Isaac Garcia-Bosch
Harold A. Jeskey Endowed Chair in Chemistry - Southern Methodist University
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September 2020

A. Professional positions

Southern Methodist University, Dallas, TX
Assistant Professor 2015 - current
University of Girona, Catalonia (Spain)
Teaching assistant (Lecturer) in Physical Chemistry 2006

B. Education and training

Johns Hopkins University, Baltimore, MD 2012 - 2015
Postdoctoral research associate
Marie Curie Fellow (IOF 2012), Advisor: Prof. Kenneth D. Karlin
University of Girona, Catalonia (Spain) 2006 - 2011
Ph.D. in Inorganic Chemistry (European Certification, highest distinction *Cum Laude*
FPI fellow, Advisors: Prof. Miquel Costas and Prof. Xavi Ribas
University of Girona, Catalonia (Spain) 2002 - 2006
B. S. in Chemistry

C. Awards and honors

Southern Methodist University
Research grant from NIH (NIH ESI MIRA, Grant R35GM137914: $1.653,655) 2020
Research grant from NSF (NSF Career, Grant N1941220: $624.998) 2020
Research grant from The Robert A. Welch Foundation (Grant N-1900-20190330: $195.000) 2019
Research grant from NIH (R15GM128078: $415,111) 2018
Thieme Chemistry Journal Awardee 2017 2017
Research grant from The Robert A. Welch Foundation (Grant N-1900: $195.000) 2016

Johns Hopkins University
Postdoctoral Fellowship Marie Curie IOF 2012 from European Research Area 2012

University of Girona
Best Ph.D. dissertation of the University of Girona 2011
Outgoing fellowship for a short stay at the University of Groningen 2010
Outgoing fellowship for a short stay at Johns Hopkins University 2009
Ph.D. Fellowship Award (FPI) from Spanish Ministry 2007

D. Publications

D.1 SMU publications (underlined = undergraduate author; * = corresponding author).

34. Wu, T.; MacMillan, S. N.; Rajabimoghadam, K.; Siegler, M. A.; Lancaster, K. M.*; and Garcia-Bosch, I.* "Structure, spectroscopy and reactivity of a mononuclear copper hydroxide complex in three molecular oxidation states". *J. Am. Chem. Soc.,* **2020**, *142*, 12265-12276.
33. Rajabimoghadam, K.; Darwish Y.; Bashir U.; Pitman, D.; Eichelberger S.; Siegler, M. A.; and Garcia-Bosch, I*. "Tunable intramolecular multicenter H-bonding interactions in first-row metal complexes bearing bidentate redox-active ligands". *J. Coord. Chem.* **2019***,* 1335.
32. Trammell, R.; D'Amore, L; Cordova, A.; Polunin P.; Xie, N.; Siegler, M. A.; Belanzoni, P.; Marcel Swart, M.*; and Garcia-Bosch, I.* "Copper-Directed Hydroxylation of sp^2 and sp^3 C-H Bonds". *Inorg. Chem.* **2019***, 58,* 7584*.*
31. Trammell, R.; Rajabimoghadam, K.; and Garcia-Bosch, I.* "Copper-Promoted Functionalization of Organic Molecules: from Biologically Relevant Cu/O_2 Model Systems to Organometallic Transformations". *Chem. Rev.*, **2019**, *119,* 2954.

30. Rajabimoghadam, K.; Darwish Y.; Bashir U.; Pitman, D.; Eichelberger S.; Siegler, M. A.; Swart, M.*; and Garcia-Bosch, I.* "Catalytic Aerobic Oxidation of Alcohols by Copper Complexes Bearing Redox-Active Ligands with Tunable H-Bonding Groups". *J. Am. Chem. Soc.,* **2018,** *140*, 16625.
29. Trammell, R.; See, Y. Y.; Herrmann, A. T.; Xie, N.; Díaz, D. E.; Siegler, M. A.; Baran, P. S.; Garcia-Bosch, I.* "Decoding the Mechanism of Intramolecular Cu-Directed Hydroxylation of sp^3 C–H Bonds". *J. Org. Chem.* **2017**, *82*, 7887.
28. Garcia-Bosch, I.*, "Copper-Catalyzed Oxidation of Alkanes under Mild Conditions". *Synlett*, **2017**, *28,* 1237. (Synpacts Article).
27. Garcia-Bosch, I.*, Cowley, R. E.; Díaz, D. E.: Peterson, R. L.: Solomon, E. I.*; and Karlin, K. D.* "Substrate and Lewis Acid Coordination Promote O–O Bond Cleavage of an Unreactive $L_2Cu^{II}_2(O_2^{2-})$ Species to Form $L_2Cu^{III}_2(O)_2$ Cores with Enhanced Oxidative Reactivity." *J. Am. Chem. Soc.*, **2017**, *139*, 3186. *Note: I.G.-B. affiliated with SMU.*
26. Adam, S. M.; Garcia-Bosch, I., Schaefer A. W.; Sharma, S. K.; Siegler, M. A., Solomon, E. I.*; and Karlin, K. D.* "Critical Aspects of Heme–Peroxo–Cu Complex Structure and Nature of Proton Source Dictate Metal–Operoxo Breakage versus Reductive O–O Cleavage Chemistry." *J. Am. Chem. Soc.*, **2017,** *139*, 472. *Note: I.G.-B. affiliated with SMU.*
25. Garcia-Bosch, I.*; Siegler, M. A. "Copper-Catalyzed Oxidation of Alkanes with H_2O_2 under a Fenton-like Regime". *Angew. Chem. Int. Ed.,* **2016,** *55***,** 12873.
24. Garcia-Bosch, I.*; Cowley, R. E.; Díaz, D. E.; Siegler, M. A.; Nam, W.; Solomon, E. I.*; and Karlin, K.D.* "Dioxygen Activation by a Macrocyclic Copper Complex Leads to a Cu_2O_2 Core with Unexpected Structure and Reactivity". *Chem. Eur. J.*, **2016**, *22*, 5133. *Note: I.G.-B. affiliated with SMU.*
23. Hematian, S.; Garcia-Bosch, I.; and Karlin, K. D.* "Synthetic Heme/Copper Assemblies: Toward an Understanding of Cytochrome c Oxidase Interactions with Dioxygen and Nitrogen Oxides" *Acc. Chem. Res.,* **2015**, *48*, 2462. *Special issue "Synthesis in Biological Inorganic Chemistry". Note: I.G.-B. affiliated with SMU.*
22. Serrano-Plana, J.; Garcia-Bosch, I.; Company, A.*; and Costas, M.* "Structural and Reactivity Models for Copper Oxygenases: Cooperative Effects and Novel Reactivities". *Acc. Chem. Res.,* **2015**, *48*, 2397. *Special issue "Synthesis in Biological Inorganic Chemistry". Note: I.G.-B. affiliated with SMU.*

D.2 Postdoctoral research:

