzoxocanes. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008 (2008), ORGN-472.

Vyvyan, James R.; **Swanson, Rebecca A.**; Steffens, Laura D.; Johnson, Jennifer K. Aryl substituent effects on gold(I)-catalyzed aromatic Claisen rearrangements. Abstracts of Papers, 235<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008, ORGN-562.

**J. R. Vyvyan**, “Achieving a balance: Establishing and maintaining successful research programs at PUIs,” Division of Chemical Education proceedings, 231<sup>st</sup> National ACS Meeting, March 26-30, 2006 Atlanta, GA. Oral Presentation CHED1243.

**Jennifer A Meyer**,<sup>#</sup> and J. R. Vyvyan, “Studies toward the enantioselective total synthesis of cananodine,” 39<sup>th</sup> National Organic Symposium, June 12-16, 2005, University of Utah, Salt Lake City, UT. Poster Presentation C26.

**Amanda L. Henry**,<sup>#</sup> J. R. Vyvyan, and Steven H. Dillman, “Can  $\beta$ -hydroxyolefin cleavage be catalyzed by Lewis acids?,” 39<sup>th</sup> National Organic Symposium, June 12-16, 2005, University of Utah, Salt Lake City, UT. Poster Presentation B15.

**James R. Coats**,<sup>#</sup> J. R. Vyvyan, Chadwick T. Merkel,\* and Korin D. Meyer,\* “Synthesis of heliannuol analogues,” 39<sup>th</sup> National Organic Symposium, June 12-16, 2005, University of Utah, Salt Lake City, UT. Poster Presentation A54.

**Celeste Loitz**,<sup>#</sup> Steven T. Staben,\* and J. R. Vyvyan “Synthesis of benzoxocane containing natural products: heliannuol A, K, and helianane,” Division of Organic Chemistry proceedings, 227<sup>th</sup> National ACS Meeting, March 28 – April 1, 2004 Anaheim, CA. Poster Presentation ORGN127.

**J. R. Vyvyan**, Ryan E. Looper,<sup>#</sup> and Steven T. Staben\* “Synthesis of Benzoxocanes via Regioselective 8-*endo* Phenol Epoxide Cyclizations,” Division of Organic Chemistry proceedings, 225<sup>th</sup> National ACS Meeting, March 23-27, 2003 New Orleans, LA. Oral Presentation ORGN659.

**J. R. Vyvyan**, “Striking a balance: The Dreyfus Scholar-Fellow Program as preparation for a career at a PUI,” Division of Chemical Education proceedings, 225<sup>th</sup> National ACS Meeting, March 23-27, 2003 New Orleans, LA. Oral Presentation CHED1241.

**Korin D. Meyer**,\* **Jennifer A. Meyer**,\* and J. R. Vyvyan “Conversion of epoxides to 1,3-dioxolanes catalyzed by tin(II) chloride,” Division of Organic Chemistry proceedings, 225<sup>th</sup> National ACS Meeting, March 23-27, 2003 New Orleans, LA. Poster Presentation ORGN371.

**Jennifer A. Drew**,\* **Jennifer M. Oaksmith**,\* **Elaine M. Peterson**,\* **Bevin W. Parks**,\* and J. R. Vyvyan, “Synthesis of heliannuol C and E via aromatic Claisen rearrangement,” Division of Organic Chemistry proceedings, 225<sup>th</sup> National ACS Meeting, March 23-27, 2003 New Orleans, LA. Poster Presentation ORGN417.

**J. R. Vyvyan**, **Jennifer M. Oaksmith**\* and **Bevin W. Parks**\* “Recent progress in the synthesis of heliannuols C and E,” Division of Organic Chemistry proceedings, 223<sup>rd</sup> National ACS Meeting, April 7-11, 2002, Orlando, FL. Oral Presentation ORGN435.

**J. R. Vyvyan**, Donald L. Pavia, Gary M. Lampman, and George S. Kriz “Preparing students for research: Synthesis of substituted chalcones as a comprehensive guided-inquiry experience,” Division of Chemical Education proceedings, 223<sup>rd</sup> National ACS Meeting, April 7-11, 2002, Orlando, FL. Oral Presentation CHED1108.

**Steven T. Staben**\* and J. R. Vyvyan “Acid catalyzed 8-*endo* phenol epoxide cyclization,” Division of Organic Chemistry proceedings, 223<sup>rd</sup> National ACS Meeting, April 7-11, Orlando, FL. Poster Presentation ORGN71.

**Trisha A. Duffey**\* and J. R. Vyvyan “Synthesis of medium ring benzofused ethers via phenol epoxide cyclizations,” Division of Organic Chemistry proceedings, 223<sup>rd</sup> National ACS Meeting, April 7-11, Orlando, FL. Poster Presentation ORGN81.

**Christian L. Holst**,<sup>#</sup> Allison J. Johnson,\* Cheryl M. Schwenk,\* J. R. Vyvyan “Total Synthesis of Gibbilimbols A-D,” Northwest Regional Meeting of the American Chemical Society, June 14-17, 2001, Seattle University, Seattle, WA. Poster Presentation.

**Courtney A. Rubens**,<sup>#</sup> J. R. Vyvyan, “Synthesis of the Pathylactone A / Napalilactone Skeleton,” Northwest Regional Meeting of the American Chemical Society, June 14-17, 2001, Seattle University, Seattle, WA. Poster Presentation.

**Bevin W. Parks**,\* J. R. Vyvyan, **Jennifer M. Oaksmith**\* “Total Synthesis of Heliannuols C and E,” 37<sup>th</sup> National Organic Symposium, June 10-14, 2001, Montana State University, Bozeman, MT. Poster Presentation 168.

**Christian L. Holst**,<sup>#</sup> J. R. Vyvyan, Allison J. Johnson,\* Cheryl M. Schwenk,\* “Total Synthesis of Gibbilimbols A-D,” 37<sup>th</sup> National Organic Symposium, June 10-14, 2001, Montana State University, Bozeman, MT. Poster Presentation 97.

- Courtney A. Rubens**,<sup>#</sup> J. R. Vyvyan, "Synthesis of the Pathylactone A / Napalilactone Skeleton," 37<sup>th</sup> National Organic Symposium, June 10-14, 2001, Montana State University, Bozeman, MT. Poster Presentation 182.
- Trisha A. Duffey**,\* **Steve T. Staben**,\* J. R. Vyvyan, "Studies on the Synthesis of Medium Ring Ethers via Phenol Epoxide Cyclizations," ACS Puget Sound Section Undergraduate Research Symposium, May 5, 2001, The Evergreen State College, Olympia, WA. Poster Presentation.
- Bevin W. Parks**,\* J. R. Vyvyan, Jennifer M. Oaksmith\* "Studies Toward the Total Synthesis of Heliannuols C and E," ACS Puget Sound Section Undergraduate Research Symposium, May 5, 2001, The Evergreen State College, Olympia, WA. *Named Outstanding Poster*.
- Allison J. Johnson**,\* Cheryl M. Schwenk,\* J. R. Vyvyan, "Studies Toward the Synthesis of the Gibbilimbols" ACS Puget Sound Section Undergraduate Research Symposium, Western Washington University, May 6, 2000, Bellingham, WA. Oral presentation.
- Jennifer M. Oaksmith**,\* J. R. Vyvyan, "Studies Directed Toward the Synthesis of Heliannuols C and E" ACS Puget Sound Section Undergraduate Research Symposium, Western Washington University, May 6, 2000, Bellingham, WA. Oral presentation.
- J. R. Vyvyan**, and Ryan E. Looper<sup>#</sup> "Total Synthesis of ( $\pm$ )-Heliannuol D, an Allelochemical from *Helianthus annuus*," Division of Organic Chemistry proceedings, ORGN 849, 219<sup>th</sup> National ACS Meeting, March 26-30 2000, San Francisco, CA. Oral Presentation.
- Ryan E. Looper**,<sup>#</sup> Cheryl S. Ingram,\* J. R. Vyvyan, "Synthetic Studies on Allelopathic Natural Products: The Heliannuols," 36<sup>th</sup> National Organic Symposium, June 13-17, 1999, Madison, WI. Poster Presentation 272.
- Emily A. Peterson**,\* J. R. Vyvyan, "Total Synthesis of the Anti-Leukemia Agent Caparratriene and Related Compounds," 36<sup>th</sup> National Organic Symposium, June 13-17, 1999, Madison, WI. Poster Presentation 273.
- Ryan E. Looper**,<sup>#</sup> J. R. Vyvyan, "Synthetic Studies on Allelopathic Natural Products: The Heliannuols," Sigma Xi Research Symposium, Western Washington University, May 19, 1999, Bellingham, WA. *Named Outstanding Graduate Student Poster*.
- Brandon S. Stillwell**,<sup>#</sup> J. R. Vyvyan, "Reagent Controlled Asymmetric Iodoetherification," Sigma Xi Research Symposium, Western Washington University, May 19, 1999, Bellingham, WA. Poster presentation.
- Emily A. Peterson**,\* J. R. Vyvyan, "Total Synthesis of the Anti-Leukemia Agent Caparratriene and Related Compounds," Sigma Xi Research Symposium, Western Washington University, May 19, 1999, Bellingham, WA. *Named Outstanding Undergraduate Poster*.
- Emily A. Peterson**,\* J. R. Vyvyan, "An Expedient Total Synthesis of ( $\pm$ )-Caparratriene" ACS Puget Sound Section Undergraduate Research Symposium, Central Washington University, April 24, 1999, Ellensburg, WA. *Named Outstanding Presentation*.
- S. K. Taylor, S. A. Meyer,\* L. J. Simons,\* and **J. R. Vyvyan**, "Microbial Nitrile Hydrolysis in Synthesis: Pheromone of the Carpenter Bee," 35<sup>th</sup> National Organic Symposium, June 22-26, 1997, San Antonio, TX. Poster Presentation 271.
- S. K. Taylor**, L. J. Simons,\* J. R. Vyvyan, and N. K. Wood,\* "Conversion of Hydroxynitriles to Lactones by Microbial Hydrolysis," Division of Organic Chemistry proceedings, 213<sup>th</sup> National ACS Meeting, April 1997, San Francisco, CA. Oral Presentation.
- T. R. Hoye** and J. R. Vyvyan "Ene + Yne + (Group VI Metal) Carbene Cyclization Reactions as Routes to Polycyclic Sesquiterpenes," Pre-OMCOS Symposium, August 1995, University of California-Davis. Invited Lecture.
- T. R. Hoye and **J. R. Vyvyan** "Applications of the Fischer Carbene Polycyclic Cyclopropanation Reaction in Natural Product Synthesis," 34<sup>th</sup> National Organic Symposium, June 11-15, 1995, Williamsburg, VA. Poster Presentation 205.
- T. R. Hoye, D. M. Koltun,\* and **J. R. Vyvyan** "A Fischer Carbene-Based Synthesis of ( $\pm$ )-Carabrone," Division of Organic Chemistry proceedings, 209<sup>th</sup> National ACS Meeting, April 1995, Anaheim, CA. Poster Presentation.
- T. R. Hoye, P. R. Hanson, and **J. R. Vyvyan** "A Practical Guide to First-Order Multiplet Analysis in <sup>1</sup>H NMR Spectroscopy," Division of Organic Chemistry proceedings, 206<sup>th</sup> National ACS Meeting, August 1993, Chicago, IL. Poster Presentation.

**J. R. Vyvyan** and L. A. Ochrymowycz “Synthesis of Preconformed Tetrathiacrown Ethers,” Thirteenth Annual Waldo Semon Chemistry Symposium, April, 1991, Kent State University, Kent, OH. ***Finalist in Undergraduate Research Competition.***

**J. R. Vyvyan**, M. J. Mayer, and L. A. Ochrymowycz “Synthesis of Preconformed Tetrathiacrown Ethers,” First Annual Argonne Symposium for Undergraduates in Science, Engineering, and Mathematics, November, 1990, Argonne National Laboratory, Argonne, IL.

**J. R. Vyvyan**, M. J. Mayer, and L. A. Ochrymowycz “Synthesis of Endodentate Tetrathiacrown Ethers,” 41<sup>st</sup> Annual Undergraduate Research Symposium, Chicago Section of the ACS, Great Lakes Regional ACS Meeting, May 1990, Northern Illinois University, DeKalb, IL. ***Named Outstanding Undergraduate Paper.***

## Memberships in Professional Societies:

American Chemical Society  
Division of Organic Chemistry  
Division of Chemical Education  
Division of Agrochemicals

Council on Undergraduate Research

## Teaching

Course Number	Title	Terms Taught
Chem 351	Organic Chemistry I	7 times since F97, most recent W09
Chem 352	Organic Chemistry II	7 times since W98, most recent S09
Chem 353	Organic Chemistry III	6 times since S98, most recent S08
Chem 354	Organic Chemistry Laboratory I	15 times since W98, most recent W09
Chem 355	Organic Chemistry Laboratory II	6 times since S98, most recent S09
Chem 425B/553	Organic Reactions	4 times since S99, most recent W07
Chem 425C/556	Medicinal Chemistry	S00, S02, S04
Chem 454/554	Organic Spectroscopy	7 times since F98, most recent F08
Chem 455/555	Advanced NMR Techniques	W02, W04, W08
Chem 595	Seminar	S98, S99, F00

## Service

### Department of Chemistry

#### *Departmental grant proposals:*

Principal Investigator: National Science Foundation-Major Research Instrumentation: "MRI/RUI: Acquisition of a 500-MHz Nuclear Magnetic Resonance Spectrometer at Western Washington University" (NSF-0216604) 8/15/02-7/31/05 \$454,101

Primary author: WWU Student Technology Fee program: "Upgrade NMR Facility in Chemistry," 2001, \$116,000

Contributing author/editor: Research Corporation/Murdock Charitable Trust Department Development Grant, 2000-2006, \$746,000

Department Space Committee, 2007-2009

Department Graduate Committee, 1997-2005 and 2007-2009; Chair 2001-2005 and 2007-2009

Department Honors Committee, 2004-2005

Organic Chemistry Faculty Search Committee, Chair, 2006, 2007, 2008

Organic Chemistry Faculty Search Committee, 2005

Biochemistry Faculty Search Committee, Chair, 2004

Department Lab Operations and Safety Committee, 1997-1999

Department Steering Committee, 2001-2003

Faculty mentor for Assistant Professor Gregory B. O'Neil, 2008-present

Faculty mentor for Assistant Professor Timothy B. Clark, 2007-present

Faculty mentor for Assistant Professor Christopher J. A. Daley, 2002-2007

Departmental Scholars Day Coordinator for Keynote Speaker, 2001, 2002

ACS Student Affiliate co-Advisor, 1998-2001

Commencement Representative

*WWU M.S. Thesis Committees Chaired:*

Ryan E. Looper, *Studies Directed Toward the Synthesis of Allelopathic Natural Products: the Heliannuols, Glandulone A, and Related Aromatic Bisabolene Natural Products*, August 1999.

Brandon Stillwell, *Reagent Controlled Asymmetric Iodoetherification*, May 2000.

Courtney Rubens, *Studies Toward the Synthesis of Pathylactone A and Napalilactone*, August 2001.

Christian Holst, *Studies Toward the Synthesis of Lanneaquinol, the Gibbilimbols and Related Alkylated Hydroquinones*, August 2001.

Celeste Loitz, *Studies Toward the Synthesis of Benzoxocane-containing Natural Products: Heliannuol A, K, and Helianane*, June 2004.

Amanda Henry, *Small Molecule Models of Di- and Tri-Block Co-polymer Coupling Sites*, December 2005.

Jennifer A. Meyer, *Studies on the Total Synthesis of Cananodine*, March 2006.

James R. Coats, *Synthesis and Evaluation of Heliannuol C analogues*, June 2007.

Erik W. Werner, *Synthesis of Benzoxocanes via Conformationally Constrained Phenol-Epoxyde Cyclizations*, July 2007.

Jennifer K. Johnson, *Enantioselective Aromatic Claisen Rearrangement Catalyzed by Nonracemic BINOL Complexes*, July 2007.

Rebecca A. Swanson, *Applications of Noble Metal Complexes in Catalysis*, June 2008.

*Other M.S. Thesis Committee Membership:*

Roxanne Hulet Kelly, June 2001 (Chemistry)

Sandra Ryan, Fall 2005 (Huxley College of the Environment)

Rachel Zack, 2008 (Biology)

## Western Washington University

Research Advisory Council (RAC), 2008-2010

Patent & Copyright Committee (PCC), 2009-2010

Selection Committee, Peter J. Elich Excellence in Teaching Award, 2009

College of Sciences and Technology, Special Merit Review Committee, 2009

AMSEC polymers/composites faculty Search Committee, 2008-9

Fund for the Enhancement of Graduate Research Committee, 2000-2005; Chair, 2002-2005

College of Sciences and Technology, Professional Performance and Development Review Committee, 2004

College of Sciences and Technology, Founding Dean Search Committee, 2003

College of Arts and Sciences Professional Performance and Development Review Committee, 2003

Faculty Senate, 1999-2001

## Professional

### Grant Proposal Reviewer:

National Institutes of Health  
National Science Foundation  
Research Corporation  
American Chemical Society Petroleum Research Fund (ACS-PRF)  
M. J. Murdock Charitable Trust

### Manuscript Reviewer:

*Journal of Organic Chemistry*  
*Organic Letters*  
*Tetrahedron*  
*Tetrahedron Letters*

*Tetrahedron: Asymmetry*  
*Letters in Organic Chemistry*  
*Molecules*  
*Northwest Science*

### Book Reviewer:

Oxford University Press  
W. H. Freeman and Company

ACS Petroleum Research Fund Non-doctoral grant review panel, June 2009

National Institutes of Health (Synthetic and Biological Chemistry B Study Section) June 2008

Award Chair, Linus Pauling Medal Award, 2008

National Science Foundation MRI program (CHE) panelist, Arlington, VA, 2007

Reviewer, Fourth World Congress on Allelopathy, International Allelopathy Society, 2005.

Invited Panelist, National Science Foundation Workshop on the Postdoctorate, Arlington, VA, May 11-13, 2003

National Science Foundation CAREER program (SYO) panelist, Arlington, VA, 2003 and 2004

National Science Foundation Graduate Research Fellowship Program panelist, Arlington, VA, 2005 and 2006

Symposium Chair, Linus Pauling Medal Symposium, Bellingham, WA, October 21, 2000