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Education:

August 1987 – June 1989	**Postdoctoral Fellow** Department of Biochemistry Albert Einstein College of Medicine Mentor: Dr. Vern L. Schramm
March 1985 – August 1987	**Postdoctoral Fellow** Department of Biochemistry Temple University School of Medicine Mentor: Dr. Vern L. Schramm
August 1979 – March 1985	**Ph.D.** Biochemistry Program Pennsylvania State University Mentor: Dr. Frederick C. Wedler
August 1975 – May 1979	**B.A.** Department of Chemistry and Biochemistry University of Maryland, Baltimore County Mentor: Dr. Richard L. Karpel

Professional Experience:

August 2008 – present	**Professor** Department of Chemistry University of South Florida
March 2014 – present	**Faculty Director** Science in Florence Program USF World University of South Florida
August 1999 – May 2008	**Associate Professor** Department of Chemistry University of South Florida
August 1995 – July 1999	**Associate Professor** Department of Chemistry and Biochemistry Duquesne University
January 1994 – July 1995	**Senior Research Scientist** Analytical Protein & Organic Chem. Group Unigene Laboratories, Inc.
July 1989 – December 1993	**Senior Scientist** Analytical Protein & Organic Chem. Group Unigene Laboratories, Inc.

Honors and Awards:

- 2018 Seminar Tour in China (Tianjin University, Sandong University, and Hainan University) (China: Tianjin, Ji'nan, and Haikou: 29 October - 2 November 2018)
- 2018 Invited Speaker, 10th International on Chemistry Education & Research (Oslo, Norway: 21-22 June 2018)
- 2018 Invited Speaker, The Florida Annual Meeting and Exposition of the American Chemical Society (FAME) (N. Palm Harbor, FL: 3-5 May 2018)
- 2018 Invited Speaker, 11th Annual World Protein & Peptide Conference-2018 (PepCon-2018) (Miami, FL: 26-28 March 2018)
- 2018 Invited Speaker, 3rd International Conference Enzymology and Molecular Biology (London, UK: 5-7 March 2018)
- 2016 Invited Speaker, Trail Blazer Lecture Series, University of South Florida (Tampa, FL: 4 February 2016)
- 2015 Invited Speaker, The Florida Annual Meeting and Exposition of the American Chemical Society (FAME) (N. Palm Harbor, FL: 7-9 May 2015)
- 2013 Invited Speaker, 8th Annual Conference on Difficult to Express Proteins (Boston, MA: 29-30 April 2013)
- 2008 Invited Speaker, Trends in Enzymology 2008 (TinE) (Saint Malo, France: 2-5 July 2008)
- 2000 Invited Speaker, Aegean Conference on Lymphocyte Signal Transduction (Santorini, Greece: 16-20 October 2000)
- 1998 Invited Speaker, Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways (Meriden, NH: 12-17 July 1998)
- 1996 Invited Speaker, 212th National Meeting of the American Chemical Society (Orlando, FL: 25-29 August 1996)
- 1995 Invited Speaker, Manziana'95 Symposium on Copper in Biological Systems (Santa Severa, Italy: 11-15 September 1995)
- 1994 Invited Speaker, Gordon Research on Hormonal and Neural Peptide Biosynthesis (Plymouth, NH 7-12 August 1994)
- 1988 Travel Award from the American Chemical Society to attend the 14th International Union of Biochemistry (IUB) Conference (Prague, Czechoslovakia)

- 2002 - present Editorial Board, *Protein Purification and Expression*
- 2002 - 2018 Editorial Board, *Archives of Biochemistry and Biophysics*
- 1985-1988 NIH Postdoctoral Fellowship (GM 10599)

Manuscripts Currently Under Review from my *Independent* Career:

(a) Jeffries, K.A., Farrell, E.K., Anderson, R.L., Suarez, G., Osborne, A.J.G., Heide, M.K., and **Merkler, D.J.*** (2019) The Characterization and Quantification of the Fatty Acid Amidome. *Neuromethods* (***invited chapter, submitted***)

(b) Kim, M., Snowden, S. Ali, A., **Merkler, D.J.**, Ahmad, T., Westwood, S., Baird, A., Proitsi, P., Nevado-Holgado, A., Hye, A., Ashton, N., Bos, I., Vos, S., Vandenberghe, R., Teunissen, C., Scheltens, P., Gabel, S., Meersmans, K., Blin, O., Richardson, J., Sleegers, K., Bordet, R., Rami, L., Kettunen, P., Tsolaki, M., Verhey, F., Sala, I., Lléo, A., Peyratout, G., Tainta, M., Johannsen, P., Freund-Levi, Y., Frölich, L., Dobricic, V., Engelborghs, S., Frisoni, G., Molinuevo, L.J., Wallin, A., Popp, J., Martinez-Lage, P., Bertram, L., Barkhof, F., Zetterberg, H., Streffer, J., Visser, P.J., Lovestone, S., and Legido-Quigley, C.*(2019) Primary fatty amides in plasma associate to

brain amyloid burden, hippocampal volume and memory in the EMIF-AD biomarker discovery cohort. *Mol. Psychiatry* (***in revision, acceptance anticipated after addressing minor comments from reviewers***)

Publications from my *Independent* Career:

(85) Battistini, M.R., O'Flynn, B.G., Shoji, C., Suarez, G., Galloway, L.C., and **Merkler, D.J.**,* (2019) *Bm*-iAANAT3: Expression and Characterization of a Novel Arylalkylamine *N*-Acyltransferase from *Bombyx mori*. *Arch. Biochem. Biophys.* **661**, 107-116.