21. Garcia-Bosch, I.; Adam, S. M.; Schaefer, A. W.; Sharma, S. K.; Peterson, R. L.; Solomon, E. I.*; Karlin, K. D.* A **"**Naked**"** Fe^{III}-(O_2^{2-})-Cu^{II} Species Allows for Structural and Spectroscopic Tuning of Low-Spin Heme-Peroxo-Cu Complexes *J. Am. Chem. Soc.* **2015**, *137*, 1032.
20. Serrano-Plana, J.; Garcia-Bosch, I.; Miyake, R.; Costas, M.* and Company, A.* "Selective Ortho-Hydroxylation–Defluorination of 2-Fluorophenolates with a Bis(μ-oxo)dicopper(III) Species". *Angew. Chem. Int. Ed*., **2014**, *53*, 9608.
19. Lee, J. Y.; Peterson, R. L.; Ohkubo, K.; Garcia-Bosch, I.; Himes, R. A.; Woertink, J.; Moore, C. D.; Solomon, E. I.*; Fukuzumi, S.*; and Karlin, K. D.* "Mechanistic Insights into the Oxidation of Substituted Phenols via Hydrogen Atom Abstraction by a Cupric-Superoxo Complex". *J. Am. Chem. Soc.,* **2014**, *136*, 9925.
18. Lentini S.; Galloni, P.; Garcia-Bosch, I.; Costas, M.*; and Conte, V.* "Ionic liquids as reaction media in catalytic oxidations with manganese and iron pyridyl triazacyclononane complexes". *Inorg. Chim. Acta,* **2014***, 410,* 60.
17. Cussó, O.; Garcia-Bosch, I.; Font, D.; Ribas, X.*; Lloret-Fillol, J.*; and Costas, M.* "Highly Stereoselective Epoxidation with H_2O_2 Catalyzed by Electron-Rich Aminopyridine Manganese Catalysts" *Org. Lett.,* **2013**, *15*, 6158.
16. Garcia-Bosch, I.; Sharma, S. K.; and Karlin, K. D.* "A Selective Stepwise Heme Oxygenase Model System: An Iron(IV)-Oxo Porphyrin π-Cation Radical Leads to a Verdoheme-Type Compound via an Isoporphyrin Intermediate". *J. Am. Chem. Soc.,* **2013**, *135*, 16248.
15. Cussó, O.; Garcia-Bosch, I.; Ribas, X.; Lloret-Fillol, J.; and Costas, M.* "Asymmetric Epoxidation with H_2O_2 by Manipulating the Electronic Properties of Non-heme Iron Catalysts". *J. Am. Chem. Soc.,* **2013**, *135*, 14871-14878. *This article was referenced as a Highlight in SYNFACTS, **2014**, 292.*
14. Codolà, Z.; Garcia-Bosch, I.; Acuña-Parés, F.; Prat, I.; Luis, J. M.; Costas, M.* and Lloret-Fillol, J.* "Electronic Effects on Single-Site Iron Catalysts for Water Oxidation". *Chem. Eur. J.,* **2013**, *19*, 8042.
13. García-Simón, C.; Garcia-Borràs, M.; Gómez, L.; Garcia-Bosch, I.; Osuna, S.; Swart, M.; Luis, J. M.; Rovira, C.; Almeida, M.; Imaz, I.; Maspoch, D.; Costas, M.*; and Ribas, X*. "Self-Assembled Tetragonal Prismatic Molecular Cage Highly Selective for Anionic π Guests" *Chem. Eur. J.,* **2013**, *19,* 1445.

12. Garcia-Bosch I.; Codolà Z.; Prat I.; Ribas X.; Lloret-Fillol J.*; and Costas M.* "Iron-Catalyzed C-H Hydroxylation and Olefin *cis*-Dihydroxylation Using a Single-Electron Oxidant and Water as the Oxygen-Atom Source." *Chem. Eur. J.,* **2012**, *18*, 13269.

D.3 PhD research:

11. Garcia-Bosch, I., Ribas, X.* and Costas, M.* "Electrophilic Arene Hydroxylation and Phenol O-H Oxidations Performed by an Unsymmetric μ-η^1:η^1-O_2-Peroxo-Dicopper(II) Complex." *Chem. Eur. J.,* **2012,** *18,* 2113.
10. Garcia-Bosch, I.; Gómez, L.; Polo, A.; Ribas, X.* and Costas, M.* "Stereoselective Epoxidation of Alkenes with H_2O_2 Using Bipyrrolidine-Based Family of Manganese Complexes". *Adv. Synth. Catal.* **2012**, *354,* 65.
9. Garcia-Bosch I.; Ribas X.*; and Costas M.* **"**Well-Defined Heterometallic and Unsymmetric M_2O_2 Complexes Arising from Binding and Activation of O_2" *Eur. J. Inorg. Chem.* **2012**, 179.
8. Lloret, F.*; Codolà, Z.; Garcia-Bosch, I.; Gómez, L.; Pla, J. and Costas, M.* "Efficient Water Oxidation Catalyst Based on Readily Available Iron Coordination Complexes". *Nat. Chem.* **2011**, *3*, 807.
7. Garcia-Bosch, I.; Company, A.; Cady, C. W.; Styring, S.; Browne, W. R.; Ribas, X.; Costas, M.* "Evidence for a Precursor Complex in C-H Hydrogen Atom Transfer Reactions Mediated by a Manganese(IV) Oxo Complex". *Angew. Chem. Int. Ed.* **2011**, *50*, 5648. *Selected as VIP Paper.*
6. Garcia-Bosch, I.**;** Company, A.**;** Frisch, J. R.; Cardellach, M; Solà, M.; Gamba, I.; Casella, L.*; Que, L. Jr.***;** Ribas, X.* Luis, J. M.* and Costas, M.* "O_2 Activation and Selective Phenolate ortho-Hydroxylation by an Asymmetric Dicopper μ-η^1:η^1-peroxido Complex". *Angew. Chem. Int. Ed.* **2010**, 49, 2406. *Selected as HOT paper.*
5. Gomez, L.; Garcia-Bosch, I.; Company, A.; Benet-Buchholz, J.; Polo, A.; Sala, X.; Ribas, X.*; Costas, M.* "Stereospecific C-H Oxidation with H_2O_2 Catalyzed by a Chemically Robust Site Isolated Iron Catalyst". *Angew. Chem. Int. Ed.* **2009**, 48, 5720.
4. Garcia-Bosch, I.; Ribas, X.* and Costas, M.* "A Broad Substrate-Scope Method for Fast, Efficient and Selective H_2O_2-Epoxidation". *Adv. Synth. Catal.* **2009**, *351*, 348*. This article was featured in the Organic Chemistry Portal.*
3. Garcia-Bosch, I.**;** Company, A.**;** Fontrodona, X.**;** Ribas, X.* and Costas, M.* "Efficient and Selective Peracetic Acid Epoxidation Catalyzed by a Robust Manganese Complex". *Org. Lett.* **2008**, *10,* 2095. *Article referenced as a Highlight in SYNFACTS **2008**, 0866 and featured in the Organic Chemistry Portal.*
2. Company, A.; Palavicini, S.; Garcia-Bosch, I.; Mas-Ballesté, R.; Que, L. Jr.*; Rybak-Akimova, E. V.*; Casella, L.*; Ribas, X. and Costas, M.* "Tyrosinase-Like Reactivity in a $Cu^{III}_2(\mu\text{-}O)_2$ Species". *Chem. Eur. J.*; **2008**, *14*, 3535.
1. Gómez, L., Garcia-Bosch, I.; Company, A.; Sala, X.; Fontrodona, X.; Ribas, X.; and Costas, M.* "Chiral manganese complexes with pinene appended tetradentate ligands as stereoseletive epoxidation catalysts". *Dalton Trans.*; **2007**; 5539.

D.4 Book chapters:

2. Garcia-Bosch, I.; Karlin, K. In *The Chemistry of Peroxides: Copper peroxide bioinorganic chemistry: From metalloenzymes to bioinspired synthetic systems*; Liebman, A. G. a. J. F., Ed.; John Wiley & Sons, Ltd: Chichester, UK, **2014**; Vol. 3, 805.
1. Garcia-Bosch I.; Prat, I.; Ribas, X.; and Costas, M. "Bioinspired Oxidations Catalyzed by Nonheme Iron and Manganese Complexes". In *Innovative Catalysis in Organic Synthesis: Oxidation, Hydrogenation, and C-X Bond Forming Reactions.* Ed. by Pher G. Andersson. Wiley-VCH Verlag GmbH&Co. KGaA. **2012**, 27.

D.5 Patents

3. Company, A.; Font, D.; Prat, I.; Gómez, L.; Ribas, X.; Garcia-Bosch, I.; Costas, M.; Lloret-Fillol, J.; and Cussó, O. Title: "Catalysts for the epoxidation of alkenes". Spain Application Nº ES 2012-31746. Date of priority: 13th November **2012**.
2. Codolà, Z.; Gómez, L.; Garcia-Bosch, I.; Pla Aicart, J. J.; Lloret, J.; and Costas, M. Title: "Procedure for the catalytic oxidation of water with iron catalysts". Spain Application Nº ES 2011-31147. Date of priority: 6th July **2011**.
1. Costas, M.; Ribas, X.; Garcia-Bosch, I.; Company, A.; and Gómez, L. Title: "Manganese catalysts and their use for the selective epoxidation of olefins". Spain. Nº ES 2008-1081. Date: 10th April **2008**.

E. Invited lectures as a PI

23. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Temple University**, Philadelphia (PA), virtual meeting **September 2020**. Host: Dr. Ann Valentine.
22. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Texas A&M**, College Station (TX), virtual meeting **May 2020**. Host: Dr. David Powers
21. Garcia-Bosch, I.; *"Copper complexes bearing tridentate redox-active ligands with tunable H-bonding donors: reactivity of mononuclear CuOH cores in multiple oxidation states."* **ACS National Meeting 2020**. Philadelphia (PA), **March 2020**. Invited seminar in Creative Advances in Synthetic & Biological Coordination Chemistry.
20. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Auburn University**, Auburn (AL), **January 2020**. Host: Dr. Byron Farnum
19. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Georgetown University,** Washington D.C., **November 2019**. Host: Dr. Timothy Warren
18. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **University of Delaware,** Newark (DE), **November 2019**. Host: Dr. Joel Rosenthal
17. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Johns Hopkins University** (MD), **November 2019**. Host: Dr. Kenneth Karlin
16. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **NC State University (**NC), **September 2019**. Dr. Reza Ghiladi
15. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **Duke University** (NC), **September 2019**. Host: Dr. Katherine Franz
14. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **University of Memphis**, Memphis (TN), **September 2019**. Host: Dr. Kensha Clark
13. Garcia-Bosch, I.; *"Copper-promoted functionalization of organic molecules: structure, spectroscopy and mechanism".* **University of Mississippi**, Oxford (MS), **September 2019**. Host: Dr. Jonah Jurss
12. Garcia-Bosch, I.; *"Copper complexes bearing redox active ligands with tunable H-bonding interactions: Synthesis, structure, and reactivity".* **ACS National Meeting 2019**. San Diego (CA), **August 2019**. Invited seminar in "*Emerging Research in Molecular Synthesis and Catalysis".*
11. Garcia-Bosch, I.; *"Cu-promoted hydroxylation of sp2 and sp3 C–H bonds: From enzyme modeling to synthetic applications".* **ACS National Meeting 2019**. San Diego (CA), **August 2019**. Invited seminar in "*Learning from Nature: Earth-Abundant Metals for Oxidation Catalysis*".
10. Garcia-Bosch, I.; *"Copper complexes bearing redox active ligands with tunable H-bonding donors".* **ICIQ**, Tarragona (Catalonia), **July 2019**. Host: Dr. Julio Lloret
9. Garcia-Bosch, I.; *"Cu-promoted oxygenation and oxidation reactivity and its applications to green organic synthesis".* **University of Girona** (Catalonia), **June 2019**. Host: Dr. Miquel Costas
8. Garcia-Bosch, I.; *"Cu-promoted hydroxylation of strong C-H bonds".* **Sewanee University of the South**. Sewanee (TN), **April 2019**. Host: Dr. Evan Joslin
7. Garcia-Bosch, I.; *"Cu-promoted hydroxylation of strong C-H bonds".* **University of Alabama in Huntsville** (UAH). Huntsville (AL), **April 2019**. Host: Dr. Anusree Mukherjee
6. Garcia-Bosch, I.; *"Cu-promoted oxygenation and oxidation reactivity and its applications to green organic synthesis".* **UT Arlington**. Arlington (TX), **February 2019**. Host: Dr. Bradley S. Pierce
5. Garcia-Bosch, I.; *"Cu-promoted hydroxylation of C-H bonds".* **Texas Christian University** (TCU). Fort Worth (TX), **March 2018**. Host: Dr. Robert Neilson
4. Garcia-Bosch, I.; "*Bioinspired Cu-promoted functionalization of C-H bonds".* **University of North Texas** (UNT), Denton (TX), **November 2017**. Host: Dr. Thomas Cundari
3. Garcia-Bosch, I.; *"Development of copper catalysts for the selective oxidation of C-H and O-H bonds under mild conditions".* **Southern Methodist University** (SMU), Dallas (TX), **November 2017**.
2. Garcia-Bosch, I.; "*Development of copper catalysts for the selective oxidation of C-H bonds under mild conditions"*. **ACS National Meeting 2017**. Washington D.C., **August 2017**. Invited seminar in *Many colors of copper* symposium.
1. Garcia-Bosch, I.; "*Bioinspired Copper-Promoted Oxidation of C-H Bonds under Mild Conditions".* **Texas Women University** (TWU), Denton (TX), **February 2017**. Hosts: Dr. Nasrin Mirsaleh-Kohan and Dr. Richard Sheardy.

