Revised: October 21, 2022

NAME: Joel S. Freundlich

PRESENT TITLE: Professor (Tenured) – Pharmacology, Physiology & Neuroscience (primary), Medicine (secondary), Member of Center for Emerging and Reemerging Pathogens, Member of Graduate Program in Medicinal Chemistry

HOME ADDRESS: 9 Stanford Place, Princeton, NJ 08540

OFFICE ADDRESS: MSB E-681, 185 South Orange Avenue, Newark, NJ 07103

TELEPHONE NUMBER/E-MAIL ADDRESS: 609-865-7344/freundjs@rutgers.edu

CITIZENSHIP: USA

EDUCATION:

A. Undergraduate Graduate and Professional
Cornell University
Ithaca, NY
Bachelor of Science (Chemical Engineering) 06/1991

B. Graduate and Professional
Cornell University
Ithaca, NY
Master of Engineering (Chemical Engineering) 06/1992

Massachusetts Institute of Technology
Cambridge, MA
Ph.D. (Chemistry) 06/1996

ACADEMIC APPOINTMENTS:

Department of Pharmacology, Physiology, and Neuroscience
Department of Medicine
Center for Emerging and Reemerging Pathogens
Member of Graduate Faculty in the Department of Medicinal Chemistry
Rutgers University – New Jersey Medical School
Professor with Tenure
07/2022 – present

Department of Pharmacology, Physiology, and Neuroscience
Department of Medicine
Center for Emerging and Reemerging Pathogens
Member of Graduate Faculty in the Department of Medicinal Chemistry
Rutgers University – New Jersey Medical School
Associate Professor with Tenure
07/2017 – 06/30/2022

Department of Pharmacology, Physiology, and Neuroscience
Department of Medicine
Center for Emerging and Reemerging Pathogens
Rutgers University – New Jersey Medical School
Associate Professor
07/2014 – 06/2017

Department of Pharmacology and Physiology
Department of Medicine
Center for Emerging and Reemerging Pathogens
Rutgers University – New Jersey Medical School
Assistant Professor
07/2013 – 06/2014

Department of Pharmacology and Physiology
Department of Medicine
Center for Emerging and Reemerging Pathogens
University of Medicine and Dentistry of New Jersey – New Jersey Medical School
Assistant Professor
05/2011 – 06/2013

Department of Biochemistry and Biophysics
Texas A&M University
Senior Research Scientist
03/2006 – 04/2011

Department of Chemistry
Princeton University
Visiting Senior Research Scholar
03/2006 – 03/2009

OTHER EMPLOYMENT OR MAJOR VISITING APPOINTMENTS:

Jacobus Pharmaceuticals
Senior Scientist
11/2003 – 3/2006

Provid Pharmaceuticals
Consultant
05/2003 – 10/2003

Locus Pharmaceuticals
Senior Scientist
05/2001 – 05/2003

Praecis Pharmaceuticals
Scientist II
06/1998 – 05/2001

Colgate-Palmolive Company
Research Scientist
06/1996 – 06/1998

MEMBERSHIPS, OFFICES AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

American Society for Microbiology
Member
01/2016 – present

American Chemical Society
Member
09/1990 – present

HONORS AND AWARDS:

American Institute of Chemists Award
1991

Exxon Outstanding Scholar
Exxon Corporation
1990

National Engineering Honor Society
Tau Beta Pi
1989 – 1991

McMullen Dean's Scholar
Cornell University
1987 – 1991

Rutgers University Award of Tenure
07/01/2017 –

Golden Apple Teaching Award
2018, 2020

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

NIH Study Section Member
ZRG1 IMST-L (11) B Small Business: Biological Chemistry, Biophysics and Drug Discovery (2012-2013)
U.S.-South African Program for Collaborative Biomedical Research RFA (2014)
ZRG1 IMST-L 51 New Tools to Aid the Identification, Tracking, Manipulation, and Analysis of Glycans and their Functions and 52 -New Adaptations to Simplify Existing Technologies for Manipulation and Analysis of Glycans (2017)
ZRG1 BCMB-G 02 M, Member Conflict: Biological Chemistry and Macromolecular Biophysics (2019)
ZRG1 BCMB-G (02), Member Conflict: Biological Chemistry and Macromolecular Biophysics (2020)
ZTR1 DPI-7 (01), National Center for Advancing Translational Sciences Special Emphasis Panel (2021)

U.S. South Africa Program for Collaborative Biomedical Research Phase II (2019)

CRDF Global Study Section Member
Review of United States Centers for Disease Control and Prevention Grant Proposals (2013)

French National Agency of Research Study Section Member
Call for Projects Biochemistry, Biophysics, Molecular Biology and Structural Biology (2016-7)