(84) **Merkler, D.J.***, and Leahy, J.W. (2018) Binding-Based Proteomic Profiling and the Fatty Acid Amides. *Trends in Res*. **1**: DOI: 10.15761/TR.1000120

(83) Anderson, R.L., Battistini, M.R., Wallis, D.J., Shoji, C., O'Flynn, B.G., Dillashaw, J.E., and **Merkler, D.J.*** (2018) *Bm*-iAANAT and Its Potential Role in Fatty Acid Amide Biosynthesis in *Bombyx mori*. *Prostaglandins Leukot. Essent. Fatty Acids*. **135**, 10-17.

(82) O'Flynn, B.G., Suarez, G., Hawley, A.J., and **Merkler, D.J.*** (2018) Insect Arylalkylamine *N*-Acetyltransferase: Mechanism and Role in Fatty Acid Amide Biosynthesis. *Front. Mol. Biosci*. **5**:66.

(81) O'Flynn, B.G., Hawley A.J., and **Merkler, D.J.*** (2018) Insect Arylalkylamine *N*-Acetyltransferases as Potential Targets for Novel Insecticide Design. *Biochem. Mol. Biol. J*. **4**:4 (doi: 10.21767/2471-8084).

(80) Handa, S., Dempsey, D.R., Ramamoorthy, D., Cook, N., Guida, W.C., Spradling, T.J., White, J.K., Woodcock, H.L., and **Merkler, D.J**.* (2018) Mechanistic Studies of 1-Deoxy-D-Xylulose-5-Phosphate Synthase from *Deinococcus radiodurans*. *Biochem. Mol. Biol. J*. **4**:2 (doi: 10.21767/2471-8084.100051).

(79) Dempsey, D.R., Nichols, D.A., Battistini, M.R., Pemberton, O., Rodriguez-Ospina, R., Zhang, X., Carpenter, A.-M., O'Flynn, B.G., Leahy, J.W., Kanwar, A., Lewandowski, E.M., Chen, Y.*, and **Merkler, D.J**.* (2017) Structural and Mechanistic Analysis of *Drosophila melanogaster* Agmatine *N*-Acetyltransferase, an Enzyme that Catalyzes the Formation of *N*-Acetylagmatine. *Sci. Rep*. **7**:13432.

(78) Anderson, R.L., and **Merkler, D.J.*** (2017) *N*-Fatty Acylglycines: Underappreciated Endocannabinoid-like Fatty Acid Amides? *J. Biol. Nat*. **8**, 156-165.

(77) Aboalroub, A.A., Bachman, A.B., Zhang, Z., Keramisanou, D., **Merkler, D.J.**, and Gelis, I.* (2017) Acetyl Group Coordinated Progression through the Catalytic Cycle of an Arylalkylamine *N*-Acetyltransferase. *PLoS One* **12**:e0177270.

(76) Jeffries, K.A., Dempsey, D.R., Farrell, E.K., Garbade, G.J., Gurina, T., Gruhonjic, I., and **Merkler, D.J.*** (2016) Glycine *N*-Acyltransferase Like 3 is Responsible for Long-chain *N*-Acylglycine Formation in $N_{18}TG_2$ Cells. *J. Lipid Res*. **57**, 781-790.

(75) White, J.K., Handa, S., Vankayala, S.L., **Merkler, D.J.**, and Woodcock, H.L.* (2016) Thiamin Diphosphate Activation in 1-Deoxy-D-Xylulose-5-Phosphate Synthase: Insights into the Mechanism and Underlying Intermolecular Interactions. *J. Phys. Chem. B.* **120**, 9922-9934.

(74) Jeffries, K.A., Dempsey, D.R., Farrell, E.K., Garbade, G.J., Gurina, T., Gruhonjic, I., and **Merkler, D.J.*** (2016) Glycine *N*-Acyltransferase Like 3 is Responsible for Long-chain *N*-Acylglycine Formation in $N_{18}TG_2$ Cells. *J. Lipid Res*. **57**, 781-790.

(73) Battistini, M.R., Shoji, C., Handa, S, Breydo, L., and **Merkler, D.J.*** (2016) Mechanistic Binding Insights for 1-Deoxy-D-Xylulose-5-Phosphate Synthase, the Enzyme Catalyzing the First reaction of Isoprenoid Biosynthesis in the Malaria-causing Protists, *Plasmodium falciparum* and *Plasmodium vivax*. *Protein Exp. Purif.* **120**, 16-27.

(72) Battistini, M.R., Mahajan, S., Diaz, D., Shaw, L.N., and **Merkler, D.J.*** (2016) A Facile, Microwave-Assisted Synthesis of an Adenosine-Ribose Probe for Binding-Based Profiling of Nucleoside and Nucelotide-Binding Proteins. *Curr. Microwave Chem*. **3**, 124-130.

(71) McIntyre, N.R., Lowe, E.W., Jr., Battistini, M.R., Leahy, J.W., and **Merkler, D.J.*** (2016) Inactivation of Peptidylglycine α-Hydroxylating Monooxygenase by Cinnamic Acid Analogs. *J. Enzyme Inhib. Med. Chem*. **31**, 551-562.

(70) Dempsey, D.R., Jeffries, K.A., Handa, S., Carpenter, A.-M., Rodriguez-Ospina, S., Breydo, L., and **Merkler, D.J**.* (2015) Mechanistic and Structural Analysis of a *Drosophila melanogaster* Enzyme, Arylalkylamine *N*-Acetyltransferase Like 7, an Enzyme That Catalyzes the Formation of *N*-Acetylarylalkylamides and *N*-Acetylhistamine. *Biochemistry* **54**, 2644-2658.

(69) Dempsey, D.R., Carpenter, A.-M., Rodriguez-Ospina, R., **Merkler, D.J.*** (2015) Probing the Chemical Mechanism and Critical Regulatory Amino Acid Residues of *Drosophila melanogaster* Arylalkylamine *N*-Acyltransferase Like 2. *Insect Biochem. Mol. Biol*. **66**, 1-12.

(68) Mahajan, S., Manetsch, R., **Merkler, D.J.**, and Stevens, S.M., Jr.* (2015) Synthesis and Evaluation of a Novel Adenosine-Ribose Probe for Global-Scale Profiling of Nucleoside and Nucleotide-Binding Proteins. *PLoS One* **10**:e0115644.

(67) Dempsey, D.R., Jeffries, K.A., Bond, J.D., Carpenter, A.-M., Rodriguez-Ospina, S., Breydo, L., Caswell, K.K., and **Merkler, D.J**.* (2014) Mechanistic and Structural Analysis of *Drosophila melanogaster* Arylalkylamine *N*-Acetyltransferases. *Biochemistry* **53**, 7777-7793.

(66) Jeffries, K.A., Dempsey, D.R., Behari, A.L., Anderson, R.L., and **Merkler, D.J**.* (2014) *Drosophila melanogaster* as a Model System to Study Long-chain Fatty Acid Amide Metabolism. *FEBS Lett*. **288**, 1596-1602.

(65) Dempsey, D.R., Jeffries, K.A., Anderson, R.L., Carpenter, A.-M., Rodriguez-Opsina, S., and **Merkler, D.J.*** (2014) Identification of an Arylalkylamine *N*-Acyltransferase from *Drosophila melanogaster* that Catalyzes the Formation of Long-chain *N*-Acylserotonins. *FEBS Lett*. **588**, 594-599.

(64) Dempsey, D.R., Bond, J.D., Carpenter, A.-M., Rodriguez-Opsina, S., and **Merkler, D.J.*** (2014) Expression, Purification, and Characterization of Mouse Glycine *N*-Acyltransferase in *Escherichia coli*. *Protein Exp. Purif.* **97**, 23-28.

(62) Waluk, D.P., Battistini, M.R., Dempsey, D.R., Farrell, E.K., Jeffries, K.A., Mitchell, P., Hernandez, L.W., McBride, J.C., **Merkler, D.J.**, and Hunt, M.C.* (2014) Mammalian Fatty Acid Amides of the Brain and CNS. ***In*** Omega-3 Fatty Acids in Brain and Neurological Health (Watson, R.R., and DeMeester, F, Eds.), pp. 87-107, Academic Press, London.

(61) Ramamoorthy, D., Handa, S., **Merkler, D.J.**, and Guida, W.C.* (2014) *Plasmodium vivax* 1-Deoxy-D-Xylulose-5-Phosphate Synthase: Homology Modeling, Domain Swapping, and Virtual Screening. *J. Data Mining Genomics Proteomics* **S1**:003 (doi: 10.4172/2153-0602).

(60) Handa, S., Ramamoorthy, D., Spradling, T.J., Guida, W.C., Adams, J.H., Bendinskas, K.G., and **Merkler, D.J.*** (2013) Production of Recombinant 1-Deoxy-D-Xylulose-5-Phosphate Synthase from *Plasmodium vivax* in *Escherichia coli*. *FEBS Open Bio* **3**, 124-129.

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(56) An, Z., Chen, Y., Koomen, J. M., and **Merkler, D. J**.* (2012) A Mass Spectrometry-Based Method to Screen for α-Amidated Peptides. *Proteomics* **12**, 173-182.

(55) Handa, S., Spradling, T.J., Dempsey, D.R., and Merkler, D. J. (2012) Production of the Catalytic Core of Human Peptidylglycine α-Hydroxylating Monooxygenase (PHMcc) in *Escherichia coli*. *Protein Exp. Purif.* **84**, 9-13.

