

Jimmy Franco

315 Turnpike St • North Andover, MA 01845
Phone: 978-837-5285 • E-Mail: francoj@merrimack.edu

Current Position

Assistant Professor at Merrimack College

Education

- Ph.D., Organic Chemistry, University of California, Davis. 2008
- Bachelor of Science, Chemistry, Beloit College, Beloit, Wi. 2003

Research Experience

- **Assistant Professor** – Merrimack College 2011-Current
 - Discipline Based Education Research
 - Medicinal chemistry
 - Synthesis of biologically active compounds
 - Protein expression and purification
- **Visiting Professor** – University of Toledo 2008 -2011
 - Synthesis of inhibitors
 - Co-crystallization of protein complexes
- **Doctoral Research** – University of California, Davis 2003-2008
 - Utilization of fullerenes as selective delivery agents.
 - Characterization of functionalized porphyrins (and other macrocycles) and the interactions with various fullerenes.
 - Designed hosts for fullerenes and examined their interactions by single crystal X-ray crystallography.
- **Summer Research**
 - Rush Medical School, Chicago IL; Cartilage Research. (2002)
 - Beloit College, Beloit WI; Food Web researcher, using Visual Basic. (2003)

Teaching Experience

- **Assistant Professor** 2011-Current
 - Taught biochemistry lecture, biochemistry laboratory, organic chemistry lecture, organic chemistry laboratory, chemistry for health science professionals (GOB), chemistry for health science professionals (GOB) laboratory, medicinal chemistry, directed research, senior research, and senior seminar. (at Merrimack College)
- **Visiting Professor** 2008 -2011
 - Taught organic chemistry, health science chemistry and general chemistry. (at The University of Toledo)
- **Instructor** 2008
 - Prepared lectures and exams for the organic chemistry laboratory class. (at The University of California at Davis)
- **Teaching Assistant** 2003 to 2008
 - Taught organic chemistry in a laboratory setting and discussion sections. (at The University of California at Davis)
- **Head Teaching Assistant** 2005 to 2008

- Handled enrollment and supervised exams. (at The University of California at Davis)

Publications

Sarina E, Mercado B, **Franco J**, Thompson CJ, Easterling M, Olmstead M, Balch A. 2-Aminoethanol Extraction as a Method for Purifying Sc₃N@C₈₀ and for Differentiating Classes of Endohedral Fullerenes on the Basis of Reactivity. *Chemistry* 21: 17035-43, **2015**. PMID [26437717](#) DOI: [10.1002/chem.201502415](#)

Franco J, Purifying Compounds by Recrystallization. Accepted *JOVE Sci. Ed. Series* Accepted (Submitted Fall **2015**)

Franco J, Perform column chromatography. Accepted *JOVE Sci. Ed. Series* Accepted (Submitted Fall **2015**)

Franco J, Growing Crystals for X-ray Diffraction Analysis. Accepted *JOVE Sci. Ed. Series* Accepted (Submitted Fall **2015**)

Daniels D., Berkes C., Nekoie, A., **Franco J***, Fighting Tuberculosis in an Undergraduate Laboratory: Fighting Tuberculosis in an Undergraduate Laboratory: Synthesizing, Evaluating and Analyzing Inhibitors; *J. Chem. Educ.*, **2015**, 92 (5), pp 928–931, **DOI:** [10.1021/ed400891k](#)

Wilsey C., Gurka J., Toth D., **Franco J***, A Large Scale Virtual Screen of DprE1; *Comp. Bio. Chem.*, Volume 47, December **2013**, Pages 121-125, ISSN 1476-9271,

Franco J*, Blackie, M., Toth, D., Smith, P., Capuano, J., Fastnacht, K., Berkes, C., A structural comparative approach to identifying novel antimalarial compounds *Comp. Bio. Chem* Volume 45, August **2013**, Pages 42-47, ISSN 1476-9271

Toth D., **Franco J.**, and Berkes, C.; Attacking HIV, Tuberculosis and Histoplasmosis with XSEDE Resources, *Proceedings of the Conference on Extreme Science and Engineering Discovery Environment: Gateway to Discovery*, July **2013**