F. Contributed presentations (presenting author is underlined, undergraduate students marked with **):

15. Trammell, R.; Garcia-Bosch, I., "*Cu–Directed Hydroxylation with 6 Membered Intramolecular Cyclization under Benign Reaction Conditions*". ACS National Meeting & Exposition, San Diego (CA). August 2019, Oral Presentation.
14. Eichelberger, S.; Garcia-Bosch, I., "*Tunable intramolecular multicenter H-bonding interactions in first-row metal complexes*". 52nd Annual DFW ACS Meeting-in-Miniature, Denton (TX). April 2019, Oral Presentation.
13. Wu, T; Garcia-Bosch, I. "*Redox-Active Tridentate Cu Complexes with Symmetric Tunable Hydrogen Bonds*". 52nd ACS-DFW Meeting-in-Miniature. April 2019, Oral Presentation.
12. Rajabimoghadam, K.; Darwish, Y.**; Bashir, U.**; Pitman, D.**; Eichelberg, S.**; Siegler, M. A.; Swart, M.; Garcia-Bosch, I.*; "Catalytic Aerobic Oxidation of Alcohols by Copper Complexes Bearing Redox-Active Ligands with Tunable H-bonding Groups"*. ACS National Meeting 2019. Orlando (FL), April 2019. Oral presentation
11. Garcia-Bosch, I.; "*Copper complexes bearing redox-active ligands with tunable H-bonding groups"*. GRC Inorganic Reaction Mechanisms. Galveston (TX), March 2019. Poster presentation.
10. Rajabimoghadam, K.; Darwish, Y.**; Bashir, U.**; Pitman, D.**; Eichelberg, S.**; Siegler, M. A.; Swart, M.; Garcia-Bosch, I.; *"Catalytic Aerobic Oxidation of Alcohols by Copper Complexes Bearing Redox-Active Ligands with Tunable H-bonding Groups"*. ACS National Meeting 2018. Boston (MA), August 2018. Poster presentation.
9. Trammell, R.; Cordova A.**; Xie, N.**; Polunin, P.**; Garcia-Bosch, I. "*Cu –Directed Hydroxylation of sp^2 C-H Bonds*". 256th ACS National Meeting & Exposition, Boston, MA. August 2018, Poster Presentation.
8. Trammell, R.; Cordova A.**; Xie, N.**; Polunin, P.**; Garcia-Bosch, I. "*Cu – Directed Hydroxylation of sp^2 C-H Bonds*". SMU Research Day 2018, Dallas, Tx. March 2018. Poster Presentation.
7. Rajabimoghadam, K.; Darwish, Y.**; Bashir, U.**; Pitman, D.**; Eichelberg, S.**; Siegler, M. A.; Swart, M.; Garcia-Bosch, I.; *"Tunable intramolecular multicenter H-bonding interactions in first-row metal complexes bearing bidentate redox-active ligands"*. ACS DFW meeting in miniature 2018. Dallas (TX), April 2018. Oral presentation.
6. Trammell, R.; Garcia-Bosch, I. "*Cu – Directed sp^2 Oxidations Under Benign Conditions*". 51st ACS Meeting-in-Miniature, Dallas, TX. April 2018, Oral Presentation.
5. Rajabimoghadam, K.; Darwish, Y.**; Bashir, U.**; Pitman, D.**; Eichelberg, S.**; Siegler, M. A.; Swart, M.; Garcia-Bosch, I.; *"Tunable intramolecular multicenter H-bonding interactions in first-row metal complexes bearing bidentate redox-active ligands"*. Southern Methodist University Research Day Dallas (TX), March 2018. Poster presentation.
4. Garcia-Bosch, I.; *"Catalytic Aerobic Oxidation of Alcohols by Copper Complexes Bearing Redox-Active Ligands with Tunable H-bonding Groups".* GRC Metals in Biology. Ventura (CA), January 2018. Poster presentation.
3. Trammell, R.; Cordova A.**; Xie, N.**; Polunin, P.**; Garcia-Bosch, I. "*Cu – Directed Hydroxylation of sp^2 C-H Bonds*". "*Copper Directed sp^2 and sp^3 C-H Bond Oxidation in Bidentate Systems*". 254th ACS National Meeting & Exposition, Washington, D.C. August 2017. Poster Presentation.
2. Garcia-Bosch, I.; "*Copper-Catalyzed Oxidation of Alkanes with H_2O_2 Under a Fenton-like Regime"*. GRC Inorganic Reaction Mechanisms. Galveston (TX), March 2017. Poster presentation.
1. Garcia-Bosch, I.; Cowley, R.; Díaz, D. E.; Kim, S., Siegler, M. A.; Nam, W.; Solomon, E. I.; and Karlin, K. D. "*Macrocyclic rebellion: TMC Cu(I) Conformations Lead To Dicopper Peroxo Species With Unique Spectroscopic, Structural and Chemical Properties"*. ACS National Meeting 2016. San Diego (CA), March 2016. Oral presentation.