(54) Ivkovic, M., Dempsey, D.R., Handa, S., Hilton, J.H., Lowe, E.W. Jr., and **Merkler, D. J.*** (2011) *N*-Acylethanolamines as Novel Alcohol Dehydrogenase 3 Substrates. *Arch. Biochem. Biophys*. **506**, 157-164.

(53) McIntyre, N.R., Lowe, E.W., Jr., Belof, J.L., Ivkovic, M., Shafer, J., Space, B., and **Merkler, D.J.*** (2010) Evidence for Substrate Preorganization in the Peptidylglycine α-Amidating Monooxygenase Reaction Describing the Contribution of Ground State Structure to Hydrogen Tunneling. *J. Am. Chem. Soc*. **132**, 16393-16402.

(52) McIntyre, N.R., Lowe, E.W., Jr., and **Merkler, D.J.*** (2009) The Imino-Oxy Dealkylation as Evidence for an Inner-Sphere Alcohol Intermediate in the Reaction Catalyzed by Peptidylglycine α-Amidating Hydroxylase (PHM). *J. Am. Chem. Soc*. **131**, 10308-10319.

(51) **Merkler, D. J.,*** Asser, A.S., Baumgart L.E., Carballo, N., Baumgart L.E., Carpenter S.E., Chew, G.H., Cosner, C.C., Dusi, J., Galloway, L.C., Lowe A.B., Lowe, E.W., Jr., King, L., 3rd, Kendig, R.D., Kline, P.C., Malka, R., Merkler, K.A., McIntyre, N.R., Romero, M., Wilcox, B.J., and Owen, T.C. (2008) Substituted Hippurates and Hippurate Analogs as Substrates and Inhibitors of Peptidylglycine α-Hydroxylating Monooxygenase. *Bioorg. Med. Chem*. **16**, 10061-10074.

(50) Farrell, E.K., and **Merkler, D.J.*** (2008) The Biosynthesis, Degradation and Pharmacological Importance of Fatty Acid Amides. *Drug Discov. Today* **13**, 558-568.

(49) McIntyre, N.R., Lowe, E. W. Jr., Chew, G.H., Owen, T.C., and **Merkler, D. J.*** (2006) Thiorphan, Tiopronin, and Related Analogs as Substrates and Inhibitors of Peptidylglycine α-Amidating Monooxygenase (PAM). *FEBS Lett.* **580**, 521-532.

(48) Weiss, S.T., McIntyre, N.R., McLaughlin, M.L., and **Merkler D.J.*** (2006) The Development of Molecular Clamps as Drugs. *Drug Discov. Today* **11**, 819-824.

(47) Chew, G.H., Galloway, L.C., McIntyre, N.R., Schroder, L.A., Richards, K.M., Miller, S.A., Wright, D.W., and **Merkler, D.J.*** (2005) Ubiquitin and Ubiquitin-derived Peptides as Substrates for Peptidylglycine α-Amidating Monooxygenase. *FEBS Lett*. **579**, 4678-4684.

(46) Shonsey, E.M., Sfakianos, M., Johnson, M., He, D., Falany, C.N., Falany, J., **Merkler D.J.**, and Barnes, S.* (2005) Bile Acid coenzyme A:Amino Acid *N*-Acyltransferase in the Amino Acid Conjugation of Bile Acids. *Methods Enzymol*. **400**, 374-394.

(45) **Merkler, D.J.,*** Chew, G.H., Gee, A.J., Merkler, K.A., Sorondo, J.-P.O., and Johnson, M.E.* (2004) Oleic Acid Derived Metabolites in Mouse Neuroblastoma $N_{18}TG_2$ Cells. *Biochemistry* **43**, 12667-12674.

(44) Francisco, W.A., Wille, G., Smith, A.J., **Merkler, D.J.**, and Klinman, J.P.* (2004) Investigation of the Pathway for Inter-Copper Electron Transfer in Peptidylglycine α-Amidating Monooxygenase. *J. Am. Chem. Soc*. **126**, 13168-13169.

(43) Owen, T.C.,* and **Merkler, D.J.** (2004) A New Proposal for the Mechanism of Glycine Hydroxylation as Catalyzed by Peptidylglycine α-Hydroxylating Monooxygenase. *Med. Hypothesis* **62**, 392-400.

(42) Carpenter, T., Poore, D.D., Gee, A.J., Deshpande, P., **Merkler, D.J.**, and Johnson, M.E.* (2004) The Reverse Phase HPLC Separation of *N*-Acylglycines and Primary Fatty Acid Amides. *J. Chromatogr. B*. **809**, 15-21.

(41) Miller, L.A., Baumgart, L.E., Chew, G.H., deLong, M.A., Galloway, L.C., Jung, K.W., Merkler, K.A., Nagle, A.S., Poore, D.D., Yoon, C.H., and **Merkler, D.J.*** (2003) Glutathione, S-Alkylated Glutathiones, and LTC_4 as Substrates for Peptidylglycine α-Amidating Monooxygenase. *Arch. Biochem. Biophys*. **412**, 3-12.