Pinault L, Han JS, Kang CM, **Franco J**, Ronning D*, Zarfirlukast inhibits Complexation of Lsr2 with DNA and Growth of Mycobacterium tuberculosis; *Antimicrob Agents Chemother.* 2013 May;57(5):2134-40. doi: [10.1128/AAC.02407-12](#). Epub **2013 Feb 25**

Toth, D* and **Franco, J**; Using Supercomputing to Conduct Virtual Screen as Part of the Drug Discovery Process in a Medicinal Chemistry Course; *J. Comp. Sci. Ed* **2012**, 3 (2) pp 18-25

Franco, J.;* Online Gaming for Understanding Folding, Interactions, and Structure; *J. Chem. Educ.*, **2012**, 89 (12), pp 1543–1546
doi.org/10.1021/ed200803e

Franco, J., Hammons, J., Olmstead, M*. Rios, D.; New Tetraazaannulene Host for Fullerenes; *Inorg. Chem.* **2010**, 49, 5120-5125

Franco, J., Ell, J., Hilton, A., Hammons, J., Olmstead, M*., C₆₀Br₈ and C₆₀(NO₂)₆ as Selective Tools in Organic Synthesis; *Fullerenes, Nanotubes and Carbon Nanostructures*, **2009**, 17, 349-360

Franco, J., Hammons, J., Olmstead, M*., Bis[1-(1-adamantyliminomethyl)-2-naphtholato-κ²N,O]cobalt(II) Acta Crys., Section E: Structure Reports Online **2008**, E64(10)

Franco, J., Hammons, J., Olmstead, M*.; Tetra-μ₂-acetato-κ⁸O:O'-bis{[1-(1-adamantyliminomethyl)-2-naphtholato-κO]rhodium(II)}; *Acta Cryst.* **2007**, E63, m2606-m2607

Grants and Fellowships

- **Murray Fellowship** 2015
Title: “Identifying Inhibitors of the Fungal Virulence Factor Cbp1” This project focused on identifying biologically active compounds for the treatment of Histoplasmosis, with an emphasis on undergraduate research. Awarded 10,000
- **Provost Innovation Fund** 2015
Title: “Creating Virtual Experiential Learning Experiences” Awarded \$5,000
- **Carl Storm Minority Fellowship** 2013
\$600 toward attending the Medicinal Chemistry Gordon Conference
- **NSF-funded XSEDE MCB120158** Co-Investigator 10/01/12-10/01/13
Title: “Identifying Inhibitors of the Fungal Virulence Factor Cbp1” This was a competitive allocation of 1,396,698 hours of compute time on the TACC Sun Constellation Cluster (Ranger) aimed at using virtual screening to identify Cbp1 inhibitors.
- **NSF-funded XSEDE MCB120159** Franco (PI) 10/01/12-10/01/13
Title: “Identifying Inhibitors that Prevent the Complexation of HIV-1 Tat•P-TEFb thus Blocking HIV Replication” This was a competitive allocation of 421,667 hours of compute time on the TACC Sun Constellation Cluster (Ranger) aimed at identifying HIV replication inhibitors; Role: Principal Investigator
- **NSF-funded XSEDE MCB120043** Franco (PI) 01/31/12-01/31/13
Title: “Virtual Screening of Pathogenic Drug Targets” This was a start-up allocation of 200,000 hours of compute time aimed at preliminary virtual screens

of several potential drug targets involved in infectious disease. Role: Principal Investigator

