|  |
| --- |
| Dr. Patrick McTernan  8008 Spruce St. New Orleans, La 70118 · 504-722-1994  pmcter@lsuhsc.edu · [LinkedIn Profile Link](https://www.linkedin.com/in/patrick-mcternan-3a223388/) |
| **Biochemist Specializing in Microbiology and Protein Biochemistry**  Accomplished biochemist with 9 years of lab experience, and an author on 12 publications. My skills include protein chromatography, protein biochemistry, traditional cloning techniques, cultivating bacteria and protein assay development. |

# Experience

|  |
| --- |
| March 2019 – CurrentPostdoctoral Fellow, Dr. PaTRICIA Molina Lab Currently working in the Comprehensive Alcohol Research Center (CARC) at Louisiana State University Health Science Center (LSUHSC). Aug 2015 – March 2019Project Manager / Biology Consultant, Fish Factory Media Led a team in the successful production of the biology teaching tool Draw It To Know It, and served as the biology consultant. Currently leading a team in numerous projects with critical deadlines for external clients. |
| June 2015 – Aug 2015Postdoctoral Fellow, Dr. Michael Adams Lab Led a team of Graduate Students to biochemically characterize over-expressed enzymes from a genetically modified organism. Routinely performed Protein Chromatography, High Performance Lipid Chromatography (HPLC), Gas Chromatography (GC), Western Blots, Polymerase Chain Reaction (PCR), and Traditional Cloning Techniques. Paper 1 in the publication list below resulted from this work. |
| Aug 2008 – May 2015Graduate Research Associate, Dr. Michael Adams Lab Worked extensively with High Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Western Blots, and Traditional Cloning Techniques. Presented and led discussions of project results and advancements with colleagues and collaborators. My work included engineering both bacterial and archaeal strains and required traditional cloning of *Escherichia coli*. The papers from this work include 2 – 11 in the publication list below. |
| Nov 2006 – May 2008Lab Technician, Dr. Fred Rainey Worked on radiation resistant bacteria to better understand how these organisms resist environmental stress. Maintained bacterial cultures and cultivated bacteria daily. Paper 12 in the publication list below resulted from this work. |

# Education

|  |
| --- |
| May 2015PhD - Biochemistry and MOlecular Biology, University of Georgia  * Dissertation: *Genetic Engineering and Purification of the Hydrogenases from the Hyperthermophilic Archaeon Pyrococcus furiosus* |
| Dec 2007Bachelor of Science - Microbiology, Louisiana State University |

# Skills

|  |  |
| --- | --- |
| * High Performance Liquid Chromatography (HPLC) * Gas Chromatography (GC) * Protein Chromatography * Cultivating Bacteria | * Polymerase Chain Reaction (PCR) * Traditional Cloning Techniques * Microsoft Office Suite * Western Blot * Problem Solving |

# Publications

1. Wu, C.-H., **McTernan, P. M**., Walter, M. E., and Adams, M. W. W. (2015) Production and Application of a Soluble Hydrogenase from *Pyrococcus furiosus*. *Archaea,* *2015,* 912582. http://doi.org/10.1155/2015/912582
2. Greene, B. G., Wu, C.-H., **McTernan, P. M**., Adams, M. W. W., and Dyer B. R. (2015) Proton-Coupled Electron Transfer Dynamics in the Catalytic Mechanism of a [Ni-Fe]-Hydrogenase. *Journal of the American Chemical Society* 137(13), 4558-4566
3. **McTernan, P. M**. (2015) Genetic Engineering and Purification of the Hydrogenases from the Hyperthermophilic Archaeon *Pyrococcus furiosus* (**Doctoral Dissertation**). University of Georgia. GALILEO database
4. Chandrayan, S. K., Wu, C.-H., **McTernan, P. M**., and Adams, M. W. (2015) High yield purification of a tagged cytoplasmic [NiFe]-hydrogenase and a catalytically-active nickel-free intermediate form. *Protein expression and purification* 107, 90-94
5. **McTernan, P. M**., Chandrayan, S. K., Wu, C.-H., Vaccaro, B. J., Lancaster, W. A., and Adams, M. W. (2014) Engineering the respiratory membrane-bound hydrogenase of the hyperthermophilic archaeon *Pyrococcus furiosus* and characterization of the catalytically active cytoplasmic subcomplex. *Protein Expression Design Selection* **28**, 1-8
6. **McTernan, P. M**., Chandrayan, S. K., Wu, C.-H., Vaccaro, B. J., Lancaster, W. A., Yang, Q., Fu, D., Hura, G. L., Tainer, J. A., and Adams, M. W. (2014) Intact Functional Fourteen-Subunit Respiratory Membrane Bound [NiFe]-Hydrogenase Complex of the Hyperthermophilic Archaeon *Pyrococcus furiosus*. *Journal of Biological Chemistry* **289**, 19364-72
7. Esteves, A. M., Chandrayan, S. K., **McTernan, P. M**., Borges, N., Adams, M. W., and Santos, H. (2014) Mannosylglycerate and Di-myo-Inositol Phosphate have Interchangeable Roles during Adaptation of *Pyrococcus furiosus* to Heat Stress. *Applied and environmental microbiology*, **80**, 4226-4233
8. Hawkins, A. S., **McTernan, P. M**., Lian, H., Kelly, R. M., and Adams, M. W. (2013) Biological conversion of carbon dioxide and hydrogen into liquid fuels and industrial chemicals. *Current opinion in biotechnology* **24**, 376-384
9. Chandrayan, S. K., **McTernan, P. M.**, Hopkins, R. C., Sun, J., Jenney, F. E., and Adams, M. W. (2012) Engineering hyperthermophilic archaeon *Pyrococcus furiosus* to overproduce its cytoplasmic [NiFe]-hydrogenase. *Journal of Biological Chemistry* **287**, 3257-3264
10. Hopkins, R. C., Sun, J., Jenney Jr, F. E., Chandrayan, S. K., **McTernan, P. M**., and Adams, M. W. (2011) Homologous expression of a subcomplex of *Pyrococcus furiosus* hydrogenase that interacts with pyruvate ferredoxin oxidoreductase. *PloS one* **6**, e26569
11. Sun, J., Hopkins, R. C., Jenney Jr, F. E., **McTernan, P. M**., and Adams, M. W. (2010) Heterologous expression and maturation of an NADP-dependent [NiFe]-hydrogenase: a key enzyme in biofuel production. *PloS one* **5**, e10526
12. Callegan R.P, Nobre M.F, **McTernan P.M**, Battista J.R, Gonzalez R.F, McKay C.P, da Costa M.S, Rainey F.A. Description of Four Novel Psychrophilic, ioning radiation sensitive species of the genus *Deinococcus* from alpine environments. [Int J Syst Evol Microbiol.](javascript:AL_get(this,%20'jour',%20'Int%20J%20Syst%20Evol%20Microbiol.');) 2008 May;58(Pt 5):1252-8

# Posters

**McTernan, P. M.**, Chandrayan S. K., Hopkins, R., C., Sun J., Jenney, F., E., Jr., and Adams M. W. (2011) Recombinant Expression and Characterization of the Hydrogenases from the Hyperthermophilic Archaeon *Pyrococcus furiosus.* Extremophiles symposium, University of Georgia, Athens, GA

# Teaching Experience

University of Georgia:

Biol 1103L Fall 2008

Biol 1103L Spring 2009