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(38) DeBlassio, J.L., deLong, M.A., Glufke, U., Kulathila, R., Merkler, K.A., Vederas, J.C., and **Merkler, D.J.*** (2000) The Amidation of Salicyluric Acid and Gentisuric Acid. A Possible Role for Peptidylglycine α-Amidating Monooxygenase (PAM) in the Metabolism of Aspirin. *Arch. Biochem. Biophys*. **383**, 46-55.

(37) King, L., III, Barnes, S., Glufke, U., Henz, M.E., Kirk, M., Merkler, K.A., Vederas, J.C., Wilcox, B.J., and **Merkler, D.J.*** (2000) The Enzymatic Formation of Novel Bile Acid Primary Amides. *Arch. Biochem. Biophys*. **374**, 107-117.

(36) Wilcox, B.J., Ritenour-Rodgers, K.J., Asser, A.S., Baumgart, L.E., Baumgart, M.A., Boger, D.L., DeBlassio, J.L., deLong, M.A., Glufke, U., Henz, M.E., King, L., III, Merkler, K.A., Patterson, J.E., Robleski, J.J., Vederas, J.C., and **Merkler, D.J.*** (1999) *N*-Acylglycine Amidation: Implications for the Biosynthesis of Fatty Acid Primary Amides. *Biochemistry* **38**, 3235-3245.

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(28) **Merkler, D.J.,*** Kulathila, R., and Ash, D.E. (1995) The Inactivation of Bifunctional Peptidylglycine α-Amidating Enzyme by Benzylhydrazine: Evidence that the Two Enzyme-bound Copper Atoms are Nonequivalent. *Arch. Biochem. Biophys*. **317**, 93-102.

(27) **Merkler, D.J.,*** Kulathila, R., Francisco, W.A., Bell, J., and Ash, D.E. (1995) The Irreversible Inactivation of Two Copper-Dependent Monooxygenases by Sulfite: Bifunctional Peptidylglycine α-Amidating Enzyme and Dopamine β-Monooxygenase. *FEBS Lett.* **366**, 165-169.

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Publications from my *Postdoctoral Fellowship Experience*:

(14) Schramm, V.L.,* Horenstein, B.A., Bagdassarian, C.K., Schwartz, S.D., Berti, P. J., Rising, K.A., Scheuring, J., Kline, P.C., Parkin, D.W., and **Merkler, D.J.** (1996) Enzymatic Transition States and Inhibitor Design from Principles of Classical and Quantum Chemistry. *Int. J. Quant. Chem*. **23**, 81-89.

(13) **Merkler, D.J.**, Kline, P.C., Weiss, P., and Schramm, V.L.* (1993) Transition State Analysis of Yeast AMP Deaminase. *Biochemistry* **32**, 12993-13001.

(12) **Merkler, D.J.**, and Schramm, V.L.* (1993) Catalytic Mechanism of Yeast AMP Deaminase. Zinc Content, Substrate Specificity, pH Studies, and Solvent Isotope Effects. *Biochemistry* **32**, 5792-5799.

(11) Sollitti, P., **Merkler, D.J.**, Estupiñán, B., and Schramm, V.L.* (1993) Yeast AMP Deaminase. Catalytic Activity in *Schizosaccharomyces pombe* and Chromosomal Location in *Saccharomyces cerevisiae*. *J. Biol. Chem.* **268**, 4549-4555.

(10) **Merkler, D.J.**, Brenowitz, M., and Schramm, V.L. * (1990) The Rate Constant Describing Slow-Onset Inhibition of Yeast AMP Deaminase by Coformycin Analogues is Independent Structure. Biochemistry 29, 8358-8364.

(9) **Merkler, D.J.,** and Schramm, V.L.* (1990) Catalytic and Regulatory Site Composition of Yeast AMP Deaminase by Comparative Binding and Rate Studies: Resolution of the Cooperative Mechanism. *J. Biol. Chem.* **265**, 4420-4426.

(8) **Merkler, D.J.**, Wali, A.S., Taylor, J., and Schramm, V.L.* (1989) AMP Deaminase from Yeast: Role in AMP Degradation, Large Scale Purification, and Properties of the Native and Proteolyzed Enzyme. *J. Biol. Chem.* **264**, 21422-21430.

(7) **Merkler, D.J.**, and Schramm, V.L.* (1987) Method for the Enzymatic 5'-Monophosphorylation of Nucleosides. *Anal. Biochem.* **107**, 148-153.

Publications from my *Graduate School Experience*:

(6) **Merkler, D.J.**, Srikumar, K., Marchese-Ragona, S.P., and Wedler, F.C.* (1988) Aggregation and Thermo-inactivation of Glutamine Synthetase from an Extreme Thermophile, *Bacillus caldolyticus*. *Biochim. Biophys. Acta* **982**, 101-114.

(5) **Merkler, D.J.**, Srikumar, K., and Wedler, F.C.* (1987) Synergistic Ligand Protection and Intermediates in the Denaturation of Extremely Thermophilic Glutamine Synthetase. *Biochemistry* **26**, 7805-7813.

