

Nicholas Dewayne Ball
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Pomona College
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Group webpage: <http://www.theballlab.com>

EDUCATION

Ph.D. Chemistry, University of Michigan–Ann Arbor (advisor: Melanie Sanford)	2011
B.A., Chemistry, Macalester College	2005

EMPLOYMENT

Pomona College	2015-present
Assistant Professor of Chemistry	
University of British Columbia	2018-19
Visiting Assistant Professor of Chemistry, (with Dr. Jennifer Love's group)	
Amherst College	2013-15
Assistant Professor of Chemistry	
California Institute of Technology	2011-12
NIH/NIGMS Postdoctoral Fellow, (Advisor: David Tirrell)	

FELLOWSHIPS AND GRANTS

Henry Dreyfus Teacher-Scholar Award (\$75,000)	2020
NIH R15 grant Awarded (R15GM134457, \$395,145)	2020-23
Hirsch Research Initiation Grant (\$5,600)	2018-20
American Chemical Society Petroleum Research Fund UNI Award (\$55,000)	2014-18
Professional Development Network Grant – Pomona College (\$2,500)	2015-16
Wig Fund Curriculum Development Grant (\$600)	2016
NSF CAREER (Reviewed, not funded)	2016
Research Corporation Cottrell Scholar Program (Reviewed, second round, not funded)	2016

HONORS AND AWARDS

Wig Distinguished Professor Award for Excellence in Teaching	2018
Ruth L. Kirschstein Postdoctoral National Research Service Award (F32)	2011 - 2014
Ruth L. Kirschstein Predoctoral National Research Service Award (F31)	2009 - 2011
Beckman Scholars Award	2003 - 2004
ACS Scholars Award	2001 - 2005

PUBLICATIONS

Peer-reviewed publications (undergraduates are underlined identified by year of graduation)

Publications with an asterisk (++) indicate co-corresponding (lead) authors

Google scholar [\[link\]](#)

Independent Career – 5 publications; 107 citations (as of 10/28/2020)

1. Mahapatra, S.; Woroch, C. P. ('19); Butler, T. W.; Carneiro, S. N. ('21); Kwan, S. C. ('20); Khasnavis, S. R. ('21); Gu, J. ('21); Dutra, J. K. ; Vetelino, B. C.; Bellenger, J.; am Ende, C. W. ++, and Ball, N. D. ++ SuFEx Activation with Ca(NTf₂)₂: A Unified Strategy to Access Sulfamides, Sulfamates and Sulfonamides from S(VI) Fluorides. *Org. Lett.* **2020**, 22, 4389-4394. [\[link\]](#)
2. Ball, N. D. "Properties and Applications of S(VI) Fluorides" in *Emerging Fluorinated Motifs. Properties, Synthesis and Applications*, Cahard, D., Ma, J.–A., Eds.; Wiley-VCH Verlag GmbH & Co: Weinheim, 2020: 621-674.
3. Lee, C.; Ball, N. D. ++; and Sammis, G. M. ++ One-Pot Fluorosulfurylation of Grignard Reagents Using Sulfuryl Fluoride. *Chem. Comm.* **2019**, 55, 14753-14756. [\[link\]](#)
4. Mukherjee, P.; Woroch, C. P. W. ('19); Cleary, L.; Rusznak, M. ('18); Franzese, R. W. ('19); Reese, M. R.; Tucker, J. W.; Humphrey, J. M. ('19); Etuk, S. M. ('20); Kwan, S. C.; am Ende, C. W. ++, and Ball, N. D. ++ Sulfonamide Synthesis via Calcium Triflimide Activation of Sulfonyl Fluorides. *Org. Lett.* **2018**, 20, 3943-3947. [\[link\]](#)
5. Tribby, A. L. ('17); Rodríguez, I. ('16); Shariffudin, S. (AC '15); Ball, N. D.; Pd-Catalyzed Conversion of Aryl Iodides to Sulfonyl Fluorides Using SO₂ Surrogate DABSO and Selectfluor. *J. Org. Chem.* **2017**, 82, 2294-2299. [\[link\]](#)
 - This work is highlighted in a virtual issue of *Organometallics* featuring undergraduate research programs [\[link\]](#)

Works in progress

Lee, C.; Cook, L.; Elisabeth, J. E. ('22); Friede, N. C. ('22); Ball, N.B. ++; Sammis, G. M. ++ The Emerging Applications of Sulfur (VI) Fluorides in Catalysis. *ACS Catal.* Invited review. Work in progress.