European Science Foundation Junior and Senior Postdoctoral Fellowship Study Section Member (2019)
The Wellcome trust/DBT India Alliance Fellowship Study Section Member (2020)

U.S. Army Institute for Collaborative Biotechnologies Study Section Member (2022)

SERVICE ON MAJOR COMMITTEES:

A. International
Member Scientific Advisory Board of Lytica, Inc. (2020–)
Member Scientific Advisory Board of Phoenix Nest, Inc. (2013–)
Member Scientific Advisory Board of Hereditary Neuropathy Foundation (2015–2020)
Member Scientific Advisory Board of Collaborations Pharmaceuticals (2016–2019)

B. National
"Advances in Virtual High-Throughput Screening" Symposium Co-chair, American Chemical Society National Meeting, 04/10/2013; "Tuberculosis: Biology and Emerging Therapeutics" Symposium Co-chair, American Chemical Society National Meeting, 03/17/2014

C. Medical School/University
RBHS Anti-Racism Taskforce, 02/2021 –
RBHS Faculty Racial Equity Working Group 09/2022 –
Reading is Humanity Committee (Lead Member) 10/2022 –
Rutgers University STEM Network, 08/2022 – The STEM network is focused on increasing interest among underrepresented students - women, Black, Latinx, and Native American students –in STEM at Rutgers University. I mentor one student per academic year, meeting with them monthly to discuss key topics and any issues that have arisen with them.
Member of Faculty Committee on Appointments and Promotions, 9/2017 – 9/2020
Member of Institutional Biosafety Committee (IBC), 12/2013 – 6/2022
Reviewer for 2014 NJMS Dean's Biomedical Research Support Program

D. Editorial Board, Antimicrobial Agents and Chemotherapy, 01/2017 –
Editorial Board, ACS Infectious Diseases, 10/2020 –

E. *Ad Hoc* Reviewer
a. *Journal of Medicinal Chemistry*, 1996–
b. *Tetrahedron Letters*, 2006–
c. *Bioorganic and Medicinal Chemistry Letters*, 2006–
d. *Tetrahedron*, 2006–
e. *Chemical Reviews*, 2007–
f. *Drug Discovery Today*, 2012–
g. *PLoS Pathogens*, 2012–
h. *Nature Communications*, 2012–
i. *Nature Chemical Biology*, 2013–
j. *Antimicrobial Agents and Chemotherapy*, 2014–
k. *Cell Chemistry and Biology*, 2017–
l. *ACS Infectious Diseases*, 2017–
m. *Journal of the American Chemical Society*, 2017–
n. *Cell*, 2020 –
o. *Proceeding of the National Academy of Sciences USA*, 2021–

SERVICE ON GRADUATE SCHOOL COMMITTEES:

Molecular Biology, Genetics, and Cancer Track Oversight Committee (2012 –)
M.D./Ph.D. Oversight and Admissions Committee (2012–2022)

TEACHING RESPONSIBILITIES:

Lectures or Course Directorships

Graduate School of Biomedical Sciences, Select Agent Biology MSBS N517Q Spring 2012 – 2013, 4 lectures on drug discovery and *Mycobacterium tuberculosis* infection, 8 hours
Graduate School of Biomedical Sciences, Advanced Concepts in Infection, Immunity and Inflammation, Spring 2012 – 6, 1 hour
Graduate School of Biomedical Sciences, Critical Readings in Parasitology Spring 2014, 2 hours
Graduate School of Biomedical Sciences, Principles of Pharmacology, Fall 2014 – 5, 2 hours

Graduate School of Biomedical Sciences, Introduction to Genomics, Proteomics, and Bioinformatics, Spring 2015, Spring 2017 – 9, 2 hours
Graduate School of Biomedical Sciences, Critical Readings in the Chemical Biology of Pathogens (Course Director) Spring 2015 – 7, 9, 2022, 3 hours
Graduate School of Biomedical Sciences, Topics in Pharmacology (PHPY-N5030), Spring 2016 – 2021, 6 hours
Graduate School of Biomedical Sciences, Ethical Scientific Conduct Course, Spring 2020 – 2021 – 0.5 hour
Graduate School of Biomedical Sciences, Classic and 21st Century Pathogens (TIII 5620Q), Fall 2020 – 2022 – 1.5 hours

New Jersey Dental School, Pharmacology PHRM 7206 Spring 2012 – 2022, Antibacterials/Antibiotics Lectures, 4 hours; Spring 2013, 2 lectures, 2 hours; Spring 2014, 2 lectures, 2 hours, 2015, 2 lectures, 2 hours, 2016 – 2022 4 lectures, 4 hours