(4) Wedler, F.C.,* and **Merkler, D.J.** (1985) Thermostabilization of *Bacillus caldolyticus* Glutamine Synthetase by Intrinsic and Extrinsic Factors. *Curr. Top. Cell. Reg.* **26**, 263-280.

(3) **Merkler, D. J.**, Farrington, G.K., and Wedler, F.C. (1981) Protein Thermostability: Correlations between Calculated Macroscopic Parameters and Growth Temperature for Closely Related Thermophilic and Mesophilic *Bacilli*. *Int. J. Pept. Protein Res.* **18**, 430-442.

(2) Wedler, F.C.,* Shreve, D.S., Fisher, K.E., and **Merkler, D.J.** (1981) Complementarity of Regulation for the Two Glutamine Synthetases from *Bacillus caldolyticus*, an Extreme Thermophile. *Arch. Biochem. Biophys.* **211**, 276-287.

Publications from my *Undergraduate Research Experience*:

(1) Karpel, R.L.,* **Merkler, D.J.**, Flowers, B.K., and Delahunty, M.D. (1981) Involvement of Basic Amino Acids in the Activity of a Nucleic Acid Helix-Destabilizing Protein. *Biochim. Biophys. Acta* **654**, 42-52.

Funding History

(31) **Agency:** National Institutes of Health - AREA (R15-GM107864-01A1)
Status: Completed
Funding Period: 1/15 to 12/18
Role in Project: PI
Title: Subtraction Lipidomics
Total Amount (direct and indirect): $325,722 for 4-yr. period

(30) **Agency:** National Institutes of Health (R15-GM107864-01A1-S1)
Status: Completed
Funding Period: 1/17 to 12/18
Role in Project: PI/Mentor
Title: Subtraction Lipidomics - Minority Supplement to Gabriela Suarez
Total Amount (direct and indirect): $60,268 for 2-yr. period

(29) **Agency:** Creative Scholarship Grant, USF
Status: Complete
Funding Period: 5/17 to 5/18
Role in Project: PI
Title: Reagents for the Interrogation of Fatty Acid Amide Signaling Plathways
Total Amount (direct only): $9,860 for 1-yr. period

(28) **Agency:** National Institutes of Health (R21-AA025183)
Status: Unclear*
Funding Period: 9/17 to 8/19
Role in Project: 8% co-PI, PI is Dr. Stanley Stevens (Department of Cell Biology, Microbiology, and Molecular Biology, USF)
Title: Role of Methylation in Ethanol-Induced Microglial Activation
Total Award (direct and indirect): $421,298
Merkler Lab Amount (direct & indirect): $30,000 for 3 yr. period
*Dr. Stevens left USF in Dec. 2017 and this joint application was never discussed with me. I have no idea of the outcome of this project. To be honest, it will be very hard for me to contribute to this application without Dr. Steven's presence at USF.

(27) **Agency:** National Institutes of Health (R03-DA034323-02)
Status: Completed
Funding Period: 8/12 to 7/14
Role in Project: PI
Title: Glycine *N*-Acyltransferases
Total Amount (direct and indirect): $138,749 for 2-yr. period

(26) **Agency:** College of Arts & Sciences - CAS Research & Scholarship Grant, USF
Status: Completed
Funding Period: 1/13 to 12/13
Role in Project: PI
Title: Fatty Acid Amide Hydrolase and the Fatty Acid Amidome
Total Awarded (direct only): $1,500 for 1-yr. period

(25) **Agency:** Bankhead-Coley Biomedical Research Program, Florida Department of Health (08-BN04)
Status: Completed
Funding Period: 7/08 to 6/12
Role in Project: co-PI (40%), PI was Dr. Roman Manetsch (Department of Chemistry, USF)
Title: Chemical Tools for Proteomic Profiling
Total Amount (direct and indirect): $375,000 for 4-yr. period
Merkler Lab Amount (direct & indirect): $150,000 for 4-yr. period

(24) **Agency:** College of Arts & Sciences (CAS) Faculty International Travel Award
Status: Complete
Funding Period: September 2012
Role in Project: PI and Conference Attendee
Total Amount: $2,500
These funds were to partially support my attendance at the 22nd IUBMB-37th FEBS Congress, Seville, Spain (4-9 September 2012)

(33) **Agency:** BITT Seed Grant, USF
Status: Completed
Funding Period: 5/09 to 4/10
Role in Project: PI (87%), co-PIs were Dr. James Garey (10%, Department of Cell Biology, Microbiology, and Molecular Biology, USF) and Dr. John Koomen (3%, Moffitt Cancer and Research Institute)
Title: Long Chain *N*-Acylglycine Metabolism in Mammalian Central Nervous System
Total Amount (direct): $56,000 for 1-yr. period
Merkler Lab Amount (direct & indirect): $50,000 for 1-yr. period

(32) **Agency:** BITT Seed Grant, USF
Status: Completed
Funding Period: 1/09 to 12/10
Role in Project: PI (50%), co-PIs were Dr. Wayne Guida (45%, Department of Chemistry, USF) and Dr. Dennis Kyle (5%, College of Public Health, USF)
Title: Long Chain *N*-Acylglycine Metabolism in Mammalian Central Nervous System
Total Amount (direct only): $60,000 for 1-yr. period
Merkler Lab Amount (direct only): $30,000 for 1-yr. period