Am Ende, C. W.; Ball, N.B. ++ SuFEx Strategies in Chemical Biology. *Org. Biomol. Chem.* Invited review. Work in progress.

Doctoral publications – 6 publications; 1082 citations (as of 10/28/2020)

1. Racowski, J. M.; **Ball, N. D.**; Sanford, M. S. Aryl C–H Activation at Pd(IV) Centers. *J. Am. Chem. Soc.* **2011**, *133*, 18022-18025. [[link](#)]
2. **Ball, N. D.**; Gary, J. B.; Ye, Y.; Sanford, M. S. Mechanistic and Computational Studies of Oxidatively-Induced Aryl–CF₃ Bond-Formation at Pd: Rational Design of Room Temperature Aryl Trifluoromethylation. *J. Am. Chem. Soc.* **2011**, *133*, 7577-7584. [[link](#)]
3. Ye, Y.; **Ball, N. D.**; Kampf, J. W.; Sanford, M. S. Oxidation of Catalytically Relevant Palladium Dimer with “CF₃⁺: Formation and Reactivity of a Monomeric Palladium(IV) Aquo Complex. *J. Am. Chem. Soc.* **2010**, *132*, 14682-14687. [[link](#)]
4. **Ball, N. D.**; Kampf, J. W.; Sanford, M. S. Aryl C–CF₃ Bond Forming Reductive Elimination from a Palladium(IV) Complex. *J. Am. Chem. Soc.* **2010**, *132*, 2878-2879. [[link](#)]
5. **Ball, N. D.**; Kampf, J. W.; Sanford, M. S. Synthesis and Reactivity of Palladium(II) Fluoride Complexes Containing Nitrogen-Donor Ligands. *Dalton Trans.* **2010**, *39*, 632-640. [[link](#)]
6. **Ball, N. D.**; Sanford, M. S. Synthesis and Reactivity of a Mono-σ-Aryl Palladium(IV) Fluoride Complex. *J. Am. Chem. Soc.* **2009**, *131*, 3796-3797. [[link](#)]

PRESENTATIONS

Invited seminars and conference talks

+Virtual upcoming invited talks

1. **+Ball, N. D.** Synthetic Strategies toward Fluorosulfurylation of Organic Molecules and Sulfur-Fluoride Exchange. ACS LGBTQ+ Symposium. Oral Presentation. American Chemical Society National Meeting and Exposition, San Antonio, TX, March, 2021.
2. **+Ball, N.D.** Synthetic Strategies toward Fluorosulfurylation of Organic Molecules and Sulfur-Fluoride Exchange. University of North Carolina–Greensboro. November 6th, 2020.
3. **Ball, N.D.** Synthetic Strategies toward Fluorosulfurylation of Organic Molecules and Sulfur-Fluoride Exchange. University of California San Francisco. October 15th, 2020.
4. **Ball, N.D.** Synthetic Strategies toward Fluorosulfurylation of Organic Molecules and Sulfur-Fluoride Exchange. San Jose State University. September 22th, 2020.

