

Gino Occhialini

GRADUATE STUDENT · MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Education

Massachusetts Institute of Technology (MIT)

Ph.D. Chemistry (GPA: 5.00/5.00)

Advisor: Alison Wendlandt

NSF Graduate Research Fellow

Cambridge, MA

Aug. 2018 - Present

University of Texas at Dallas (UTD)

B.S. Chemistry (GPA: 4.00/4.00)

Graduation Honors: Major Honors with Distinction, Summa Cum Laude

Richardson, TX

Aug. 2014 - May 2018

Research Experience

Research Assistant

Wendlandt Lab, Department of Chemistry, MIT

Development of light-driven stereo- and positional editing tools

- Internal to terminal positional olefin isomerization
- Pyranoside stereoediting + mechanistic studies
- Terminal selective acceptorless dehydrogenation

Cambridge, MA

Aug. 2018 - present

Undergraduate Research Assistant

Smaldone Lab, Department of Chemistry, UTD

Synthesis and characterization of novel covalent organic frameworks

- Understanding the role of monomer electronics and planarity on COF formation
- Novel COF topologies to enhance gas adsorption properties

Richardson, TX

July 2015 - Aug. 2018

Summer Undergraduate Research Fellow

Sieglwart Lab, Simmons Cancer Center, UTSW

Synthesis and characterization of turn-on fluorescent probes for cancer diagnosis and imaging.

Dallas, TX

Summer 2016

Honors & Fellowships

2020 **National Science Foundation Graduate Research Fellow**, NSF

2020 **Strem Family Fellowship**, MIT Chemistry

2019 **Outstanding Teaching Award**, MIT Chemistry

2019 **Kenneth M. Gordon Fellowship**, MIT Chemistry

2018 **John P. Ferraris Research Excellence Award**, UTD Chemistry

2018 **Hertz Fellowship Semifinalist**, Hertz Foundation

2018 **Patty Henry Pinch Scholarship**, UTD

2018 **Outstanding Undergraduate TA**, UTD School of Natural Sciences and Mathematics

2017 **Goldwater Scholarship**, Goldwater Foundation

2017 **Outstanding Undergraduate Student**, ACS DFW

2017 **Cyrus Cantrell III Grant**, UTD Phi Kappa Phi

2016 **Undergraduate Research Scholar Award**, UTD

2014 **Academic Excellence Scholarship**, UTD

2014 **Collegium V Honors Program**, UTD

Skills

Programming python, julia, bash, linux operating system

Spectroscopy NMR, MassSpec, FTIR, HPLC, transient absorption, UV-Vis, polarimetry, X-ray crystallography

Synthesis organic and organometallic synthesis, moisture and air sensitive reactions

Purification normal and reverse Phase column and HPLC purification

Mechanism chemical kinetics, calorimetry, reactIR, isotope effects, and linear free energy studies

Computation density functional theory, transition state theory, molecular dynamics

Safety safe handling of pyrophoric, reactive, and toxic reagents

Teaching Experience

Massachusetts Institute of Technology

Cambridge, MA

Teaching Assistant - Organic Chemistry I (5.12)

Aug. 2018 - May 2019

Head teaching assistant (Spring 2019) for team of 9 graduate student TAs

University of Texas at Dallas

Richardson, TX

Teaching Assistant - Honors Organic Chemistry I & II (CHEM2327, CHEM2328)

Aug. 2015 - May. 2018

Teaching Assistant - Anatomy & Physiology I (BIOL3455)

Jan. 2016 - Dec. 2016

Teaching Assistant - Biochemistry I (BIOL3361)

Aug. 2015 - May. 2016

Selected Peer-Reviewed Publications

† indicates equal contribution

Carder, H. M.†; **Occhialini, G.†**; Bistoni, G.; Riplinger, C.; Kwan, E. E.; Wendlandt, A. E. Emergent selectivity in complex stereoarrays. *manuscript in review (Science)*

Gu, X.†; Zhang, Y.-A.†; Wang, L.; Ye, X.; **Occhialini, G.**; Barbour, J.; Pentelute, B. L.; Wendlandt, A. E. Synthesis of Non-Canonical Amino Acids through Dehydrogenative Tailoring. *manuscript in review (Nature)*

Occhialini, G.; Palani, V.; Wendlandt, A. E. Catalytic, contra-thermodynamic positional alkene isomerization. *J. Am. Chem. Soc.* **2022**, 144, 145-152.

Thompson, C. M. †; **Occhialini, G.†**; McCandless, G. T.; Alahakoon, S. B.; Cameron, V.; Nielsen, S. O.; Smaldone, R. A. Computational and Experimental Studies on the Effects of Monomer Planarity on Covalent Organic Framework Formation. *J. Am. Chem. Soc.* **2017**, 139, 10506-10513.

Alahakoon, S. B.†; **Occhialini, G.†**; McCandless, G. T.; Karunathilake, A. A. K.; Nielsen, S. O.; Smaldone, R. A. Experimental and theoretical insight into the effect of fluorine substituents on the properties of azine linked covalent organic frameworks. *CrystEngComm* **2017**, 19, 4882-4885.

Xiong, H.; Zuo, H.; Yan, Y.; **Occhialini, G.**; Zhou, K.; Wan, Y.; Siegwart, D. J. High-contrast fluorescence detection of metastatic breast cancer including bone and liver micrometastases via size-controlled pH-activatable water-soluble probes. *Adv. Mat.* **2017**, 29, 1700131.

Alahakoon, S. B.; Thompson, C. M.; **Occhialini, G.**; Smaldone, R. A. Design principles for covalent organic frameworks in energy storage applications. *ChemSusChem* **2017**, 10, 2116-2129

Alahakoon, S. B.; Thompson, C. M.; Nguyen, A. X.; **Occhialini, G.**; McCandless, G. T.; Smaldone, R. A. An azine-linked hexaphenylbenzene based covalent organic framework. *Chem. Comm.* **2016**, 52, 2843-2845