(31) **Agency:** BITT Seed Grant, USF
Status: Completed
Funding Period: 5/08 to 4/09
Role in Project: PI (50%), co-PIs were Dr. Roman Manetsch (47%, Department of Chemistry, USF) and Dr. John Koomen (3%, Moffitt Cancer and Research Institute)
Title: Adenylomics
Total Amount (direct only): $75,000 for 1-yr. period
Merkler Lab Amount (direct only): $37,500 for 1-yr. period

(30) **Agency:** Johnnie B. Byrd, Sr. Alzheimer's Center & Research Institute
Status: Completed
Funding Period: 9/08 to 9/09
Role in Project: co-PI (50%), PI was Dr. Roman Manetsch (Department of Chemistry, USF)
Title: Adenylomics and Caffeinylomics
Total Amount (direct and indirect): $78,047 for 1-yr. period
Total Amount (direct and indirect) for Merkler lab: $35,000 for 1-yr. period

(29) **Agency:** National Institutes of Health - Phase 2 SBIR (R44-DK063812
Current Status: Completed
Requested Funding Period: 9/07 to 8/08
Role in Project: co-PI (30%), PI was Angelo Consalvo (Unigene Laboratories, Inc.)
Title: Identification of Novel α-Amidated Peptide Hormones
Total Amount (direct and indirect): $834,984 for 2-yr. period
Merkler Lab Amount (direct & indirect): $222,584 for 2-yr. period

(28) **Agency:** National Institutes of Health – AREA (R15-GM073659)
Status: Completed
Funding Period: 4/05 to 3/08
Role in Project: PI
Title: Enzymatic Cleavage of the C-N Bond in Glycine
Total Amount (direct and indirect): $217,500 for 3-yr. period

(27) **Agency:** National Institutes of Health (R03-CA110084)
Status: Completed
Funding Period: 5/05 to 4/07
Role in Project: PI
Title: Proteome Profiling Probes for CoA-Dependent Proteins
Total Amount (direct and indirect): $145,000 for 2-yr. period

(26) **Agency:** National Institutes of Health (R21-GM072772)
Status: Completed
Funding Period: 2/05 to 1/07
Role in Project: co-PI (50%), PI was Dr. Mark McLaughlin (Department of Chemistry, USF)
Title: A Molecular Clamp that Inhibits CRF Amidation
Total Amount (direct and indirect): $188,500 for 2-yr. period
Merkler Lab Amount (direct & indirect): $94,250 for 2-yr. period

(25) **Agency:** National Institutes of Health – AREA (R15-GM067257)
Status: Completed
Funding Period: 7/02 to 6/05
Role in Project: PI
Title: Anti-PAM Drugs for the Treatment of Cancer
Total Amount (direct and indirect): $145,000 for 3-yr. period

(24) **Agency:** National Institutes of Health - Phase 1 SBIR (R43-DK063812)
Status: Complete
Funding Period: 4/03 to 3/05
Role in Project: co-PI (30%), PI was Angelo Consalvo (Unigene Laboratories, Inc.)
Title: Identification of Novel α-Amidated Peptide Hormones
Total Amount (direct and indirect): $123,438 for 2-yr. period
Merkler Lab Amount (direct & indirect): $33,000 for 2-yr. period

(23) **Agency:** National Institutes of Health – AREA, R15-GM059050
Status: Completed
Funding Period: 4/99 to 3/03
Role in Project: PI
Title: The Biosynthesis of Oleamide and Other Fatty Acid Amides
Total Amount (direct and indirect): $104,330 for 4-yr. period

(22) **Agency:** Eppley Foundation for Research, Inc.
Status: Complete
Funding Period: 1/03 to 1/04
Role in Project: PI
Title: Radical Formation during PAM Catalysis
Total Amount (direct and indirect): $15,328 for 1-yr. period

(21) **Agency:** Established Researcher and Creative Scholarship Grant, USF
Status: Complete
Funding Period: 1/03 to 12/03
Role in Project: PI
Title: Novel Mammalian Neurochemicals
Total Amount (direct only): $5,000 for 1-yr. period

(20) **Agency:** Wendy Will Case Cancer Fund, Inc.
Status: Complete
Funding Period: 9/02 to 8/03
Role in Project: PI
Title: *S*-[Phenyl(thioacyl)]thioglycolates as Novel Anticancer Chemotherapeutics
Total Amount (direct only): $25,000 for 1-yr. period

(19) **Agency:** Gustavus & Louise Pfeiffer Research Foundation
Status: Complete
Funding Period: 7/01 to 6/02
Role in Project: PI
Title: Novel Anti-PAM Drugs for the Treatment of Prostate and Breast Cancer
Total Amount (direct only): $65,600 for 1-yr. period