- **Provost Innovation Fund** 2013
Title: Revitalizing SURP at Merrimack College. Awarded - \$5,000
- **Faculty Development Grant** 2013
Title: Summer Undergraduate Research Program with a Project Focused on Identifying Novel Anti-tuberculosis Compounds. Awarded - \$3,500
- **NSF-funded XSEDE TG-MCB120071** Franco (PI) 01/31/12-01/31/13
Title: Using Supercomputing in a Medicinal Chemistry Course. This was an allocation grant of 25,000 hours of compute time to use for educational purposes.
- **NCI Therapeutics Grant** 2012
Awarded \$1,800 worth of compounds for testing as PI from National Cancer Institute.
- **NCI Therapeutics Grant** 2012
Awarded \$1,440 of compounds for testing as PI from National Cancer Institute.
- **NCI Therapeutics Grant** 2012
Awarded \$1,860 of compounds for testing as PI from National Cancer Institute.
- **NCI Therapeutics Grant** 2012
Awarded \$420 of compounds for testing as Co-PI from National Cancer Institute.
- **LED Initiative Grant** 2012
Title: Project to Construct the World's Largest Periodic Table. Awarded \$825 for the construction of the world's largest periodic table. (Co-Authors Dr. Kay and Bowhers)
- **NCI Therapeutics Grant** 2012
Awarded \$480 of compounds for testing as Co-PI from National Cancer Institute.
- **Sloan Fellow** 2003- 2008
\$30,000 in Graduates Student Support
- **Borga Scholar** 2003- 2005
\$10,000 Graduates Student Support
- **Howard Hughes Scholar** 2001
\$5,000 in summer support to conduct undergraduate research at Rush Medical School. The funds supported my research on arthritis.

Other activities

- **Huffington Post Article**

- Pedagogical work was recently highlighted in the Huffington Post “Computing a Cure for HIV: 9 Ways Supercomputers Help Scientists Understand and Treat the Virus”; Section 8) Preparing the next generation to continue the fight; Posted 06/20/2014
- **Undergraduate Engineering and Sciences (UCES) 2013 Award Program**
 - National award for the most outstanding computational project in undergraduate education. The competition include both universities and colleges from across the country
- **Member of the American Chemical Society**
- **Member of Omicron Delta Kappa**
 - National leadership honor society for college students, faculty, staff, administrators, and alumni

Review Journal Articles

- Journal of Chemical Education
- Journal of Tuberculosis
- Combinatorial Chemistry & High Throughput Screening
- Bioorganic & Medicinal Chemistry Letters

Committees

- General Education Committee 2014 - Current
 - Worked on developing the general education requirements
- Faculty In Residence 2013 – Current
 - Weekly meetings with the Resident life staff/RAs, assist in floor projects and help organize campus events; bridge the gap between academics and resident life
- Biology-Chemistry Integration Committee 2013
- Undergraduate Curriculum Committee 2012 - 2013
 - Reviewed and approved new courses
- First Year Experience Committee 2012 – Current
- Health Professions Committee 2012 – Current

Conferences

- American Chemical Society National Meeting 2015
 - Poster Presentation
 - Co-authored a student poster
- Northeast Undergraduate Research and Development Symposium (NURDS) Spring 2015
 - Co-authored a two student poster
 - Co-authored two student talks
- American Society for Biochemistry and Molecular Biology Workshop Spring 2014
- Northeast Undergraduate Research and Development Symposium (NURDS) Spring 2014
 - Co-authored a student poster
 - Co-authored three student talks

- Harry C. Allen Symposium at Clark University Spring 2014
 - Co-authored a two student poster
- Northeast Undergraduate Research and Development Symposium (NURDS) Spring 2013
 - Co-authored a two student poster
 - Co-authored two student talks
- American Chemical Society National Meeting Spring 2013
 - Poster Presentation
- Gordon Conference – Medicinal Chemistry Fall 2013
 - Two Poster Presentations
- Society of Industrial and Applied Mathematics International Meeting Spring 2013
 - Invited Speaker – 1st place Undergraduate Computational Engineering and Science Award
- Mass Bio –Spring 2012

Courses Taught

- Organic Chemistry I lecture and laboratory
- Organic Chemistry II lecture and laboratory
- Biochemistry lecture and laboratory
- General Chemistry
- Chemistry for Health Science I lecture and laboratory
- Chemistry for Health Science II lecture and laboratory
- Introduction to Research
- Directed Research
- Chemistry Seminar
- Medicinal Chemistry