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Education:

Assistant Professor: Eastern Washington University, 2007-Present

Post Doctoral Research: Shafizadeh Rocky Mountain Center for Wood and Carbohydrate Chemistry: The University of Montana, Missoula, MT, 2005-2007

- Research director: Professor Donald E. Kiely, Director.
 - o Carbohydrate Chemistry, Polymer Chemistry and Organic Synthesis, Cell Targeted, Non-Viral Drug and Gene Delivery, Micellar Electrokinetic Chromatography and Polymeric Quaternary Biocides

Post Doctoral Research: Human BioMolecular Research Institute, San Diego, CA 2002-2005

- Research director: John R. Cashman, Director.
 - o Synthetic Medicinal Chemistry, Cytochrome P-450s, Drug Metabolism and Disposition, Pharmacokinetics and Nicotinic Acetylcholine Receptors

Ph. D., Chemistry (Synthetic / Medicinal Chemistry), University of Montana, Missoula, MT, 2002.

- Research director: Professor Charles M. Thompson.
 - o Synthesis and Biological Evaluation of *trans*-3,4-Conformationally Restricted Glutamic Acid Analogues

B. S., Chemistry, Central Washington University, Ellensburg, WA, 1997.

- Research director: Professor John M. Gerdes.
 - o Synthesis of Serotonin Uptake Inhibitors: Quinolynoylphenylalkylamines

Research Interests:

Synthetic Medicinal Chemistry, Neuroscience, Drug Metabolism and Disposition and Pharmacokinetics; Carbohydrate and Polymer Chemistry for the development of: Cell Targeted, Non-Viral Drug and Gene Delivery Agents and Polymeric Pseudostationary Phases for Micellar Electrokinetic Chromatography.

Publications:

Pinto, J. T., Khomenko, T., Szabo, S., McLaren, G. D., **Denton, T. T.**, Krasnikov, B. F., Jeitner, T. M., Cooper, A. J. L. Measurement of sulfur-containing compounds involved in the metabolism and transport of cysteamine and cystamine. Regional differences in cerebral metabolism. *J Chromatogr B Analyt Technol Biomed Life Sci.* **2009**, 877(28), 3434-3441.

- Denton, T. T.;** Joyce, A. S.; Kiely, D. E. Preparation of 3,3'-Diamino-(*N*-Alkyl)dipropylamines by the Catalytic Hydrogenation of *N,N*-Bis(cyanoethyl)alkylamines. *J. Org. Chem.* **2007**, *72*, 4997 - 5000.
- Denton, T. T.;** Yano, J. K.; Cerny, M. A.; Zhang, X.; Johnson, E. F.; Cashman, J. R. Synthetic Inhibitors of Cytochrome P-450A6: Inhibitory Activity, Difference Spectra, Mechanism of Inhibition and Protein Co-Crystallization. *J. Med. Chem.* **2006**, *49*, 6987-7001
- Santos, S. S.; Gibson, G. E.; Cooper, A. J. L.; **Denton, T. T.;** Thompson, C. M.; Bunik, V. I.; Alves, P. M.; Sonnewald, U. Inhibitors of the Alpha-ketoglutarate Dehydrogenase Complex Alter [1-(13)C]Glucose and [U-(13)C]Glutamate Metabolism in Cerebellar Granule Neurons. *J. Neurosci. Res.* **2006**, *83*, 450-458.
- Denton, T. T.;** Zhang, X.; Cashman, J. R. 5-Substituted, 6-Substituted, and Unsubstituted 3-Heteroaromatic Pyridine Analogues of Nicotine as Selective Inhibitors of Cytochrome P-450 2A6. *J. