

## Timothy F. Jamison

Associate Provost and Robert Robinson Taylor Professor of Chemistry  
Massachusetts Institute of Technology  
Department of Chemistry  
77 Massachusetts Avenue, Room 18-590, Cambridge, MA 02139

Phone: (617) 253-2135

Email: [tfj@mit.edu](mailto:tfj@mit.edu)

<http://web.mit.edu/chemistry/jamison>

### Education

1997 Ph.D. (Chemistry), Harvard University  
1990 B.S. (Chemistry), University of California, Berkeley

### Research and Professional Experience

2019 – present Associate Provost, MIT  
2015 – 2019 Department Head, MIT, Department of Chemistry  
2015 – present Robert R. Taylor Professor of Chemistry, MIT Department of Chemistry  
2009 – present Professor, MIT, Department of Chemistry  
2006 – 2009 Associate Professor, MIT, Department of Chemistry  
2004 – 2006 Associate Professor (without tenure), MIT, Department of Chemistry  
2002 – 2005 Paul M. Cook Career Development Chair  
1999 – 2004 Assistant Professor, MIT, Department of Chemistry  
1997 – 1999 Postdoctoral Fellow, Harvard University (Prof. Eric N. Jacobsen)  
1991 – 1997 Graduate Student, Harvard University (Prof. Stuart L. Schreiber)  
1990 – 1991 Fulbright Fellow, ETH Zürich, Switzerland (Prof. Steven A. Benner)  
1988 – 1990 Undergraduate Research, UC Berkeley (Prof. Henry Rapoport)  
1988 Summer Research Assistant, Eastman Kodak, Rochester, NY  
1987 Co-op Research Assistant, ICI Americas, Richmond, CA

### Honors, Awards, and Professional Activities

2018 Change Maker Award, MIT Title IX  
2016 FP - Global Thinker of 2016  
2015 – 2018 *Chemical Reviews*, Associate Editor  
2014 – present Co-Founder, Chairman of the Board, and Scientific Advisor, Snapdragon Chemistry, Inc.  
2014 Council of Chemical Research Collaboration Award  
2013 Teaching Prize for Undergraduate Education, MIT School of Science  
2012 – present Fellow of the Royal Society of Chemistry  
2012 Royal Society of Chemistry Merck Award  
2011 Arthur C. Cope Scholar Award, American Chemical Society  
2011 – present *Journal of Flow Chemistry*, Editorial Board  
2011 – present *Advanced Synthesis and Catalysis*, Academic Advisory Board  
2008 – 2010 Petroleum Research Fund Advisory Board  
2006 JSPS Invitation Fellowship  
2004 Sloan Research Fellow  
2004 GlaxoSmithKline Scholar Award  
2003 Amgen Young Investigator Award  
2002 Paul M. Cook Career Development Chair  
2002 Boehringer Ingelheim New Investigator Award  
2001 National Science Foundation CAREER Award  
2000 3M Innovation Award  
1997 – 1999 Postdoctoral Fellow, Cancer Research Fund, Damon Runyon-Walter Winchell Foundation  
1991 – 1994 National Science Foundation Predoctoral Fellow  
1991 – 1993 Certificate of Distinction in Teaching, Harvard University (3 times)  
1990 – 1991 Fulbright Fellow (Swiss Universities Grant)  
1990 Graduated with High Honors (Chemistry), UC Berkeley  
1990 Saegebarth Prize (Undergraduate Research Excellence in Chemistry)

1990	Phi Beta Kappa
1988 – 1989	President's Undergraduate Fellow, UC Berkeley
1985 – 1989	Chancellor's Scholar, UC Berkeley
1986 – 1989	Eastman Kodak Scholar

## Publications:

### MIT

#### 2022

Mear SJ, Nguyen LV, Rochford AJ, Jamison TF. "Synthesis of (±)-Emtricitabine and (±)-Lamivudine by Chlorotrimethylsilane-Sodium Iodide Promoted Vorbrüggen Glycosylation". *The Journal of Organic Chemistry* **2022**; 87 (5), 2887-2897 DOI: 10.1021/acs.joc.1c02772

#### 2021

Gopalsamuthiram, V.; Kadam, A. L.; Noble, J.; Snead, D. R.; Williams, C.; Jamison, T.F.; Senanayake, C.; Yadaw, A.; Roy, S.; Sirasani, G.; Gupton, B.F.; Burns, J.; Cook, D.W.; Stringham, R.W.; Ahmad, S.; and Krack, R.; "Toward a Practical, Nonenzymatic Process for Investigational COVID-19 Antiviral Molnupiravir from Cytidine: Supply Centered Synthesis" *Organic Process Research & Development*. **2021** 25, 2679-2685. DOI: 10.1021/acs.oprd.1c00219

Ahlqvist, G. P.; Burke, E. G.; Johnson, J. A.; Jamison, T. F. "Continuous dimethyldioxirane generation for polymer epoxidation," *Polymer Chem.* **2021**, 12, 489-493. DOI: 10.1039/d0py01676d.

Gopalsamuthiram, V.; Williams, C.; Noble, J.; Jamison, T. F.; Gupton, B. F.; Snead, D. R. "A Concise Route to MK-4482 (EIDD-2801) from Cytidine: Part 2," *Syn. Lett.* **2021**, 32, 326-328. DOI: 10.1055/a-1275-2848.

Dietz, J.-P.; Ferenc, D.; Jamison, T. F.; Gupton, B. F.; Opatz, T. "Di-tert-butyl Phosphonate Route to the Antiviral Drug Tenofovir," *Org. Process Res. Dev.* **2021**, 25, 789-798. DOI: 10.1021/acs.oprd.0c00473.

Ahlqvist, G. P.; McGeough, C. P.; Senanayake, C.; Armstrong, J. D.; Yadaw, A.; Roy, S.; Ahmad, S.; Snead, D. R.; and Jamison, T. F. "Progress Toward a Large-Scale Synthesis of Molnupiravir (MK-4482, EIDD-2801) from Cytidine," *ACS Omega* **2021**, 6, 10396-10402. DOI: 10.1021/acsomega.1c00772.

Breen, C. P.;\* Nambiar, A. M. K.;\* Jamison, T. F.; Jensen, K. F. "Ready, Set, Flow! Automated Continuous Synthesis and Optimization," *Trends in Chemistry* **2021**, 3, 373-386. DOI: 10.1016/j.trechm.2021.02.005. \*contributed equally

Fu, W. G.; MacQueen, P. M.; Jamison, T. F. "Continuous flow strategies for using fluorinated greenhouse gases in fluoroalkylations," *Chemical Society Reviews* **2021**, 50, 7378-7394. DOI: 10.1039/d0cs00670j.

Florit, F.; Nambiar, A. M. K.; Breen, C. P.; Jamison, T. F.; Jensen, K. F. "Design of dynamic trajectories for efficient and data-rich exploration of flow reaction design spaces," *React. Chem. Eng.* **2021**, 6, 2306-2314. Advance Article. DOI: 10.1039/D1RE00350J.

Gopalsamuthiram, V.; Kadam, A. L.; Noble, J.; Snead, D.; Williams, C.; Jamison, T. F.; Senanayake, C.; Yadaw, A.; Roy, S.; Sirasani, G.; Gupton, B. F.; Burns, J.; Cook, D. W.; Stringham, R. W.; Ahmad, S.; Krack, R. "Towards a Practical, Non-enzymatic Process for Molnupiravir from Cytidine," *Organic Process Research & Development* **2021** 25, 2679-2685, DOI: 10.1021/acs.oprd.1c00219

McGeough, C. P.;\* Mear, S. J.;\* Jamison, T. F. "A Call for Increased Focus on Reproductive Health within Lab Safety Culture," *J. Am. Chem. Soc.* **2021**, 143, 12422-12427. DOI: 10.1021/jacs.1c03725. \*contributed equally

## 2020

- Vasudevan, N.; Ahlqvist, G. P.; McGeough, C. P.; Paymode, D. J.; Cardoso, F. S. P.; Lucas, T.; Dietz, J.-P.; Opatz, T.; Jamison, T. F.; Gupton, F. B.; Snead, D. R. "A concise route to MK-4482 (EIDD-2801) from cytidine," *Chem. Comm.* **2020**, 56, 13363-13364. DOI: 10.1039/d0cc05944g.
- Danahy, K. E.; Styduhar, E. D.; Fodness, A. M.; Heckman, L. M.; Jamison, T. F. "On-Demand Generation and Use in Continuous Synthesis of the Ambiphilic Nitrogen Source Chloramine," *Org. Lett.* **2020**, 22, 8392-8395. DOI: 10.1021/acs.orglett.0c03021.
- Fu, W. C.; Jamison, T. F. "Deuteriodifluoromethylation and *gem*-Difluoroalkenylation of Aldehydes Using ClCF<sub>2</sub>H in Continuous Flow," *Angew. Chem. Int. Ed.* **2020**, 59, 2-8.
- Nguyen, L.; Jamison, T. F. "Total Synthesis of (±)-Sceptrin," *Org. Lett.* **2020**, <https://pubs.acs.org/doi/10.1021/acs.orglett.0c01381>
- Breen, C. P.; Parrish, C.; Shangguan, N.; Majumdar, S.; Muren, H.; Jamison, T. F.; Bio, M. M. "A Scalable Membrane Pervaporation Approach for Continuous Flow Olefin Metathesis," *Org. Process Res. Dev.* **2020**, <https://pubs.acs.org/doi/abs/10.1021/acs.oprd.0c00061>.
- Monos, T. M.; Jaworski, J. N.; Stephens, J. C.; Jamison, T. F. "Continuous-Flow Synthesis of Tramadol from Cyclohexanone," *Synlett.* **2020**, 31, A-G.
- Russell, M. G.; Veryser, C.; Hunter, J. F.; Beingessner, R. L.; Jamison, T. F. "Monolithic Silica Support for Immobilized Catalysis in Continuous Flow," *Adv. Synth. Catal.* **2020**, 362, 314-319.

## 2019

- Seo, H. Jamison, T. F. "Catalytic Generation and Use of Ketyl Radical from Unactivated Aliphatic Carbonyl Compounds," *Org. Lett.* **2019**, 21, 10159-10163.
- Mear, S. J.; Jamison, T. F. "Diazotization of S-Sulfonyl-cysteines," *J. Org. Chem.* **2019**, 84, 15001-15007.
- Breen, C. P.; Jamison, T. F. "Continuous Flow Synthesis of ACE Inhibitors From *N*-Substituted L-Alanine Derivatives," *Chem. Eur. J.* **2019**, 25, 14527-14531.
- Kelley, E. H.; Jamison, T. F. "Synthesis of the *EFG* Framework of the Tamulamides A and B," *Org. Lett.* **2019**, 21, 8027-8030.
- Coley, C. W.; Thomas, D. A.; Lummiss, J. A. M.; Jaworski, J. N.; Breen C. P.; Schultz, V.; Hart, T.; Fishman, J. S.; Rogers, L.; Gao, H.; Hicklin, R. W.; Plehiers, P. P.; Byington, J.; Piotti, J. S.; Green, W. H.; Hart, A. J.; Jamison, T. F.; Jensen, K. F. "A Robotic Platform for Flow Synthesis of Organic Compounds Informed by AI Planning," *Science* **2019**, 365, eaax1566.
- **MIT News:** Ham, B. "[Guided by AI, robotic platform automates molecule manufacture](http://news.mit.edu/2019/automate-molecule-production-ai-0808)" <http://news.mit.edu/2019/automate-molecule-production-ai-0808>
  - **Technology Networks:** "[Pairing Prediction and Robotic Flow Synthesis](https://www.technologynetworks.com/drug-discovery/news/pairing-prediction-and-robotic-flow-synthesis-322689)" <https://www.technologynetworks.com/drug-discovery/news/pairing-prediction-and-robotic-flow-synthesis-322689>
- Fu, W. C.; Jamison, T. F. "Modular Continuous Flow Synthesis of Imatinib and Analogues," *Org. Lett.* **2019**, 21, 6112-6116.

Sittihan, S.; Jamison, T. F. "Total Synthesis of the Marine Ladder Polyether Gymnocin B," *J. Am. Chem. Soc.* **2019**, *141*, 11239-11244.

McGeough, C. P.; Strom, A. E.; Jamison, T. F. "Ni-Catalyzed Cross-Electrophile Coupling for the Synthesis of Skipped Polyenes," *Org. Lett.* **2019**, *10*, 3606-3609.

Russell, M. G.; Jamison, T. F. "Seven-Step Continuous Flow Synthesis of Linezolid Without Intermediate Purification," *Angew. Chem. Int. Ed.* **2019**, *58*, 7678-7681.

Bedermann, A. A.; McTeague, T. A.; Jamison, T. F. "Automated On-Demand Titration of Organometallic Reagents in Continuous Flow," *Org. Process. Res. Dev.* **2019**, *23*, 278-282.

Coley, C. W.; Jin, W.; Rogers, L.; Jamison, T. F.; Jaakkola, T. S.; Green W. H.; Barzilay, R.; Jensen, K. F. "A Graph Convolution Neural Network Model for the Prediction of Chemical Reactivity," *Chem. Sci.* **2019**, *10*, 370-377.

## 2018

Seo, H.; Nguyen, L. V.; Jamison, T. F. "Using Carbon Dioxide as a Building Block in Continuous Flow Synthesis," *Adv. Synth. Catal.* **2018**, *361*, 247-264.

Bédard, A.-C.; Adamo, A.; Aroh, K. C.; Russell, M. G.; Bedermann, A. A.; Torosian, J.; Yue, B.; Jensen, K. F.; Jamison, T. F. "Reconfigurable System for Automated Optimization of Diverse Chemical Reactions," *Science* **2018**, *361*, 1220-1225.

- **C&E News:** Nguyen, T. "Chemists Hand Off Reaction Optimization to Automated Plug and Play Flow System" <https://cen.acs.org/synthesis/Chemists-hand-off-reaction-optimization/96/i38>
- **MIT News:** Trafton, A. "Plug-and-Play Technology Automates Chemical Synthesis" <http://news.mit.edu/2018/technology-automates-chemical-synthesis-0920>

Weber, J. M.; Longstreet, A. R.; Jamison, T. F. "Bench-Stable Nickel Precatalysts with Heck-type Activation," *Organometallics* **2018**, *37*, 2716-2722.

Gates, Z. P.; Vinogradov, A. A.; Quartararo, A. J.; Bandyopadhyay, A.; Choo, Z.-N.; Evans, E. D.; Halloran, K. H.; Mijalis, A. J.; Mong, S. K.; Simon, M. D.; Standley, E. A.; Styduhar, E. D.; Tasker, S. Z.; Touti, F.; Weber, J. M.; Wilson, J. L.; Jamison, T. F.; Pentelute, B. L. "Xenoprotein Engineering via Synthetic Libraries," *Proc. Natl. Acad. Sci.* **2018**, *115*, E5298-E5306.

Heckman, L. M.; He, Z.; Jamison, T. F. "Synthesis of Highly Substituted 2-Arylindoles via Copper-Catalyzed Coupling of Isocyanides and Arylboronic Acids," *Org. Lett.* **2018**, *20*, 3263-3267.

Leibfarth, F. A.; Russell, M. G.; Langley, D. M.; Seo, H.; Kelly, L. P.; Carney, D. W.; Sello, J. K.; Jamison, T. F. "Continuous-Flow Chemistry in Undergraduate Education: Sustainable Conversion of Reclaimed Vegetable Oil into Biodiesel," *J. Chem. Educ.* **2018**, *95*, 1371-1375.

Ziegler, R. E.; Desai, B. K.; Jee, J.-A.; Gupton, B. F.; Roper, T. D.; Jamison, T. F. "7-Step Flow Synthesis of the HIV Integrase Inhibitor Dolutegravir," *Angew. Chem. Int. Ed.* **2018**, *57*, 7181-7185.

Kelley, E. H.; Jamison, T. F. "Synthesis of the ABC Framework of Tamulamides A and B," *Bioorg. Med. Chem.* **2018**, *26*, 5327-5335.

Strieth-Kalthoff, F.; Longstreet, A. R.; Weber, J. M.; Jamison, T. F. "Bench-Stable *N*-Heterocyclic Carbene Nickel Precatalysts for C-C and C-N Bond-Forming Reactions," *ChemCatChem* **2018**, *10*, 2873-2877.

Li, H.; Breen, C. P.; Seo, H.; Jamison, T. F.; Fang, Y.-Q.; Bio, M. M. "Ni-Catalyzed Electrochemical Decarboxylative C-C couplings in Batch and Continuous Flow," *Org. Lett.* **2018**, *20*, 1338-1341.

Zhang, P.; Weeranoppanant, N.; Thomas, D. A.; Tahara, K.; Stelzer, T.; Russell, M. G.; O'Mahony, M.; Myerson, A. S.; Lin, H.; Kelly, L. P.; Jensen, K. F.; Jamison, T. F.; Dai, C.; Cui, Y.; Briggs, N.; Beingessner, R. L.; Adamo, A. "Advanced Continuous Flow Platform for On-Demand Pharmaceutical Manufacturing," *Chem. Eur. J.* **2018**, *24*, 2776-2784.

Katcher, M. H.; Jamison, T. F. "Studies Toward Brevisulcenal F via Convergent Strategies for Marine Ladder Polyether Synthesis," *Tetrahedron* **2018**, *74*, 1111-1122.

## 2017

Britton, J.; Jamison, T. F. "The Assembly and Use of Continuous Flow Systems for Chemical Synthesis," *Nat. Protoc.* **2017**, *12*, 2423-2446.

Seo, H.; Bédard, A.-C.; Chen, W. P.; Hicklin, R. W.; Alabugin, A.; Jamison, T. F. "Selective N-Monomethylation of Primary Anilines with Dimethyl Carbonate in Continuous Flow," *Tetrahedron* **2017**, *74*, 3124-3128.

Morse, P. D.; Jamison, T. F. "Synthesis and Utilization of Nitroalkyne Equivalents in Batch and Continuous Flow," *Angew. Chem. Int. Ed.* **2017**, *56*, 13999-14002.

Seo, H.; Liu, A.; Jamison, T. F. "Direct  $\beta$ -Selective Hydrocarboxylation of Styrenes with CO<sub>2</sub> Enabled by Continuous Flow Photoredox Catalysis," *J. Am. Chem. Soc.* **2017**, *139*, 13969-13972.

Wicker, A. C.; Leibfarth, F. A.; Jamison, T. F. "Flow-IEG Enables Programmable Thermodynamic Properties in Sequence-Defined Unimolecular Macromolecules," *Polym. Chem.* **2017**, *8*, 5786-5794.

Lin, H.; Dai, C.; Jamison, T. F.; Jensen, K. F. "A Rapid Total Synthesis of Ciprofloxacin Hydrochloride in Continuous Flow," *Angew. Chem. Int. Ed.* **2017**, *56*, 8870-8873.

Su, X.; Hübner, J.; Kauke, M. J.; Dalbosco, L.; Thomas, J.; Gonzalez, C. C.; Zhu, E.; Franzreb, M.; Jamison, T. F.; Hatton, T. A. "Redox Interfaces for Electrochemically Controlled Protein-Surface Interactions: Bioseparations and Heterogeneous Enzyme Catalysis," *Chem. Mater.* **2017**, *29*, 5702-5712.

Su, X.; Bromberg, L.; Tan, K.-J.; Jamison, T. F.; Padhye, L. P.; Hatton, T. A. "Electrochemically Mediated Reduction of Nitrosamines by Hemin-Functionalized Redox Electrodes," *Environ. Sci. Technol. Lett.* **2017**, *4*, 161-167.

Su, X.; Tan, K.-J.; Elbert, J.; Rüttiger, C.; Gallei, M.; Jamison, T. F.; Hatton, T. A. "Asymmetric Faradaic Systems for Selective Electrochemical Separations," *Energy Environ. Sci.* **2017**, *10*, 1272-1283.

Britton, J.; Jamison, T. F. "A Unified Continuous Flow Assembly-Line Synthesis of Highly Substituted Pyrazoles and Pyrazolines," *Angew. Chem. Int. Ed.* **2017**, *56*, 8823-8827.

Lummiss, J. A. M.; Morse, P. D.; Beingessner, R. L.; Jamison, T. F. "Towards More Efficient, Greener Syntheses Through Flow Chemistry," *Chem. Rec.* **2017**, *17*, 667-680.

Bédard, A.-C.; Longstreet, A. R.; Britton, J.; Wang, Y.; Moriguchi, H.; Hicklin, R. W.; Green, W. H.; Jamison, T. F. "Minimizing E-Factor in the Continuous-Flow Synthesis of Diazepam and Atropine," *Bioorg. Med. Chem.* **2017**, *25*, 6233-6241.

Seo, H.; Katcher, M. H.; Jamison, T. F. "Photoredox Activation of Carbon Dioxide for Amino Acid Synthesis in Continuous Flow," *Nat. Chem.* **2017**, 9, 453-356.

Morse, P. D.; Beingessner, R. L.; Jamison, T. F. "Enhanced Reaction Efficiency in Continuous Flow," *Isr. J. Chem.* **2017**, 57, 218-227.

## 2016

McTeague, T. A.; Jamison T. F. "Photoredox Activation of SF<sub>6</sub> for Fluorination," *Angew. Chem. Int. Ed.* **2016**, 55, 15072-15075.

Su, X.; Kulik, H. J.; Jamison, T. F.; Hatton, T. A. "Anion-Selective Redox-Electrodes: Electrochemically-Mediated Separation with Heterogeneous Organometallic Interfaces," *Adv. Funct. Mater.* **2016**, 26, 3394-3404.

Adamo, A.; Beingessner, R. L.; Behnam, M.; Chen, J.; Jamison, T. F.; Jensen, K. F.; Monbaliu, J.-C. M.; Myerson, A. S.; Revalor, E. M.; Snead, D. R.; Stelzer, T.; Weeranoppanant, N.; Wong, S. Y.; Zhang, P. "On-Demand Continuous Flow Production of Pharmaceuticals in a Compact, Reconfigurable System," *Science* **2016**, 352, 61-67.

- **C&E News (Top Research of 2016):** Borman, S. "Mini Factory Made Drugs on Demand" <http://yearinreview.cenmag.org/top-research-of-2016/>
- **MIT Tech Review:** Orcutt, M. "The Drug-Making Process Is Slow and Wasteful – This Machine Could Fix That" <https://www.technologyreview.com/s/601142/the-drug-making-process-is-slow-and-wasteful-this-machine-could-fix-that/>
- **IEEE Spectrum:** Waltz, E. "The Dial-a-Drug-Machine" <http://spectrum.ieee.org/the-human-os/biomedical/devices/the-dialadug-machine>
- **In the Pipeline:** Lowe, D. "Drugs on Demand" <http://blogs.sciencemag.org/pipeline/archives/2016/04/01/drugs-on-demand>
- **Nature:** "Drug Manufacture of Demand" <http://www.nature.com/nature/journal/v532/n7597/full/532008b.html>
- **C&E News:** Borman, S. "Mini Drug Factory Continuously Produces Doses" <http://cen.acs.org/articles/94/i14/Mini-drug-factory-continuously-produces.html>
- **Scientific American:** Roehr, B. "On-Demand Drug Production Is on the Horizon" <http://www.scientificamerican.com/article/on-demand-drug-production-is-on-the-horizon/>
- **MIT News:** Trafton, A. "Pharmacy on Demand" <http://news.mit.edu/2016/portable-pharmacy-on-demand-0331>
- **STAT:** Samuel, L. "This Fridge-Sized Machine Can Pop Out Meds for Allergies, Depression, and Anxiety" <https://www.statnews.com/2016/03/31/pharmacy-on-demand-drugs/>
- **Kurzweil Accelerating Intelligence:** "Creating Custom Drugs on a Portable Refrigerator-Size Device" <http://www.kurzweilai.net/creating-custom-drugs-on-a-portable-refrigerator-size-device>
- **UPI:** Norton, A. "Fridge-Sized Machine Makes Prescription Drugs on Demand" [http://www.upi.com/Health\\_News/2016/03/31/Fridge-sized-machine-makes-prescription-drugs-on-demand/6171459447943/](http://www.upi.com/Health_News/2016/03/31/Fridge-sized-machine-makes-prescription-drugs-on-demand/6171459447943/)
- **HNGN:** Griffin, C. "New Pharmacy on Demand Device Creates Variety of Drugs" <http://www.hngn.com/articles/194258/20160401/new-pharmacy-demand-device-creates-variety-drugs.htm>
- **Daily Mail UK:** Liberatore, S. "Print Your Pills at Home: Researchers Reveal Fridge-Sized Machine that Can Make Prescription Drugs on Demand" <http://www.dailymail.co.uk/sciencetech/article-3519735/Print-pills-home-Researchers-reveal-fridge-sized-machine-make-prescription-drugs-demand.html>

- **Inquisitr:** Babcock, L. "Pharmacy on Demand: Will We Soon Be Able to Print Pills At Home?" <http://www.inquisitr.com/2956432/pharmacy-on-demand-will-we-soon-be-able-to-print-pills-at-home/>
- **The Pharmaceutical Journal: Oswald, K.** "Compact Machine Produces Drugs Demand" <http://www.pharmaceutical-journal.com/sign-in?rtn=news-and-analysis/news/compact-machine-produces-drugs-on-demand/20200961.article>
- **MedlinePlus:** "Fridge-Sized Machine Makes Prescription Drugs On Demand" [https://www.nlm.nih.gov/medlineplus/news/fullstory\\_158072.html](https://www.nlm.nih.gov/medlineplus/news/fullstory_158072.html)
- **SciFeeds:** "On-Demand Continuous-Flow Production of Pharmaceuticals in a Compact, Reconfigurable System" <https://scifeeds.com/journal-article/on-demand-continuous-flow-production-of-pharmaceuticals-in-a-compact-reconfigurable-system/>

Haimov, E.; Nairoukh, Z.; Shterenberg, A.; Berkovitz, T.; Jamison, T. F.; Marek, I. "Stereoselective Formation of Fully Substituted Ketone Enolates," *Angew. Chem. Int. Ed.* **2016**, 55, 5517-5520.

## 2015

Barnes, J. C.; Ehrlich, D. J. C.; Gao, A. X.; Leibfarth, F. A.; Jiang, Y.; Zhou, E.; Jamison, T. F.; Johnson, J. A. "Iterative Exponential Growth of Stereo- and Sequence-Controlled Polymers," *Nature Chem.* **2015**, 7, 810-815.

Tasker, S. Z.; Jamison, T. F. "Highly Regioselective Indoline Synthesis Under Nickel/Photoredox Dual Catalysis," *J. Am. Chem. Soc.* **2015**, 137, 9531-9534.

Leibfarth, F. A.; Johnson, J. A.; Jamison, T. F. "Scalable Synthesis of Sequence-Defined, Unimolecular Macromolecules by Flow-IEG," *Proc. Natl. Acad. Sci. USA*, **2015**, 112, 10617-10622.

Dai, C.; Snead, D. R.; Zhang, P. "Continuous Flow Synthesis and Purification of Atropine with Sequential In-Line Separations of Structurally Similar Impurities," *J. Flow Chem.* **2015**, 5, 133-138.

Armbrust, K. W.; Beaver, M. G.; Jamison, T. F. "Rhodium-Catalyzed Endo-Selective Epoxide-Opening Cascades: Formal Synthesis of (–)-Brevisin," *J. Am. Chem. Soc.* **2015**, 137, 6941-6946.

Starkov, P.; Jamison, T. F.; Marek, I. "Electrophilic Amination: The Case of Nitrenoids," *Chem. Eur. J.* **2015**, 21, 5278-5300.

Standley, E. A.; Tasker, S. Z.; Jensen, K. L.; Jamison, T. F. "Nickel Catalysis: Synergy Between Method Development and Total Synthesis," *Acc. Chem. Res.* **2015**, 48, 1503-1514.

Jensen, K. L.; Nielsen, D. U.; Jamison, T. F. "A General Strategy for the Synthesis of Enantiomerically Pure Azetidines and Aziridines through Nickel-Catalyzed Cross-Coupling," *Chem. Eur. J.* **2015**, 21, 7379-7383.

Ocampo, C. E.; Lee, D.; Jamison, T. F. "Selective Lewis Acid Catalyzed Assembly of Phosphonomethyl Ethers: Three-Step Synthesis of Tenofovir," *Org. Lett.* **2015**, 17, 820-823.

Czabaniuk, L. C.; Jamison, T. F. "Hydroxyl-Substituted Ladder Polyethers via Selective Tandem Epoxidation Cyclization Sequence," *Org. Lett.* **2015**, 17, 774-777.

Snead, D. R.; Jamison, T. F. "A Three-Minute Synthesis and Purification of Ibuprofen: Pushing the Limits of Continuous Flow Processing," *Angew. Chem. Int. Ed.* **2015**, 54, 983-987.

## 2014

- Andrade, L. H.; Kroutil, W.; Jamison, T. F. "Continuous Flow Synthesis of Chiral Amines in Organic Solvents: Immobilization of E. coli Cells Containing Both  $\omega$ -Transaminase and PLP," *Org. Lett.* **2014**, 16, 6092–6095.
- He, Z.; Bae, M. W.; Wu, J.; Jamison, T. F. "Synthesis of Highly Functionalized Polycyclic Quinoxaline Derivatives Using Visible-Light Photoredox Catalysis," *Angew. Chem. Int. Ed.* **2014**, 53, 14451-14455.
- Zhang, P.; Russell, M. G.; Jamison, T. F. "Continuous Flow Total Synthesis of Rufinamide," *Org. Proc. Res. Dev.* **2014**, 18, 1567-1570.
- Jensen, K. L.; Standley, E. A.; Jamison, T. F. "Highly Regioselective Nickel-Catalyzed Cross-Coupling of *N*-Tosylaziridines and Alkylzinc Reagents," *J. Am. Chem. Soc.* **2014**, 136, 11145-11152.
- Wu, J.; Xiaoching, Y.; He, Z.; Mao, X.; Hatton, T. A.; Jamison, T. F. "Continuous Flow Synthesis of Ketones from Carbon Dioxide and Organolithiums or Grignard Reagents," *Angew. Chem. Int. Ed.* **2014**, 53, 8416-8420.
- Tasker, S. Z.; Standley, E. A.; Jamison, T. F. "Recent Advances in Homogeneous Nickel Catalysis," *Nature* **2014**, 509, 299-309.
- Standley, E. A.; Jamison, T. F. "A Broadly Applicable Strategy for Entry into Homogeneous Nickel(0) Catalysts from Air-Stable Ni(II) Complexes," *Organometallics* **2014**, 33, 2012-2018.
- Heider, P. L.; Born, S. C.; Basak, S.; Benyahia, B.; Lakerveld, R.; Zhang, H.; Hogan, R.; Buchbinder, L.; Wolfe, A.; Mascia, S.; Evans, J.; Jamison, T. F.; Jensen, K. F. "Development of a Multi-Step Synthesis and Workup Sequence for an Integrated, Continuous Manufacturing Process of a Pharmaceutical," *Org. React. Proc. Dev.* **2014**, 18, 402-409.
- Wu, J.; Xiaoching, Y.; Mao, X.; Jamison, T. F.; Hatton, T. A. "Microwave-Assisted Synthesis of Cyclic Carbonates from Olefins with Sodium Bicarbonate as the C1 Source," *ChemComm* **2014**, 50, 3245-3248.
- He, Z.; Jamison, T. F.; "Continuous-Flow Synthesis of Functionalized Phenols via Aerobic Oxidation of Grignard Reagents," *Angew. Chem. Int. Ed.* **2014**, 53, 3353-3357.
- Wu, J.; Kozak, J. A.; Simeon, F.; Hatton, T. A.; Jamison, T. F. "Mechanism-Guided Design of Flow Systems for Multicomponent Reactions: Conversion of CO<sub>2</sub> and Olefins to Cyclic Carbonates," *Chem. Sci.* **2014**, 5, 1227-1231.
- Tasker, S. Z.; Gutierrez, A. C.; Jamison, T. F. "Nickel-Catalyzed Mizoroki–Heck Reaction of Aryl Sulfonates and Chlorides with Electronically Unbiased Terminal Olefins: High Selectivity for Branched Products," *Angew. Chem. Int. Ed.* **2014**, 53, 1858-1861.

## 2013

- Kozak, J. A.; Wu, J.; Su, X.; Simeon, F.; Hatton, T. A.; Jamison, T. F. "Bromine-Catalyzed Conversion of CO<sub>2</sub> and Epoxides to Cyclic Carbonates Under Continuous Flow Conditions," *J. Am. Chem. Soc.* **2013**, 135, 18497-18501.
- Mascia, S. Heider, P. L.; Zhang, H.; Lakerveld, R.; Benyahia, B.; Barton, P. I.; Braatz, R. D.; Cooney, C. L.; Evans, J. M. B.; Jamison, T. F.; Jensen, K. F.; Meyerson, A. S.; Trout, B. L. "End-to-End Continuous Manufacturing of Pharmaceuticals: Integrated Synthesis, Purification, and Final Dosage Formulation," *Angew. Chem. Int. Ed.* **2013**, 52, 12359-12363.



- Byers, J. A.; Jamison, T. F. "Entropic Factors Provide Unusual Reactivity and Selectivity in Water-Promoted Epoxide-Opening Reactions," *Proc. Natl. Acad. Sci.* **2013**, *110*, 16724-16729.
- Schleicher, K. D.; Jamison, T. F. "A Reductive Coupling Strategy Toward Ripostatin A," *Beilstein J. Org. Chem.* **2013**, *9*, 1533-1550.
- Snead, D. R.; Jamison, T. F. "End-to-End Continuous Flow Synthesis and Purification of Diphenhydramine Hydrochloride Featuring Atom Economy, In-Line Separation, and Flow of Molten Ammonium Salts," *Chem. Sci.* **2013**, *4*, 2822-2827.
- Mousseau, J. J.; Morten, C. J.; Jamison, T. F. "A Dioxane Template for Highly Selective Epoxy Alcohol Cyclizations," *Chem. Eur. J.* **2013**, *19*, 10004-10016.
- Underwood, B. S.; Tanuwidjaja, J.; Jamison, T. F. "Total Syntheses of the Squalene-Derived Halogenated Polyethers ent-Dioxepandehydrothysiferol and Armatol A via Bromonium- and Lewis Acid-Initiated Epoxide-Opening Cascades," *Tetrahedron* **2013**, *69*, 5205-5220.
- Zhang, Y.; Blackman, M. L.; Leduc, A. B.; Jamison, T. F. "Peptide Fragment Coupling via Continuous Flow Photochemical Rearrangement of Nitrones," *Angew. Chem. Int. Ed.* **2013**, *52*, 4251-4255.
- Shen, B.; Jamison, T. F. "Continuous Flow Photochemistry for the Rapid and Selective Synthesis of 2'-Deoxy and 2',3'-Dideoxynucleosides," *Aust. J. Chem.* **2013**, *66*, 157-164.
- Kleinke, A. S.; Jamison, T. F. "Hydrogen-Free Alkene Reduction in Continuous Flow," *Org. Lett.* **2013**, *15*, 710-713.
- Standley, E. A.; Jamison, T. F. "Simplifying Nickel(0) Catalysis: An Air-Stable Nickel Precatalyst for the Internally Selective Benzylation of Terminal Alkenes," *J. Am. Chem. Soc.* **2013**, *135*, 1585-1592.
- 2012**
- Kleinke, A. S.; Webb, D.; Jamison, T. F. "Recent Progress in the Synthesis of Oxepanes and Medium Ring Ethers," *Tetrahedron* **2012**, *68*, 6999-7018.
- Anderson, N.; Gernaey, K. V.; Jamison, T. F.; Kirchner, M.; Wiles, C.; Leadbetter, N. E.; Sandford, G.; Richardson, P. "The Challenges and Benefits of Flow Chemistry to Optimize Drug Development," *Future Med. Chem.* **2012**, *4*, 1779-1789.
- Shen, B.; Jamison, T. F. "Rapid Continuous Synthesis of 5'-Deoxyribonucleosides in Flow via Brønsted Acid Catalysis," *Org. Lett.* **2012**, *14*, 3348-3351.
- Webb, D.; Jamison, T. F. "A Continuous Homologation of Esters: An Efficient Telescoped Reduction-Olefination Sequence," *Org. Lett.* **2012**, *14*, 2465-2467.
- Shen, B.; Bedore, M. W.; Sniady, A.; Jamison, T. F. "Continuous Flow Photocatalysis Enhanced Using an Aluminum Mirror: Rapid and Selective Synthesis of 2'-Deoxy and 2',3'-Dideoxynucleosides," *Chem. Commun.* **2012**, *48*, 7444-7446.
- Tucker, J. W.; Zhang, Y.; Jamison, T. F.; Stephenson, C. R. J. "Visible Light Photoredox Catalysis in Flow," *Angew. Chem. Int. Ed.* **2012**, *51*, 4144-4147.
- Leduc, A. B.; Jamison, T. F. "Continuous Flow Oxidation of Alcohols and Aldehydes Utilizing Bleach and Catalytic Tetrabutylammonium Bromide," *Org. Proc. Res. Dev.* **2012**, *16*, 1082-1089.

Nagy, K. D.; Shen, B.; Jamison, T. F.; Jensen, K. F. "Mixing and Dispersion in Small-Scale Flow Systems," *Org. Process Res. Dev.* **2012**, 16, 976-981.

Webb, D.; Jamison, T. F. "Diisobutylaluminum Hydride Reductions Revitalized: A Fast, Robust, and Selective Continuous Flow System for Aldehyde Synthesis," *Org. Lett.* **2012**, 14, 568-571.

## 2011

Gutierrez, A. C.; Jamison, T. F. "Continuous Photochemical Generation of Catalytically Active [CpRu]<sup>+</sup> Complexes from CpRu( $\eta^6$ -C<sub>6</sub>H<sub>6</sub>)PF<sub>6</sub>," *Org. Lett.* **2011**, 13, 6414-6417.

Matsubara, R.; Gutierrez, A. C.; Jamison, T. F. "Nickel-Catalyzed Heck-Type Reactions of Benzyl Chlorides and Simple Olefins," *J. Am. Chem. Soc.* **2011**, 133, 19020-19023.

Beaver, M. G.; Jamison, T. F. "Ni(II) Salts and Isopropanol Effect Catalytic Reductive Coupling of Epoxides and Alkynes," *Org. Lett.* **2011**, 13, 4140-4143.

Gutierrez, A. C.; Jamison, T. F. "Scalable and Robust Synthesis of CpRu(MeCN)<sub>3</sub>PF<sub>6</sub> via Continuous Flow Photochemistry," *J. Flow. Chem.* **2011**, 1, 24-27.

Palde, P. B.; Jamison, T. F. "Safe and Efficient Tetrazole Synthesis in a Continuous Flow Microreactor," *Angew. Chem. Int. Ed.* **2011**, 50, 3525-3528.

Schleicher, K. D.; Jamison, T. F. "Reductive Coupling and Cyclization of Carbon–Carbon Multiple Bonds," *Science of Synthesis*, **2011**, Section 1.11, pp 521-569.

Vilotijevic, I.; Jamison, T. F. "Biomimetic Synthesis of Polyether Natural Products via Polyepoxide Opening," (book chapter) in *Biomimetic Organic Synthesis*, **2011**: Weinheim; E. Poupon and B. Nay, Eds.; Vol 2.; Ch. 15, pp 537-590.

Matsubara, R.; Jamison, T. F. "Nickel-Catalyzed Allylic Substitution of Simple Alkenes," *Chem. Asian J.* **2011**, 6, 1860-1875.

Sniady, A.; Bedore, M. W.; Jamison, T. F. "One-Flow, Multi-Step Synthesis of Nucleosides via Brønsted Acid-Catalyzed Glycosylation," *Angew. Chem. Int. Ed.* **2011**, 50, 2155-2158.

Morten, C. J.; Byers, J. A.; Jamison, T. F. "Evidence that Epoxide-Opening Cascades Promoted by Water are Stepwise and Become Faster and More Selective After the First Cyclization," *J. Am. Chem. Soc.* **2011**, 133, 1902-1908.

Zhang, Y.; Jamison, T. F.; Patel, S. J.; Mainolfi, N. "Continuous Flow Coupling and Decarboxylation Reactions Promoted by Copper Tubing," *Org. Lett.* **2011**, 13, 280-283.

Zaborenko, N.; Bedore, M. W.; Jamison, T. F.; Jensen, K. F. "Mechanistic Investigations of Epoxide Aminolysis in Microreactors at High Temperatures and Pressures," *Org. Process Res. Dev.* **2011**, 15, 131-139.

## 2010

Webb, D.; Jamison, T. F. "Continuous Flow Multi-Step Organic Synthesis," *Chemical Science*, **2010**, 1, 675-680.

Foley, M. A.; Jamison, T. F. "Amide Bond Formation via Reversible, Carboxylic Acid-Promoted Lactone Aminolysis," *Org. Process Res. Dev.* **2010**, 14, 1177-1181.

- Matsubara, R.; Jamison, T. F. "Nickel-Catalyzed Allylation of Simple Alkenes," *J. Am. Chem. Soc.* **2010**, 132, 6880-6881.
- Vilotijevic, I.; Jamison, T. F. "Synthesis of Marine Polycyclic Polyethers via Endo-Selective Epoxide-Opening Cascades," *Mar. Drugs*, **2010**, 8, 763-809.
- Heffron, T. P.; Simpson, G. L.; Merino, E.; Jamison, T. F. "Ladder Polyether Synthesis via Epoxide-Opening Cascades Directed by a Disappearing Trimethylsilyl Group," *J. Org. Chem.* **2010**, 75, 2681-2701.
- Liu, P.; McCarren, P.; Cheong, P. H.-Y.; Jamison, T. F.; Houk, K. N. "Origins of Regioselectivity and Alkene-Directing Effects in Nickel-Catalyzed Reductive Couplings of Alkynes and Aldehydes," *J. Am. Chem. Soc.* **2010**, 132, 2050-2057.
- Bedore, M. W.; Zaborenko, N.; Jensen, K. F.; Jamison, T. F. "Aminolysis of Epoxides in a Microreactor System: A Continuous Flow Approach to Beta-Amino Alcohols," *Org. Process Res. Dev.* **2010**, 432-440.
- Kondoh, A.; Jamison, T. F. "Rhodium-Catalyzed Dehydrogenative Borylation of Cyclic Alkenes," *Chem. Commun.* **2010**, 907-909.

## 2009

- Morten, C. J.; Byers, J. A.; Van Dyke, A. R.; Vilotijevic, I.; Jamison, T. F. "The Development of *endo*-Selective Epoxide-Opening Cascades in Water," *Chem. Soc. Rev.* **2009**, 3175-3192.
- Tanuwidjaja, J.; Ng, S.-S.; Jamison, T. F. "Total Synthesis of *ent*-Dioxepandehydrothysiferol via a Bromonium-Initiated Epoxide-Opening Cascade," *J. Am. Chem. Soc.* **2009**, 131, 12084-12085.
- Morten, C. J.; Jamison, T. F. "New Synthetic Strategies for the Stereocontrolled Synthesis of Substituted 'Skipped' Diepoxides," *Tetrahedron* **2009**, 65, 6648-6655.
- Trenkle, J. D.; Jamison, T. F. "Macrocyclization via Nickel-Catalyzed, Ester-Promoted, Epoxide-Alkyne Reductive Coupling: Total Synthesis of (–)-Gloeosporone," *Angew. Chem. Int. Ed.* **2009**, 48, 5366-5368.
- Morten, C. J.; Jamison, T. F. "Water Overcomes Methyl Group Directing Effects in Epoxide-Opening Cascades," *J. Am. Chem. Soc.* **2009**, 131, 6678-6679.
- McCarren, P. R.; Liu, P.; Cheong, P. H.-Y.; Jamison, T. F.; Houk, K. N. "Mechanism and Transition State Structures for Nickel-Catalyzed Reductive Alkyne-Aldehyde Coupling Reactions," *J. Am. Chem. Soc.* **2009**, 131, 6654-6655.
- Byers, J. A.; Jamison, T. F. "On the Synergism Between H<sub>2</sub>O and a Tetrahydropyran Template in the Regioselective Cyclization of an Epoxy Alcohol," *J. Am. Chem. Soc.* **2009**, 131, 6383-6385.
- Ho, C.-Y.; Schleicher, K. D.; Jamison, T. F. "Catalytic Addition of Simple Alkenes to Carbonyl Compounds Using Group 10 Metal Catalysts," (review), *Synlett* **2009**, 20, 2565-2582.
- Vilotijevic, I.; Jamison, T. F. "Epoxide-Opening Cascades in Synthesis of Polycyclic Polyether Natural Products," (review), *Angew. Chem. Int. Ed.* **2009**, 48, 5250-5281.
- Van Dyke, A. R.; Jamison, T. F. "Template-Controlled Cyclizations and Cascades of Epoxy Alcohols: Synthesis of HIJK Rings of Gymnocin A," *Angew. Chem. Int. Ed.* **2009**, 48, 4430-4432.

Xia, J.-B.; Jamison, T. F.; You, S.-L. "Monodentate Chiral Ferrocenyl Ligands," (book chapter), in *Ferrocenyl Ligands in Asymmetric Catalysis*, in press.

## 2008

Sparling, B. A.; Simpson, G. L.; Jamison, T. F. "Strategic use of nickel(0)-catalyzed enyne-epoxide reductive coupling towards the synthesis of (–)-cyatha-3,12-diene," *Tetrahedron* **2008**, 3270-3280.

Sparling, B. A.; Moslin, R. M.; Jamison, T. F. "SmI<sub>2</sub>-Promoted Reformatsky-Type Coupling Reactions in Exceptionally Hindered Contexts," *Org. Lett.* **2008**, 10, 1291-1294.

Ng, S.-S.; Ho, C.-Y.; Schleicher, K. D.; Jamison, T. F. "Nickel-Catalyzed Coupling Reactions of Alkenes," *Pure Appl. Chem.* **2008**, 80, 929-939.

Ho, C.-Y.; Ohmiya, H.; Jamison, T. F. "Alpha Olefins as Alkenylmetal Equivalents in Catalytic Conjugate Addition Reactions," *Angew. Chem. Int. Ed.* **2008**, 47, 1893-1895.

## 2007

Moslin, R. M.; Jamison, T. F. "Total Synthesis of (+)-Acutiphycin," *J. Org. Chem.* **2007**, 73, 9736-9745.

Vilotijevic, I.; Jamison, T. F. "Epoxide-Opening Cascades Promoted by Water," *Science* **2007**, 317, 1189-1192.

- News of the Week: Service, R. F. "[Synthesis Mimics Natural Craftsmanship](#)" *Science* **2007**, 317, 1157.
- Research Highlights: "[Chemistry: A simple solution](#)" *Nature* **2007**, 449, 5.
- News and Views: Inoue, M. "[Organic chemistry: Zipper synthesis in water](#)" *Nature* **2007**, 449, 667.
- Research highlights: Goodman, C. "[Rings on the rungs](#)" *Nature Chem. Bio.* **2007**, 3, 611.
- News of the Week: Halford, B. "[When Organics Fail, Try Water](#)" *Chem. Eng. News* **2007**, 85 (36), 7.
- News: Crow, J. M. "[Toxins' synthesis secret cracked](#)" *Chemistry World* **2007**, 4 (10), August 30.

Woodin, K. S.; Jamison, T. F. "Total Synthesis of Pumiliotoxins 209F and 251D via Late-Stage, Nickel-Catalyzed Epoxide-Alkyne Reductive Cyclization," *J. Org. Chem.* **2007**, 7451-6454.

Moslin, R. M.; Moslin, K. M.; Jamison, T. F. "Regioselectivity and Enantioselectivity in Nickel-Catalysed Reductive Coupling Reactions of Alkynes," *Chem. Commun.* **2007**, 4441-4449.

Schleicher, K. D.; Jamison, T. F. "Nickel-Catalyzed Synthesis of Acrylamides from Alpha Olefins and Isocyanates," *Org. Lett.* **2007**, 9, 875-878.

Ho, C.-Y.; Jamison, T. F. "Highly Selective Coupling of Alkenes and Aldehydes Catalyzed by NHC–Ni–P(OPh)<sub>3</sub>: Synergy Between a Strong  $\sigma$ -Donor and a Strong  $\pi$ -Acceptor," *Angew. Chem. Int. Ed.* **2007**, 46, 782-785.

Van Dyke, A. R.; Miller, K. M.; Jamison, T. F. "(R)-(–)-Neomenthyldiphenylphosphine in Nickel-Catalyzed Asymmetric Reductive Coupling of Alkynes and Aldehydes: Enantioselective Synthesis of Allylic Alcohols and  $\alpha$ -Hydroxy Ketones," *Org. Synth.* **2007**, 84, 111-119.

## 2006

Moslin, R. M.; Jamison, T. F. "Highly Convergent Total Synthesis of (+)-Acutiphycin," *J. Am. Chem. Soc.* **2006**, 128, 15106-15107.

Langille, N. F.; Jamison, T. F. "Trans-Hydroalumination/Alkylation: One-Pot Synthesis of Trisubstituted Allylic Alcohols," *Org. Lett.* **2006**, 8, 3761-3764.

- Ng, S.-S.; Ho, C.-Y.; Jamison, T. F. "Nickel-Catalyzed Coupling of Alkenes, Aldehydes, and Silyl Triflates," *J. Am. Chem. Soc.* **2006**, 128, 11513-11528.
- Heffron, T. P.; Jamison, T. F. "Concerning Lewis Acid-Promoted, Directing Group-Free Epoxide Ring-Opening Cascades," *Synlett* **2006**, *Synlett Cluster on Cascade Reactions*, 2329-2333.
- Ng, S.-S.; Jamison, T. F. "Nickel-Catalyzed Coupling of Terminal Allenes, Aldehydes, and Silanes," *Tetrahedron* **2006**, 62, *Symposium-in-Print, David W. C. MacMillan Tetrahedron Young Investigator Award*, 11350-11359.
- Moslin, R. M.; Miller, K. M.; Jamison, T. F. "Directing Effects of Tethered Alkenes in Nickel-Catalyzed Coupling Reactions of 1,6-Enynes and Aldehydes," *Tetrahedron* **2006**, 62, *Symposium-in-Print, Recent Advances in Organonickel Chemistry*, 7598-7610.
- Jamison, T. F. "Recent Advances in Organonickel Chemistry," *Tetrahedron* **2006**, 62, *Symposium-in-Print, Recent Advances in Organonickel Chemistry*, 7503.
- Ho, C.-Y.; Ng, S.-S.; Jamison, T. F. "Nickel-Catalyzed, Carbonyl-Ene-Type Reactions: Selective for Alpha Olefins and More Efficient with Electron-Rich Aldehydes," *J. Am. Chem. Soc.* **2006**, 128, 5362-5363.
- Simpson, G. L.; Heffron, T. P.; Merino, E.; Jamison, T. F. "Ladder Polyether Synthesis via Epoxide-Opening Cascades Using a Disappearing Directing Group," *J. Am. Chem. Soc.* **2006**, 128, 1056-1057.
- Editor's Choice: Yeston, J. S. "A Guide to Achieving Closure," *Science* **2006**, 311, 439.
  - News of the Week: Halford, B. "Ladder Polyethers in a Snap," *Chem. Eng. News* **2006**, 84(3), January 16, 2006, p. 8.
- Moslin, R. M.; Jamison, T. F. "Mechanistic Implications of Nickel-Catalyzed Reductive Coupling of Aldehydes and Chiral 1,6-Enynes," *Org. Lett.* **2006**, 8, 455-458.
- 2005**
- Ng, S.-S.; Jamison, T. F. "Simple Alkenes as Substitutes for Organometallic Reagents: Nickel-Catalyzed, Intermolecular Coupling of Aldehydes, Silyl Triflates, and Alpha Olefins," *J. Am. Chem. Soc.* **2005**, 127, 14194-14195.
- Editor's Choice: Yeston, J. S. "The Value of a Nickel," *Science* **2005**, 309, 2139.
- Miller, K. M.; Colby, E. A.; Woodin, K. S.; Jamison, T. F. "Asymmetric Catalytic Reductive Coupling of 1,3-Enynes and Aromatic Aldehydes," *Adv. Synth. Catal.* **2005**, 347, 1533-1536.
- Colby, E. A.; Jamison, T. F. "A Comparative Analysis of the Total Syntheses of the Amphidinolide T Natural Products," *Org. Biomol. Chem.* **2005**, 3, 2675-2684.
- Miller, K. M.; Jamison, T. F. "Highly Regioselective, Catalytic Asymmetric Reductive Coupling of 1,3-Enynes and Ketones," *Org. Lett.* **2005**, 7, 3077-3080.
- Ng, S.-S.; Jamison, T. F. "Enantioselective and Regioselective Nickel-Catalyzed Multicomponent Coupling of Chiral Allenes, Aromatic Aldehydes, and Silanes," *Tetrahedron* **2005**, 61, *Symposium-in-Print, Multicomponent Reactions*, 11405-11417.
- Luanphaisarnnont, T.; Ndubaku, C. O.; Jamison, T. F. "Anti-1,2-Diols via Ni-Catalyzed Reductive Coupling of Alkynes and -Oxyaldehydes," *Org. Lett.* **2005**, 7, 2937-2940.