(18) **Agency:** Alpha Research Foundation, Inc.
Status: Complete
Funding Period: 1/02 to 12/02
Role in Project: PI
Title: The Biosynthesis of Novel Lipid Amides
Total Amount (direct only): $5,000 for 1-yr. period

(17) **Agency:** Milheim Foundation for Cancer Research
Status: Completed
Funding Period: 5/01 to 4/02
Role in Project: PI
Title: Defeating Cancer by Attacking the Supply Lines
Total Amount (direct only): $13,675 for 1-yr. period

(16) **Agency:** Florida High Technology Matching Grant Program
Status: Complete
Funding Period: 4/01 to 3/02
Role in Project: co-PI (50%), PI was Dr. Mike Zaworotko (Department of Chemistry, USF)
Title: Biocomposite Materials by Design
Total Amount (direct only): $20,000 for 1-yr. period
Merkler Lab Amount (direct only): $10,000 for 1-yr. period

(15) **Agency:** Goody Two Shoes Foundation, Inc.
Status: Complete
Funding Period: 6/01 – 12/01
Role in Project: PI
Title: Vitamin B_3 Metabolism in Man
Total Amount (direct only): $5,011 for 6-month period

(14) **Agency:** Institute for Biomolecular Science, USF
Status: Complete
Funding Period: Summer 2000
Role in Project: PI/Mentor– student supervisor
Title: Summer undergraduate research fellowship
Total Amount (direct only): $2,500

(13) **Agency:** USF Faculty International Travel Award
Status: Complete
Funding Period: June 2000
Role in Project: PI and Conference Attendee
Total Amount: $1,500
These funds were to partially support my attendance at the 11th International Conference on Advances in Prostaglandin and Leukotrience Research: Basic Science and Clinical Applications, 4-8 June 2000 in Florence, Italy.

(12) **Agency:** Creative Scholarship Grant, University of South Florida
Status: Complete
Funding Period: 1/2000 to 12/2000
Role in Project: PI
Title: A Novel Target for the Treatment of Neurological Dysfunction
Total Amount (direct only): $7,500 for 1-yr. period

(11) **Agency:** Laboratory for Education and Research in Neuroscience (L.E.A.R.N.)
Status: Complete
Funding Period: 3/1999 to 2/2000
Role in Project: PI
Title: Cell Signaling in Man: A Novel Neuroactive Lipid
Total Amount (direct only): $10,000 for 1-yr. period

(10) **Agency:** Duquesne University Faculty Development Fund
Status: Complete
Funding Period: 1/99 to 12/99
Role in Project: PI
Title: The Biosynthesis of α-Amidated Peptide Hormones in Alfalfa
Total Amount (direct only): $4,600 for 1-yr. period

(9) **Agency:** Whitehall Foundation, Inc. - Grant-in-Aid (SA97-04)
Status: Complete
Funding Period: 1/98 to 12/98
Role in Project: PI
Title: Novel Human Neuromodulators and Their Biosynthesis
Total Amount (direct only): $20,000 for 1-yr. period

(8) **Agency:** Duquesne University Summer Undergraduate Program
Status: Complete
Funding Period: Summer 1999
Role in Project: PI/Mentor– student supervisor
Title: Summer undergraduate research fellowship
Total Amount (direct only): $2,700

(7) **Agency:** Duquesne University Summer Undergraduate Program
Status: Complete
Funding Period: Summer 1998
Role in Project: PI/Mentor– student supervisor
Title: Summer undergraduate research fellowship for two students
Total Amount (direct only): $5,000

(6) **Agency:** Duquesne University Faculty Development Fund
Status: Complete
Funding Period: 1/97 to 12/97
Role in Project: PI
Title: Mechanistic and Metabolic Studies of Novel Substrates for Recombinant Peptidylglycine α-Amidating Enzyme (PAM)
Total Amount (direct only): $5,000 for 1-yr. period

(5) **Agency:** Human Growth Foundation, Inc.
Status: Complete
Funding Period: 1/96 to 12/96
Role in Project: PI
Title: Development of a Novel Catalyst for the *In Vitro* Production of Growth Hormone Releasing Factor
Total Amount (direct only): $7,500 for 1-yr. period

(3) **Agency:** Hunkele Foundation
Status: Complete
Funding Period: 1/96 to 12/96
Role in Project: PI
Title: Amidation of Peptide Hormones and Cancer: Implications for Early Diagnosis and Treatment
Total Amount (direct only): $7,929 for 1-yr. period

(4) **Agency:** Bayer Corporation (Pittsburgh, PA)
Status: Complete
Funding Period: 1/96 to 12/96
Role in Project: PI
Title: The Sulfite-Mediated Inactivation of Eukaryotic Tyrosinase
Total Amount (direct only): $2,500 for 1-yr. period

(1) **Agency:** National Institutes of Health – Postdoctoral Fellowship (F32-GM010599)
Status: Complete
Funding Period: 7/85 – 5/87
Role in Project: Postdoctoral Fellow (Sponsor: Dr. Vern L. Schramm)
Title: Structure and Mechanism of Yeast AMP Deaminase
Total Amount (direct and indirect): $64,000 for 3-yr. period