New Jersey Medical School, Foundation 2 Fall Winter 2016 - 2021, Antibacterials/Antivirals lectures, 7 hours

Rutgers University School of Pharmacy, Pharmaceutical Chemistry (30:715:306), Spring 2010, 7 lectures, 10.5 hours
Rutgers University School of Pharmacy, Principles of Drug Design (16:663:502), Spring 2014, Spring 2016, 2 hours
Rutgers University School of Pharmacy, Medicinal Chemistry I (30:715:409), Fall 2018 - 2021, 5 hours

Princeton University Department of Chemical and Biomolecular Engineering, Physical Basis of Disease, Spring 2019, 1.5 hours

Princeton University Departments of Chemical and Biomolecular Engineering and Molecular Biology, Antibiotics: From Cradle to Grave, Fall 2021, 1.5 hours

A. Research Training

Post Doctoral Fellows:

Dr. Shivangi (06/2022 –)
Dr. Srinivas Thadkapally (02/2022 –)
Dr. Pankaj Sharma (01/2022 –)
Dr. Naina Sharma (11/2021 – 2/2022)
Dr. Quan Jiang (09/2020 – 12/2021)
Dr. Andrew Bolinger (02/2020 – 08/2020)
Dr. Anil Shelke (01/2020 –)
Dr. Samer Daher (07/2019 – 08/2021)
Dr. Yong-Mo Ahn (05/2019 – 02/2022)
Dr. K. Niccole Fuhr (11/2018 – 03/2019)
Dr. Janaina Cruz Pereira (08/2018 – 04/2020)
Dr. Ravindra Jahdav (08/2016 – 11/2019)
Dr. Srinivasan Kandasamy (03/2016 – 12/2017)
Dr. Ricardo Gallardo-Macias (09/2015 – 07/2018)
Dr. Daigo Inoyama (3/2015 – 7/2018)
Dr. Divya Awasthi (09/2014 – 6/2017)
Dr. Nisha Mittal (07/2014 – 05/2017)
Dr. Alex Perryman (11/2013 – 08/2018)
Dr. Shao-Gang Li (11/2012 – 02/2020)
Dr. Mi-Sun Koo (07/2012 – 04/2014)
Dr. Hiyun Kim (12/2011 – 06/2012)

Pre Doctoral Students:

Mr. Amir George (6/2022 –)

Ms. Pamela Barnett (03/2019 – 8/2021)
Mr. Alejandro Davila-Pagan (6/2018 – 2/2019)
Mr. Xin Wang (12/2013 – 5/2019); Currently post-doctoral associate Harvard Medical School
Mr. Jimmy Patel (6/2015 – 4/2019); Currently resident physician at Emory University School of Medicine
Ms. Prachi Anand (5th Year through Rutgers Chemistry-Newark, 05/2014 – 05/2015)

Master's Students:

Ms. Zofshan Gulzar (Rutger's Master's 09/2021 –)
Ms. Lauren Bowden (Rutgers Master's 09/2021– 12/2021)
Ms. Shivani Amini (Rutgers Master's 09/2020– 09/2021)
Mr. Paul Lozano (Rutgers Master's 01/2020 – 05/2021)
Ms. Joy Chang (Rutgers Master's 01/2020 – 05/2020)
Mr. Aneesh Godbole (Rutgers Master's 09/2019 – 05/2020)
Ms. Tenesha Boyd (Rutgers Master's 2018, 08/2018 – 12/2018)
Mr. Fahid Nasser (Rutgers Master's 2017, 06/2017 – 07/2017)
Ms. Monica Anisetti (Rutgers Master's 2014, 09/2013 – 11/2013)
Mr. Jonathan Gellis (UMDNJ Master's 2013, 01/2013 – 06/2013)
Mr. Gilbert Tapia (UMDNJ Master's 2013, 10/2012 – 06/2013)
Mr. Anton Matveev (UMDNJ Master's 2012, 11/2011 – 06/2012)

Undergraduate Students:

Ms. Katharine Morrison (06/2022 – 8/2023)
Mr. James Mannix (05/2022 – 8/2023)
Ms. Alexandra Bozan (09/2021 –)
Ms. Khadija Mughal (06/2021 –)
Ms. Jahnvi Joshi (02/2021 –)
Ms. Ashni Kapadia (09/2020 –)
Ms. Catherine Biava (06/2020 – 5/2021)
Mr. George Mina (06/2020 – 08/2020)
Ms. Tamara Allada (06/2019 – 08/2019, 06/2020 – 08/2020)
Mr. Haseeb Mughal (05/2019 –7/2020; Currently 2nd year graduate student MIT Department of Chemistry
Mr. Amir George (07/2018 – 06/2020)
Mr. Ethan Morrison (09/2017 – 06/2020)
Mr. Matthew Sherwood (07/2017 – 06/2020; Currently 3rd year graduate student Temple University Department of Chemistry
Mr. Thomas Stratton (Rutgers Newark Class 2016, Scripps Research Institute Ph.D. 2020, Gilead Senior Scientist 2020–, 06/2013 – 05/2016)