G. Funding

G.1 Current funding

1. Tittle: *"Functional Synthetic Models of Cu-dependent Monooxygenases"*
   Source: National Institutes of Health (NIH)
   Award (amount): R35GM137914-01 ($1.653,655)
   09/2020 – 08/2025 (starting September 2020)
   Role: sole PI

2. Tittle: "*CAREER: Catalysis with copper complexes bearing redox-active ligands with tunable hydrogen-bonding donors"*
   Source: National Science Foundation (NSF)
   Award (amount): Grant N-1941220 ($624.998).
   09/2020 – 08/2025 (starting September 2020)
   Role: sole PI

3. Tittle: "*C-H bond functionalization promoted by Cu complexes bearing redox-active ligands with tunable H-bonds"*
   Source: The Robert A. Welch Foundation
   Award (amount): Grant N-1900-20190330 ($195.000).
   06/2019 – 06/2022 (starting June 2019)
   Role: sole PI

4. Tittle: "*Bioinspired Copper-Promoted C-H Hydroxylations"*
   Source: National Institutes of Health (NIH)
   Award (amount): Grant R15GM128078 ($415,111).
   04/2018 – 04/2021
   Role: sole PI

G.2 Previous funding

1. Tittle: "*Efficient, sustainable and selective catalytic systems for the direct functionalization of C-H and C=C bonds based on iron-nitrenoid/imido species"*
   Source: The Robert A. Welch Foundation
   Award (amount): Grant N-1900 ($195.000).
   06/2016 – 06/2019
   Role: sole PI

G.3 Student fellowships and awards

1. Dean's Dissertation Fellowship 2020-2021
   Source: SMU
   Award (amount): fellowship to graduate student Rachel Trammell ($20.000).
   08/2020 – 05/2021
   Role: research advisor

2. Travel Award from the Division of Inorganic Chemistry (DIC)
   Source: American Chemical Societry
   Award (amount): award to graduate student Khashayar Rajabimoghadam ($450).
   08/2019
   Role: research advisor

3. Tittle: "*Understanding Cu/O_2 activation pathways"*
   Source: SMU Hamilton Scholars Program
   Award (amount): fellowship to undergraduate student Pavel Polunin ($1.500).
   08/2017 – 05/2018
   Role: research advisor

4. Tittle: "*H-bonding interactions of biologically inspired metal complexes bearing tetradentate ligands"*
   Source: SMU Engaged Learning Fellowship
   Award (amount): fellowship to undergraduate student Sidney Eichelberger ($2.000).
   08/2018 – current
   Role: research advisor

H. Students mentored

H.1 Current Graduate Students:

1.	Rachel Trammell	2016 - current
2.	Khashayar Rajabimoghadam	2017 - current
3.	Tong Wu	2018 - current
4.	Shuming Zhang	2019 - current
5.	Ankita Puri	2020 - current
6.	David Hebert	2020 - current
7.	Sunipa Goswami	2020 - current

H.2 Research Assistants:

1.	Alexandra Cordova (started as undergraduate student and graduated in 2018) *Current position: Graduate student at Texas A&M pharmacology school*	2018 - 2019
2.	Víctor Seguí Barragan *Current position: Graduate student at Department of Chemistry UT Austin*	2020

H.3 Current Undergraduate Students:

1.	Sidney Eichelberger	2017 - current
2.	Kailey Hampton	2020 - current
3.	Azeez Abdul	2020 - current
4.	Hayden Mant	2020 - current
5.	Gabriella White	2020 - current
6.	Jordan Wartell	2020 - current