Ng, S.-S.; Jamison, T. F. "Highly Enantioselective and Regioselective Nickel-Catalyzed Coupling of Allenes, Aldehydes, and Silanes," *J. Am. Chem. Soc.* **2005**, *127*, 7230-7231.

O'Brien, K. C.; Colby, E. A.; Jamison, T. F. "Synthesis of C13-C22 of Amphidinolide T2 via Nickel-Catalyzed Reductive Coupling of an Alkyne and a Terminal Epoxide," *Tetrahedron* **2005**, *61*, *Symposium-in-Print, Applications of Catalysis in Industry and Academia*, 6243-6248.

Colby, E. A.; O'Brien, K. C.; Jamison, T. F. "Total Syntheses of Amphidinolide T1 and T4 via Catalytic, Stereoselective Reductive Macrocyclizations," *J. Am. Chem. Soc.* **2005**, *127*, 4297-4307.

Molinaro, C.; Jamison, T. F. "Catalytic Reductive Coupling of Epoxides and Aldehydes: Epoxide Ring Opening Precedes Carbonyl Reduction," *Angew. Chem., Int. Ed.* **2005**, *44*, 129-132.

## 2004

Miller, K. M.; Jamison, T. F. "Ligand-Switchable Directing Effects of Tethered Alkenes in Nickel-Catalyzed Additions to Alkynes," *J. Am. Chem. Soc.* **2004**, *126*, 15342-15343.

Chan, J.; Jamison, T. F. "Enantioselective Synthesis of (–)-Terpestacin and Structural Revision of Siccanol Using Catalytic Stereoselective Fragment Couplings and Macrocyclizations," *J. Am. Chem. Soc.* **2004**, *126*, 10682-10691.

Patel, S. J.; Jamison, T. F. "Asymmetric Catalytic Coupling of Organoboranes, Alkynes, and Imines Possessing a Removable (Trialkylsilyloxy)ethyl Group - Direct Access to Enantiomerically Pure Primary Allylic Amines," *Angew. Chem. Int. Ed.* **2004**, *43*, 3941-3944.

Miller, K. M.; Luanphaisarnnont, T.; Molinaro, C.; Jamison, T. F. "Alkene-Directed, Nickel-Catalyzed Coupling Reactions of Alkynes," *J. Am. Chem. Soc.* **2004**, *126*, 4130-4131.

Colby, E. A.; O'Brien, K. C.; Jamison, T. F. "Synthesis of Amphidinolide T1 via Catalytic, Stereoselective Macrocyclization," *J. Am. Chem. Soc.* **2004**, *126*, 998-999.

## 2003

Chan, J.; Jamison, T. F. "Synthesis of (–)-Terpestacin via Catalytic, Stereoselective Fragment Coupling: Siccanol is Terpestacin, not 11-*epi*-Terpestacin," *J. Am. Chem. Soc.* **2003**, *125*, 11514-11515.

Miller, K. M.; Molinaro, C.; Jamison, T. F. "Catalytic Reductive Carbon-Carbon Bond-Forming Reactions of Alkynes," *Tetrahedron: Asym.* **2003**, *14*, invited contribution to special issue: "Asymmetric Syntheses on a Process Scale," 3619-3625.

Molinaro, C.; Jamison, T. F. "Nickel-Catalyzed Reductive Coupling of Alkynes and Epoxides," *J. Am. Chem. Soc.* **2003**, *125*, 8076-8077.

Heffron, T. P.; Jamison, T. F. "SiMe<sub>3</sub>-Based Homologation–Epoxidation–Cyclization Strategy for Ladder THP Synthesis," *Org. Lett.* **2003**, *5*, 2339-2442.

Heffron, T. P.; Trenkle, J. D.; Jamison, T. F. "Synthesis of Skipped Enynes via Phosphine-Promoted Coupling Reactions of Propargylcopper Reagents," *Tetrahedron* **2003**, *59*, *Symposium-In-Print, New Synthetic Methods VII*, 8913-8917.

Miller, K. M.; Huang, W.-S.; Jamison, T. F. "Catalytic Asymmetric Reductive Coupling of Alkynes and Aldehydes: Enantioselective Synthesis of Allylic Alcohols and –Hydroxy Ketones," *J. Am. Chem. Soc.* **2003**, *125*, 3442-3443.

- Patel, S. J.; Jamison, T. F. "Catalytic Three-Component Coupling of Alkynes, Imines, and Organoboron Reagents," *Angew. Chem. Int. Ed.* **2003**, 42, 1364-1367.
- Colby, E. A.; Jamison, T. F. "*P*-Chiral, Monodentate Ferrocenyl Phosphines, Novel Ligands for Asymmetric Catalysis," *J. Org. Chem.* **2003**, 68, 156-166.

#### **2002 and earlier**

- Skaggs, A. J.; Lin, E. Y.; Jamison, T. F. "Cobalt Cluster-Containing Carbonyl Ylides for Catalytic, Three-Component Assembly of Oxygen Heterocycles," *Org. Lett.* **2002**, 4, 2277-2280.
- Huang, W.-S.; Chan, J.; Jamison, T. F. "Highly Selective Catalytic Intermolecular Reductive Coupling of Alkynes and Aldehydes," *Org. Lett.* **2000**, 2, 4221-4223.

#### ***With Eric N. Jacobsen***

- Thompson, C. F.; Jamison, T. F.; Jacobsen, E. N. "FR901464: Total Synthesis, Proof of Structure, and Evaluation of Synthetic Analogs," *J. Am. Chem. Soc.* **2001**, 123, 9974-9983.
- Thompson, C. F.; Jamison, T. F.; Jacobsen, E. N. "Total Synthesis of FR901464. Convergent Assembly of Chiral Components Prepared by Asymmetric Catalysis," *J. Am. Chem. Soc.* **2000**, 122, 10482-10483.
- Dossetter, A. G.; Jamison, T. F.; Jacobsen, E. N. "Highly Enantio- and Diastereoselective Hetero-Diels-Alder Reactions Catalyzed by New Chiral Tridentate Chromium(III) Catalysts," *Angew. Chem.* **1999**, 38, 2398-2400.
- Francis, M. B.; Jamison, T. F.; Jacobsen, E. N. "Combinatorial Libraries of Transition Metal Complexes, Catalysts, and Materials," *Curr. Op. Chemical Biol.* **1998**, 2, 422-428.

#### ***With Stuart L. Schreiber***

- Jamison, T. F.; Shambayati, S.; Crowe, W. E.; Schreiber, S. L. "Tandem Use of Cobalt-Mediated Reactions to Synthesize (+)-Epoxydictymene, a Diterpene Containing a *Trans*-Fused 5-5 Ring System," *J. Am. Chem. Soc.* **1997**, 119, 4353-4363.
- Hung, D. T.; Jamison, T. F.; Schreiber, S. L. "Understanding and Controlling the Cell Cycle with Natural Products," *Chem. and Biol.* **1996**, 3, 623-639.
- Jamison, T. F.; Shambayati, S.; Crowe, W. E.; Schreiber, S. L. "Cobalt-Mediated Total Synthesis of (+)-Epoxydictymene," *J. Am. Chem. Soc.* **1994**, 116, 5505-5506.

#### ***With Henry Rapoport***

- Jamison, T. F. and Rapoport, H. "(*S*)-N-(9-Phenylfluoren-9-yl)alanine and (*S*)-Dimethyl N-(9-Phenylfluoren-9-yl)aspartate," *Org. Synth.* **1992**, 71, 226-235.

Jamison, T. F.; Lubell, W. D.; Dener, J. M.; Krisché, M. J.; Rapoport, H. "9-Bromo-9-phenylfluorene," *Org. Synth.* **1992**, 71, 220-225.

Lubell, W. D.; Jamison, T. F.; Rapoport, H. "PhFI-amino Ketones and PhFI-amino Aldehydes as Chiral Educds for the Synthesis of Optically Pure 4-Alkyl-3-hydroxy-2-amino Acids. Synthesis of the C-9 Amino Acid MeBmt Present in Cyclosporin," *J. Org. Chem.* **1990**, 55, 3511-3522.