GRANT SUPPORT:

A. Principal Investigator
1. National Institutes of Health, U19AI171401
2. National Institutes of Health, R21AI169342
3. National Institutes of Health, R01AI153145
4. National Institutes of Health/Rutgers University, U01HL150852/HealthAdvance Fund
5. National Institutes of Health, U19AI142731

6. New Jersey Health Foundation, PC 35-21
7. National Institutes of Health, R41AI134561
8. New Jersey Health Foundation, PC79-17
9. National Institutes of Health, R41AI122434
10. National Institutes of Health, R33AI11167
11. Jonah's Just Begun
12. Charles and Johanna Busch Memorial Fund
13. National Institutes of Health, U19AI109713
14. National Institutes of Health, R21AI111647
15. National Institutes of Health, 3DP2OD008459-01S1
16. Foundation of University of Medicine and Dentistry of New Jersey, High Impact Grant
17. Foundation of University of Medicine and Dentistry of New Jersey, Seed Grant,
18. Foundation of University of Medicine and Dentistry of New Jersey, High Impact Grant

B. Co-Investigator

1. National Institutes of Health, R01AI145435
2. National Institutes of Health, R01AI143768
3. National Institutes of Health, R56AI145435
4. Department of Defense, W81XWH-17-PRMRP-DA
5. National Institutes of Health R33AI111739
6. National Institutes of Health, R21AI111739
7. National Institutes of Health, 1R01AI103507-01A1
8. National Institutes of Health, 9R44TR000942-02
9. National Institutes of Health, 2R42AI088893
10. National Institutes of Health, 1R01AI099277

PUBLICATIONS:

1. **Freundlich, J. S.**, Schrock, R. R., Cummins, C. C., Davis, W. M., "Organometallic complexes of tantalum that contain the triamidoamine ligand, $[(Me_3SiNCH_2CH_2)_3N]^{3-}$, including an ethylidene complex formed via a phosphine-catalyzed rearrangement of an ethylene complex," *Journal of the American Chemical Society*, 116, 6476-6477, 1994.
2. **Freundlich, J. S.**, Schrock, R. R., Davis, W. M., "Synthetic and mechanistic investigations of trimethylsilyl-substituted triamidoamine complexes of tantalum that contain metal-ligand multiple bonds," *Journal of the American Chemical Society*, 118, 3643-3655, 1996.
3. **Freundlich, J. S.**, Schrock, R. R., Davis, W. M., "Alkyl and alkylidene complexes of tantalum that contain a triethylsilyl-substituted triamidoamine ligand," *Organometallics*, 15, 2777-2783, 1996.
4. **Freundlich, J. S.**, Schrock, R. R., "Synthesis of triamidoamine complexes of niobium," *Inorganic Chemistry*, 36, 7459-7461, 1997.
5. **Freundlich, J. S.**, Anderson, J. W., Sarantakis, D., Shieh, H.-M., Yu, M., Valderramos, J. C., Lucumi, E., Kuo, M., Jacobs Jr., W. R., Fidock, D. A., Schiehser, G. A., Jacobus, D. P., Sacchettini, J. C., "Synthesis, biological activity, and X-ray crystal structural analysis of diaryl ether inhibitors of malarial enoyl ACP reductase. Part 1: 4'-Substituted triclosan derivatives," *Bioorganic and Medicinal Chemistry Letters*, 15, 5247-5252, 2005.
6. **Freundlich, J. S.**, Yu, M., Valderramos, J. C., Lucumi, E., Tsai, H-.C., Kuo, M., Jacobs Jr., W. R., Schiehser, G. A., Fidock, D. A., Jacobus, D. P., Sacchettini, J. C., "Synthesis and biological activity of diaryl ether inhibitors of malarial enoyl ACP reductase. Part 2: 2'-Substituted triclosan derivatives," *Bioorganic and Medicinal Chemistry Letters*, 16, 2163-2169, 2006.