5. **Ball, N.D.** Unlocking Fluorine: Activation of Sulfur(VI) Fluorides Toward New Sulfur-Fluorine Exchange (SuFEx) Click Reactions. Workshop on Synthetic Organic Chemistry, Steamboat Springs, CO. August 6-8, 2019. [[Link](#)]
 - One of 15 pre-tenured faculty members selected to attend this workshop out of 120 junior faculty across U.S. and Canada. I was the sole faculty member from a PUI.
6. **Ball, N.D.** Unlocking Fluorine: Activation of Sulfur(VI) Fluorides Toward New Sulfur-Fluorine Exchange (SuFEx) Click Reactions. Barnard College. April 23th, 2019.
7. **Ball, N.D.** Unlocking Fluorine: Activation of Sulfur(VI) Fluorides Toward New Sulfur-Fluorine Exchange (SuFEx) Click Reactions. Santa Clara University. April 11th, 2019.
8. **Ball, N.D.** Unlocking Fluorine: Activation of Sulfur(VI) Fluorides Toward New Sulfur-Fluorine Exchange (SuFEx) Click Reactions. Denison University. November 6th, 2018.
9. **Ball, N.D.** Unlocking Fluorine: Activation of Sulfur(VI) Fluorides Toward New Sulfur-Fluorine Exchange (SuFEx) Click Reactions. University of British Columbia. October 18th, 2018.
10. **Ball, N.D.** Lewis Acid Mediated Activation of Aryl and Alkyl Sulfonyl Fluorides Toward Sulfonamides. Macalester College. September 26th, 2018.
11. **Ball, N. D.;** Woroch, C. P.*; Rusznak, M.; Cleary, L., Mukherjee, P.; am Ende, C.; Reese, M. R.; Tucker, J. W.; Humphrey J. M.; Franzese*, R. W.; Etuk*, S.M.; Kwan, S. C.* Calcium Triflimide Activation of Sulfonyl Fluorides to Sulfonamides. Oral and Poster Presentation. 22nd International Symposium on Fluorine Chemistry, Oxford, UK, July 2018.
12. **Ball, N. D.;** Woroch, C. P.; Rusznak, M.; Cleary, L., Mukherjee, P.; am Ende, C.; Reese, M. R.; Tucker, J. W.; Humphrey J. M.; Franzese, R. W.; Etuk, S.M.; Kwan, S. C. Lewis Acid-Mediated Activation of Aryl and Alkyl Sulfonyl Fluoride towards Sulfonamides. Invited Oral Presentation. American Chemical Society National Meeting, New Orleans, LA, March 2018.
13. **Ball, N. D.;** Rodriguez, I; Tribby, A. L.*; Shariffudin, S.* One-Pot Pd-catalyzed Synthesis of Aromatic Sulfonyl Fluorides. Poster Presentation. Poster Presentation Japanese-American Kavli Frontiers in Science Symposium (National Academy of Sciences), Irvine, CA December 2016.
14. **Ball, N. D.;** Rodríguez, I.; Tribby, A. L.*; Shariffudin, S.* One-pot Pd-catalyzed Synthesis of Aromatic Sulfonyl Fluorides. Oral Presentation. 252nd American Chemical Society National Meeting, Philadelphia, PA, August 2016.
15. **Ball, N. D.** ACS Scholars Program Rising Stars in Academe. Oral Presentation and Panelist. 250th American Chemical Society National Meeting and Exposition, Philadelphia, PA, August 2, 2015.

OTHER PRESENTATIONS

1. **Ball, N. D.,** Woroch, C. P. Pollution to Products: Adventures in Sulfur. Oral Presentation. Pomona College Torchbearers Reception, Beverly Hills, CA, March 8, 2017.
2. **Ball, N. D.** Career Panel: Rising Stars in Academe. Panelist. Beckman Symposium, Irvine, CA, August 6, 2016.

PROFESSIONAL MEMBERSHIP AND SERVICE

Elected councilor for Council of Undergraduate Research Chemistry (CUR) 2020 - present

Member of the Network for Diversity in Chemical Research (NDCR)– a part of the NSF Center for Selective C–H functionalization (CCHF) and the Data Chemist Network (DCN) – a part of the NSF Center for Computer Assisted Synthesis (C–CAS).

2019-present

Review Panelist for NIH (NIGMS) and NSF (Chemistry) 2020

Reviewer for the following publications: 2012 - present

Journal of the American Chemical Society, Proceeding of the National Academy of Sciences, Journal of Organic Chemistry, Chemical Reviews, Chemical Science, Coordination Chemistry Reviews, Organic Letters, Journal of Chemical Education, and Accounts of Chemical Research, Beilstein Journal of Organic Chemistry

American Chemical Society 2001- present

COLLEGE SERVICE

Pomona College Admissions and Financial Aid Committee (Chair, 2020-2021) 2019-present

Pomona College Ad Hoc Committee on Promotion and Tenure 2016-

Chemistry Department Professional Development Committee 2016-18

Chemistry Department Seminar Coordinator for the 5C Chemistry Seminar Series Fall 2016-Spring 18; Fall 19 – present

Faculty advisor to the Pomona College Chemistry Department student liaisons Fall 2016-Fall 18

COURSES TAUGHTs

Inorganic Chemistry, CHEM 147 (Spring 2016-2018; Spring 2020)

Inorganic Chemistry Lab CHEM 147L (Spring 2018, Spring 2020)

Organic Chemistry I; CHEM 110a (Fall 2015-2017, Fall 2019-2020)

Organic Chemistry I Lab, CHEM 110aL (Fall 2015-2017)

Directed Reading, CHEM 199 (Fall 2019)

Independent Study; CHEM 199 (2015-2020)

Senior Experimental Thesis; CHEM 194 (2015-2020)