H.4 Former Undergraduate Students:

1.	Alikhan Karimi *Current position: Graduate student at Texas Tech medical school*	2015 - 2016
2.	Hamza Malik *Current position: Graduate student at UNT medical school*	2015 - 2016
3.	Dylan Erwin *Current position: unknown*	2015 - 2016
4.	Yousef Darwish *Current position: Graduate student at Texas A&M medical school*	2015 - 2017
5.	Nan Xie *Current position: Graduate student Department of Chemistry at Yale*	2015 - 2018
6.	Dylan Pittman *Current position: Graduate student applying to medical schools*	2017 - 2018
7.	Socrates Salinas *Current position: undergraduate student SMU*	2017
8.	Pavlik Polunin *Current position: undergraduate student SMU*	2017 - 2019
9.	Umyeena Bashir *Current position: undergraduate student SMU*	2017 - 2018
10.	Alexandra Cordova *Current position: Graduate student at Texas A&M toxicology school*	2017 - 2018

11. Justin Musgrove — 2019
Current position: unknown
12. Daniel Shu — 2019
Current position: undergraduate student at UT Dallas
13. Bekah Blackmore — 2018 - 2019
Current position: undergraduate student SMU
14. Jake Garrett — 2018 - 2019
Current position: undergraduate student SMU
15. Amy Tippin — 2018 - 2019
Current position: undergraduate student SMU
16. Faisal Alsadiq — 2019
Current position: undergraduate student SMU
17. Hallie Wilson — 2019 – 2020
Current position: undergraduate student SMU
18. Saima Alwani — 2020
Current position: undergraduate student SMU
19. Rama Bhat — 2019 – 2020
Current position: Graduate student at University of Fort Lauderdale medical school

I. Courses Taught at SMU

1. Advanced Inorganic Chemistry (CHEM5392) — Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2020
2. Inorganic Synthesis Lab (CHEM5192) — Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2020
3. Undergraduate Research (CHEM4397) — Fall 2017, Spring 2019, Fall 2019
4. General Chemistry I (CHEM1303) — Spring 2018, Spring 2020
5. General Chemistry II (CHEM1304) — Spring 2019

J. Outreach activities

J.1 Outreach activities in high-schools and elementary schools

1. Green elementary (Allen, TX). 5th grade students (over 100 students, 8 experiments) — Spring 2019

J.2 Summer research for high-school students

1. Richel Seiko Murata (Duncanville high school) — Summer 2019
Current position: Undergraduate student at the University of Pittsburg

K. Professional service

K.1 Manuscript reviewer:

1. Journal of the American Chemical Society
2. Inorganic Chemistry
3. Chemical Science
4. ACS Catalysis
5. RSC Advances
6. Inorganica Chimica Acta
7. New Journal of Chemistry
8. Chemical Communications
9. Journal of Organometallic Chemistry
10. Journal of Molecular Catalysis A
11. Organometallics
12. Chemistry: A European Journal
13. Journal of Organic Chemistry
14. Synthesis
15. ChemCatChem
16. JOVE
17. Journal Inorganic Biochemistry
18. Dalton Transactions

K.2 Research grant reviewer:

1. NSF MRI
2. ACS PRF ND
3. ACS PRF DNI
4. Murdock Trust

K.3 Conferences and symposium organizer:

1. Chair of the session "*Bioinorganic Chemistry: Proteins & Enzymes & Model Systems"* at the ACS National meeting. San Diego, 2016.
2. Symposium organizer *Many Colors of Copper*. ACS National Meeting. Washington D.C. 2017
3. Conference organizer 51st Annual Meeting-in-Miniature (DFW Section of ACS), SMU, Dallas. 2018

K.4 Editorial

1. Guest Editor for *Molecules*. Special Issue untitled "O*rganic Transformations Promoted by 3d Metal Complexes: Synthetic Applications and Mechanisms".* 2019 – 2020.

L. Other merits

L.1 Language skills

1. Catalan: mother language
2. Spanish: fluent
3. English: fluent

L.2 Professional memberships

1. ACS Member (nº 30270213)
2. Catalan Chemical Society (I.E.C. Soc. Cat. de Química).
3. Spanish Chemical Society (R. S. E. de Química).