### Patents and Patent Applications:

Jensen, K.F.; Jamison; T.F.; Myerson, A.S.; Monbaliu, J-C. M.; Behnam, M.; Wong, S.Y.; Weeranoppanant, N.; Revalor, E. M.; Stelzer, T.; Chen, J.; Adamo, A.; Snead, D. R.; Zhang, P.; "Reconfigurable Multi-Step Chemical Synthesis System and Related Components and Methods" **2021**, U.S. Patent No. 11,185,839. November 30, 2021

Jensen, K. F.; Jamison, T. F.; Myerson, A. S.; Monbaliu, J-C. M.; Behnam, M.; Wong, S. Y.; Weeranoppanant, N.; Revalor, E. M.; Stelzer, T.; Chen, J.; Adamo, A.; Snead, D. R.; Zhang, P.; "Systems and Methods for Synthesizing Chemical Products Including Active Pharmaceutical Ingredients" **2020**, U.S. Patent Application No. 20200368710. November 26, 2020.

Jensen, K. F.; Jamison, T. F.; Myerson, A. S.; Monbaliu, J-C. M.; Behnam, M.; Wong, S. Y.; Weeranoppanant, N.; Revalor, E. M.; Stelzer, T.; Chen, J.; Adamo, A.; Snead, D. R.; Zhang, P.; "Systems and Methods for Synthesizing Chemical Products Including Active Pharmaceutical Ingredients" **2020**, U.S. Patent No. 10,780,410. September 22, 2020.

Jensen; K.F.; Jamison; T.F.; Myerson, A.S.; Monbaliu, J-C M.; Behnam, M.; Wong, S.Y.; Weeranoppanant, N.; Revalor, E. M.; Stelzer, T.; Chen, J.; Adamo, A.; Snead, D. R.; Zhang, P.; "Reconfigurable Multi-Step Chemical Synthesis System and Related Components and Methods" **2019**, U.S. Patent Application No. 20190126229. May 2, 2019

Jamison, T. F.; Standley, E. A. "Nickel Pre-Catalysts and Related Compositions and Methods" **2016**, U.S. Patent Application No. 20160376293. December 29, 2016.

Jamison, T. F.; Standley, E. A. "Nickel Pre-Catalysts and Related Compositions and Methods" **2016**, U.S. Patent No. 9,382,281. June 5, 2016.

Jamison, T. F.; Ikeuchi, Y. "Epoxidation Catalysts," **2015**, U.S. Patent No. 9,169,277. October 27, 2015

Jamison, T. F.; Standley, E. A. "Nickel Pre-Catalysts and Related Compositions and Methods" **2015**, U.S. Patent Application No. 20150141684. May 21, 2015.

Hatton, T. A.; Jamison, T. F.; Kozak, J. A.; Simeon, F.; Wu, J. "Methods and Systems for the Formation of Cyclic Carbonates," **2014**, U.S. Patent No. 8,921,580. December 30, 2014.

Bedore, M. W.; Zaborenko, N.; Jensen, K. F.; Jamison, T. F. "Continuous Flow Synthesis of Amino Alcohols Using Microreactors," **2014**, U.S. Patent No. 8,877,930. November 4, 2014.

Foley, M. A.; Jamison, T. F.; Repic, O. "Ring Opening of Lactones and Lactams", U.S. Patent No. 8,779,198. July 15, **2014**.

Jamison, T. F.; Ikeuchi, Y. "Epoxidation Catalysts," **2014**, U.S. Patent Application No. 20140155634. June 5, 2014.

Jamison, T. F.; Ikeuchi, Y. "Epoxidation Catalysts," **2014**, U.S. Patent No. 8,680,303. March 25, 2014.



Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2013**, U.S. Patent No. 8,426,592. April 23, 2013

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2013**, U.S. Patent No. 8,399,233. March 19, 2013

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2013**, U.S. Patent No. 8,362,084. January 29, 2013

Hatton, T. A.; Jamison, T. F.; Kozak, J. A.; Simeon, F.; Wu, J. "Methods and Systems for the Formation of Cyclic Carbonates," **2013**, U.S. Patent Application No. 20130310575. November 21, 2013.

Jamison, T. F.; Palde, P. B. "Use of Azides in Synthesis," **2013**, U.S. Patent Application No. 20130225819. August 29, 2013.

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2012**, U.S. Patent Application No. 20120302510, November 29, 2012

Foley, M. A.; Jamison, T. F.; Repic, O. "Ring Opening of Lactones and Lactams," **2012**, U.S. Patent Application No. 20120165555, June 28, 2012.

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2012**, U.S. Patent No. 8,329,946. December 11, 2012

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2012**, U.S. Patent No. 8,329,945. December 11, 2012

Jamison, T. F.; Ng, S.-S.; "Catalytic Reactions Involving Alkenes," **2012**, U.S. Patent No. 8,314,246. November 20, 2012

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2011**, U.S. Patent No. 7,994,362. August 9, 2011

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2011**, U.S. Patent Application No. 20110319493. December 29, 2011

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2011**, U.S. Patent Application No. 20110313045. December 22, 2011

Jamison, T. F.; Ikeuchi, Y. "Epoxidation Catalysts," **2011**, U.S. Patent Application No. 20110257415, October 20, 2011.

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2011**, U.S. Patent Application No. 20110218154. September 8, 2011

Bedore, M. W.; Zaborenko, N.; Jensen, K. F.; Jamison, T. F. "Continuous Flow Synthesis of Amino Alcohols Using Microreactors," **2011**, U.S. Patent Application No. 20110118469, May 19, 2011.

Foley, M. A.; Jamison, T. F.; Repic, O. "The Ring Opening of Lactones and Lactams," **2010**, International Patent Appl. PCT/US10/4121, August 11, 2010.

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2010**, U.S. Patent Application No. 20100137196. June 3, 2010

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2009**, U.S. Patent Application No. 20090221474. September 3, 2009

Jamison, T. F.; Ng, S.-S.; "Catalytic Reactions Involving Alkenes," **2009**, U.S. Patent Application No. 20090216025. August 27, 2009

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2007**, U.S. Patent Application No. 20070093413. April 26, 2007

Schreiber, S. L.; Standaert, R. F.; Fenteany, G.; Jamison, T. F.; "Lactacystin Analogs," **2006**, U.S. Patent Application No. 20060052424. March 9, 2006

Schreiber, S. L.; Standaert, R. F.; Fenteany, G.; Jamison, T. F.; "Lactacystin Analogs," **2005**, U.S. Patent No. 6,838,477. January 4, 2005

Schreiber, S. L.; Taunton, J.; Hassig, C.; Jamison, T. F.; "Histone Deacetylases, and Uses Related Thereto" **2004**, U.S. Patent No. 6,777,217. August 17, 2004

Schreiber, S. L.; Standaert, R. F.; Fenteany, G.; Jamison, T. F.; "Lactacystin Analogs," **2003**, U.S. Patent No. 6,645,999. November 11, 2003

Schreiber, S. L.; Standaert, R. F.; Fenteany, G.; Jamison, T. F.; "Lactacystin Analogs," **2003**, U.S. Patent Application No. 20030119887. June 26, 2003

Fenteany, G.; Jamison, T. F.; Schreiber, S. L.; Standaert, R. F.; "Lactacystin Analogs," **2002**, U.S. Patent No. 6,458,825. October 1, 2002

Jacobsen, E. N.; Schaus, S. E.; Dossetter, A. G.; Jamison, T. F.; "Asymmetric Cycloaddition Reactions" **2002**, U.S. Patent No. 6,369,223. April 9, 2002

Jacobsen, E. N.; Schaus, S. E.; Dossetter, A. G.; Jamison, T. F.; "Asymmetric Cycloaddition Reactions" **2002**, U.S. Patent Application No. 20020004602. January 10, 2002

Fenteany, G.; Jamison, T. F.; Schreiber, S. L.; Standaert, R. F.; "Lactacystin Analogs," **2002**, U.S. Patent No. 6,335,358. January 1, 2002

Fenteany, G.; Jamison, T. F.; Schreiber, S. L.; Standaert, R. F.; "Lactacystin Analogs," **2001**, U.S. Patent No. 6,214,862. April 10, 2001

Jacobsen, E. N.; Schaus, S. E.; Dossetter, A. G.; Jamison, T. F.; "Asymmetric Cycloaddition Reactions" **2001**, U.S. Patent No. 6,211,370. April 3, 2001

Fenteany, G.; Jamison, T. F.; Schreiber, S. L.; Standaert, R. F.; "Lactacystin Analogs," **2000**, U.S. Patent No. 6,147,223. November 14, 2000

Fenteany, G.; Jamison, T. F.; Schreiber, S. L.; Standaert, R. F.; "Lactacystin Analogs," **1998**, U.S. Patent No. 5,756,764. May 26, 1998