7. **Freundlich, J. S.**, Landis, H., "An Expeditious Aqueous Suzuki Methodology for the Assembly of Aryl-substituted phenols," *Tetrahedron Letters*, 47, 4275-4279, 2006.
8. **Freundlich, J. S.**, Wang, F., Tsai, H.-C., Kuo, M., Shieh, H.-M., Anderson, J. W., Nkrumah, L. J., Valderramos, J. C., Yu, M., Jacobs Jr., W. R., Schiehser, G. A., Jacobus, D. P., Fidock, D. A., Sacchettini, J. C., "X-ray structural analysis of Plasmodium falciparum enoyl acyl carrier protein reductase as a pathway towards the optimization of triclosan antimalarial efficacy," *Journal of Biological Chemistry*, 282, 25436-25444,2007.
9. Yu, M., Kumar, T. R. S., Nkrumah, L. J., Coppi, A., Retzlaff, S., Li, C. D., Kelly, B. J., Moura, P. A., Lakshmanan, V., **Freundlich, J. S.**, Valderramos, J.-C., Vilchèze, C., Siedner, M., Tsai, J. H., Falkard, B., Sidhu, A. B., Purcell, L. A., Gratraud, P., Kremer, L., Water, A. P., Schiehser, G., Jacobus, D. P., Janse, C. J., Ager, A., Jacobs Jr., W. R., Sacchettini, J. C., Heussler, V., Sinnis, P., Fidock, D. A., "The Fatty Acid Biosynthesis Enzyme FabI Plays a Key Role in the Development of Liver Stage Malarial Parasites," *Cell Host & Microbe*, 4, 567-578, 2008.
10. **Freundlich, J. S.**, Wang, F., Gulten, G., Langley, R.,Vilchèze, C., Jacobs Jr., W. R., and Sacchettini, J. C., "Triclosan derivatives as potent inhibitors of drug-sensitive and drug- resistant Mycobacterium tuberculosis," *ChemMedChem*, 4, 241-248, 2009.
11. **Freundlich, J. S.**, Lalgondar, M., Wei, J.-R., Swanson, S., Sorensen, E. J., Rubin, E. J., Sacchettini, J. C., "Seeding Antitubercular Drug Discovery through Natural Products: The Abyssomicin C Family as in vitro Inhibitors of *Mycobacterium tuberculosis*," *Tuberculosis*, 90, 298-300, 2010.
12. Palaninathan, S. K., Mohamedmohaideen, N. N., Orlandini, E., Ortore, G., Nencetti, S., Lapucci, A., Rossello, A., **Freundlich, J. S.**, and Sacchettini, J. C., "Novel transthyretin amyloid fibril formation inhibitors: Synthesis, biological evaluation, and X-ray structural analysis," *PLoS ONE*, 4, e6290, 2009.
13. Lamichhane, G., **Freundlich, J. S.**, Ekins, S., Wickramaratne, N., Bishai, W. R., "Essential Metabolites of M. tuberculosis and their Molecular Mimics as Therapeutic agents against TB," *mBio*, 2, e00301-e00310, 2011.
14. Ekins, S., **Freundlich, J. S.**, "Validating New Tuberculosis Computational Models with Public Whole Cell Screening Aerobic Activity Data Sets," *Pharmaceutical Research*, 28, 1859-1869, 2011.
15. Lotesta, S. D., Yates, E. V., Liu, J., Krieger, I., Sacchettini, J. C., **Freundlich, J. S.**, Sorensen, E. J., EDGE ARTICLE "Expanding the pleuromutilin class of antibiotics by de novo chemical synthesis," *Chemical Science*, 2, 1258-1261, 2011.
16. Vilchèze, C., Baughn, A. D., Tufariello, J., Leung, L., Basler, C., Alland, D., Sacchettini, J. C., **Freundlich, J. S.**, and Jacobs Jr., W. R., "Novel Inhibitors of InhA Efficiently kill Mycobacterium tuberculosis under Aerobic and Anaerobic Conditions," *Antimicrobial Agents and Chemotherapy*, 55, 3889-3898, 2011.
17. Sarker, M., Talcott, C., Madrid, P., Chopra, S., Bunin, B. A., Lamichhane, G., **Freundlich, J. S**., and Ekins, S., "Combining Cheminformatics Methods and Pathway Analysis To Identify Molecules with Whole-Cell Activity Against Mycobacterium tuberculosis," *Pharmaceutical Research*, 29, 2115-2127, 2012.
18. Krieger, I. V., **Freundlich, J. S.**, Gawandi, V. B., Roberts, J. P., Gawandi, V. B., Sun, Q., Owen, J. L., Fraile, M. T., Huss, S., Duncan, K., Lavandera, J.-L., Ioerger, T. R., Sacchettini, J. C., "Structure-Guided Discovery of Phenyl-diketo Acids as Potent Inhibitors of M. tuberculosis Malate Synthase," *Chemistry and Biology*, 19, 1556-1567, 2012.
19. Anderson, J. W., Terpinski, J., Kumar, T. R. S., Tsai, H.-C., Kuo, M., Ager, A. L., Jacobs Jr., W. R., Schiehser, G. A. Ekins, S., Sacchettini, J. C., Jacobus, D. P., **Freundlich, J. S.**, "Novel diaryl ureas with efficacy in a mouse model of malaria," *Bioorganic and Medicinal Chemistry Letters*, 23, 1022-1025,2013.
20. Ekins, S., Reynolds, R. C., Kim, H., Koo, M.-S., Ekonomidis, M., Talaue, M., Paget, S. D., Woolhiser, L. K., Lenaerts, A. J., Bunin, B. A., Connell, N., **Freundlich, J. S.**, "Novel Bayesian models for drug discovery," *Chemistry and Biology*, 20, 370-378, 2013.

21. Ekins, S., Reynolds, R. C., Franzblau, S. G., Wan, B., **Freundlich, J. S.**, Bunin, B. A., "Enhancing Hit Identification in Mycobacterium tuberculosis Drug Discovery Using Validated Dual-Event Bayesian Models," *PLoS ONE*, 8, e63240, 2013.
22. Wilson, R., Kumar, P., Parashar, V., Vilchèze, C., Veyron-Churlet, R., **Freundlich, J. S.**, Barnes, S. W., Walker, J. R., Szymonifka, M. J., Marchiano, E., Shenai, S., Colangeli, R., Jacobs Jr., W. R., Neiditch, M. B., Kremer, L., Alland, D., "Antituberculosis thiophenes define a requirement for Pks13 in mycolic acid biosynthesis," *Nature Chemical Biology*, 9, 499-506, 2013.
23. Ekins, S., **Freundlich, J. S.**, Reynolds, R. C., "Fusing Dual-Event Datasets for Mycobacterium tuberculosis Machine Learning Models and their Evaluation," *Journal of Chemical Information and Modeling*, 53, 3054-3063, 2013.
24. Afanador, G.A., Muench, S.P., McPhillie, M., Fomovska, A., Schön, A., Zhou, Y., Cheng, G., Stec, J., **Freundlich, J. S.**, Shieh, H.M., Anderson, J.W., Jacobus, D.P., Fidock, D.A., Kozikowski, A.P., Fishwick C.W., Rice, D.W., Freire, E., McLeod, R., Prigge, S.T., "Discrimination of Potent Inhibitors of Toxoplasma gondii Enoyl-Acyl Carrier Protein Reductase by Thermal Shift Assay," *Biochemistry*, 52, 9155-9166, 2013.
25. Ponder, E. L., **Freundlich, J. S.**, Sarker, M., Ekins, S., "Computational Models For Neglected Diseases: Gaps and Opportunities," *Pharmaceutical Research*, 31, 271-277, 2014.
26. Ekins, S., **Freundlich, J. S.**, Hobrath, J. V., White, E. L., Reynolds, R. C., "Combining Computational Methods for Hit to Lead Optimization in Mycobacterium tuberculosis Drug Discovery," Pharmaceutical Research, 32, 414-435, 2014.
27. Ekins, S., Pottorf, R., Reynolds, R. C., Williams, A. J., Clark, A. M., **Freundlich, J. S.,** "Looking Back To The Future: Predicting *In vivo* Efficacy of Small Molecules Versus *Mycobacterium tuberculosis*," *Journal of Chemical Information and Modeling*, 54, 1070-1082, 2014.
28. Nixon, M. R., Saoinz, K. W., Koo, M.-S., Szymonifka, M. J., Jung, H., Roberts, J. P., Nandakumar, M, Kumar, A., Liao, R., Rustad, T., Sacchettini, J. C., Rhee, K. Y., **Freundlich, J. S.**, Sherman, D. R., "Folate Pathway Disruption Leads to Critical Disruption of Methionine Derivatives in *Mycobacterium tuberculosis*," *Chemistry and Biology*, 21, 819-30, 2014.
29. Ekins, S., Nuermberger, E. L., **Freundlich, J. S.**, "Minding the Gaps in Tuberculosis Research," *Drug Discovery Today*, 19, 1279-82, 2014.
30. Ekins, S., **Freundlich, J. S.**, Reynolds, R. C., "Are Bigger Datasets Better for Machine Learning? Fusing Single-Point and Dual-Event Dose Response Data for *Mycobacterium tuberculosis*," *Journal of Chemical Information and Modeling*, 54, 2157-65, 2014.
31. Stec, J., Vilchèze, C., Lun, S., Perryman, A. L., Wang, X., **Freundlich, J. S.**, Bishai, W., Jacobs, Jr., W. R., Kozikowski, A. P., "Biological Evaluation of Potent Triclosan-Derived Inhibitors of the Enoyl-Acyl Carrier Protein Reductase InhA in Drug-sensitive and Drug-resistant Strains of *Mycobacterium tuberculosis*," ChemMedChem *9*, 2528-37, 2014.
32. Al Olaby, R. R., Cocquerel, L., Zemla, A., Saas, L., Dubuisson, J., Vielmetter, J., Marcotrigiano, J., Khan, A. G., Catalan, F. V., Perryman, A. L., **Freundlich, J. S.**, Forli, S., Levy, S., Balhorn, R., Azzazy, H. M. E., "Identification of a novel drug lead that inhibits HCV infection and cell-to-cell transmission by targeting the HCV E2 glycoprotein," *PLoS ONE*, 9, e111333, 2014.
33. Perryman, A. L., Yu, W., Wang, X., Ekins, S., Forli, S., Li, S.-L., **Freundlich, J. S.**, Tonge, P. J., Olson, A. J., "A Virtual Screen Discovers Novel, Fragment-Sized Inhibitors of *Mycobacterium tuberculosis* InhA," *Journal of Chemical Information and Modeling*, 9, 645-59, 2015.
34. Ekins, S., **Freundlich, J. S.**, Coffee, M., "A common feature pharmacophore for FDA-approved drugs inhibiting the Ebola virus," F1000Research, *3,* 277, 2014.
35. Li, S.-G., Vilchèze, C., Chakraborty, S., Wang, X., Kim, H., Anisetti, M., Ekins, S., Rhee, K. Y., Jacobs Jr., W. R., **Freundlich, J. S.**, "Evolution of a thienopyrimidine

antitubercular relying on medicinal chemistry and metabolomics insights," Tetrahedron Letters, *56*, 3246-50, 2015.

36. Forbes, L., Ebsworth-Mojica, K., DiDone, L., Li, S.-G., **Freundlich, J. S.**, Connell, N., Dunman, P. M., Krysan, D. J., "A high throughput screening assay for anti-mycobacterial small molecules based on adenylate kinase release as a reporter of cell death," PLoS ONE, *10*, e0129234, 2015.
37. Clark, A. M., Dole, K., Coulon-Spektor, A., McNutt, A., Grass, G., **Freundlich, J. S.**, Reynolds, R. C., and Ekins, S., "Open Source Bayesian Models: I. Application to ADME/Tox and Drug Discovery Datasets," Journal of Chemical Information and Modeling, *55*, 1231-45, 2015.
38. Ekins, S., Madrid, P. B., Sarker, M., Li, S. -G., Mittal, N., Kumar, P., Wang, X., Stratton, T. P., Zimmerman, M., Talcott, C., Bourbon, P., Travers, M., Yadav, M., and **Freundlich, J. S.**, "Combining Metabolite-Based Pharmacophores with Bayesian Machine Learning Models for *Mycobacterium tuberculosis* Drug Discovery," PloS ONE, *10*, e0141076, 2015.
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A. Books, Monographs and Chapters:

1. Ekins, S., **Freundlich, J. S.**, "Computational models for tuberculosis drug discovery," *Methods Molecular Biology*, 993, 245-262, 2013.
2. Ekins S.,* Clark A., Perryman A., Tkachenko V., Korotcov A., **Freundlich J.S.**, Accessible Machine Learning Approaches for Toxicology, In Computational Toxicology: Risk Assessment For Chemicals, Ekins S, John Wiley and Sons, 2018.

B. Patents Held

1. U.S. Patent No. 11,186,549, issued November 30, 2021, "Therapeutic Indazoles."
2. South African Patent No. 2020/01418, issued July 7, 2021, "Therapeutic Indazoles."
3. U.S. Patent No. 10,695,322, issued June 30, 2020, "Inhibitors of Bacterial Growth."
4. U.S. Patent No. 10,450,292, issued October 22, 2019, "Inhibitors of bacterial RNA polymerase: arylpropanoyl, arylpropenoyl, and arylcyclopropanecarboxyl phloroglucinols."
5. U.S. Patent No. 8,664,255, issued March 4, 2014, "Inhibitors of mycobacterium tuberculosis malate synthase, methods of making and uses thereof."
6. U.S. Patent No. 6,353,076, issued March 5, 2002, "Composition Containing Siloxane Based Polyamides."
7. U.S. Patent No. 6,051,216, issued April 18, 2000, "Composition Containing Siloxane Based Polyamides."

C. Other Articles (Reviews, Editorials, etc.) In Journals; Chapters; Books; other Professional Communications

1. Awasthi, D., **Freundlich, J.S.**, "Antimycobacterial Metabolism: Illuminating *Mycobacterium tuberculosis* Biology and Drug Discovery," Trends in Microbiology, *25*, 756-767, 2017.
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3. Ekins, S., **Freundlich, J. S.**, Choi, I., Sarker, M., Talcott, C., "Applying Computational Technologies for Tuberculosis Drug Discovery," *An invited review in Trends in Microbiology*, 19, 65-74, 2011.
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PRESENTATIONS:

National Institutes of Health Science of Microbial Markers in Tuberculosis (SMMarT), 06/27/11
Columbia University Workshop on Microbial and Host Diagnostics and Discovery, 04/02/12
University of Medicine and Dentistry of New Jersey Dept. of Microbiology & Molecular Genetics – 09/11/12
Gordon Research Conference on TB Drug Discovery – 07/23/13
Global Alliance for TB Drug Development, 12/04/13
Rutgers University Department of Medicine Grand Rounds, 12/10/13
Rutgers University Department of Biochemistry and Molecular Biology, 1/09/14
Rutgers University (New Brunswick) Department of Chemistry, 1/17/14
Johns Hopkins Department of Pharmacology and Molecular Sciences, 01/29/14
Cornell University Department of Chemical and Biomolecular Engineering, 02/03/2014
Weill Cornell Medical School Department of Microbiology and Immunology, 02/28/2014
American Chemical Society National Meeting (Dallas, Texas), Invited speaker in Tuberculosis: Biology and Emerging Therapeutics Session, 03/17/14
Stonybrook University Tuberculosis Symposium – 9/22/14
UMass Medical School Department of Biochemistry & Molecular Pharmacology – 10/8/14
UNC-Chapel Hill School of Pharmacy – 12/3/14
Rutgers University Newark Department of Chemistry – 2/5/15
Rutgers University Camden Center for Computational and Integrative Biology – 2/3/15
University of Rochester Medical School Department of Microbiology & Immunology – 2/27/15
World TB Day Conference of TB Biology at the Wadsworth Center – 3/23/15
Duke University Department of Chemistry – 12/1/15
Rutgers University Center for Integrative Proteomics Research – 12/9/15
St. Jude Children's Research Hospital Department of Chemical Biology and Therapeutics Seminar – 1/7/2016
Temple University Department of Chemistry – 1/28/16
Princeton University Department of Molecular Biology – 2/19/16
Boston University Department of Medicine – 2/25/16
NJMS Global Tuberculosis Institute World TB Day Symposium – 3/22/16
World TB Day 2016 Symposium – 3/31/16
Rutgers University Department of Chemistry and Chemical Biology Colloquium – 4/12/16
Center of Immunity and Inflammation (CII) at Rutgers University – 5/5/16
University of Maryland Department of Chemistry – 9/15/16
IBM Corporation New Jersey Town Hall Meeting – 11/4/16
Michigan State University Department of Biochemistry and Molecular Biology – 2/9/17
Johns Hopkins Department of Chemistry – 2/23/17
ACS National Meeting BIOL Chemical Biology of Infectious Disease Symposium – 8/23/17
Columbia University Department of Microbiology and Immunology – 1/29/18
Williams College Department of Chemistry – 2/9/18
Johns Hopkins University Department of Medicine – 4/3/18
New Jersey Institute of Technology Tuckman School of Management – 4/25/18
ACS National Meeting Medicinal Chemistry Symposium – 8/20/18
The TB Alliance for Drug Development – 1/3/19
Princeton University Department of Chemical and Biological Engineering – 3/6/19
World TB Day 2019 Symposium – 3/25/19
Princeton University Department of Chemistry – 4/25/19
AICHE 4th Bioengineering and Translational Medicine Conference (Duke University) – 10/8/19

Colgate University Department of Chemistry – 12/10/19
2020 Microbiology at Rutgers Symposium – 2/7/20
Boston University Systems Biology Seminar Series – 02/27/20
Merck Research Laboratories – 04/17/20
Biovia User Group Conference – 09/22/20
5th Bioengineering & Translational Medicine Conference (Keynote Speaker) – 09/28/20
Rutgers University Department of Biomedical Engineering – 11/2/20
New Jersey Institute of Technology Department of Biomedical Engineering – 11/6/20
Harvard University Microbial Sciences Institute – 1/14/21
University of Dundee Drug Discovery Unit – 2/16/21
ACS National Meeting Medicinal Biological Chemistry Symposium – 04/09/21
Albert Einstein College of Medicine Department of Microbiology & Immunology – 4/14/21
University of Cape Town Institute of Infectious Diseases & Molecular Medicine – 4/21/21
13th Annual Frontiers in Chemistry and Biology Interface Symposium – 5/8/21
World TB Day Symposium at Tufts University – 3/25/22
Keystone Malaria Meeting – 4/11/22
George Washington University Department of Chemistry – 9/23/22
University of Massachusetts Amherst Department of Microbiology – 10/11/22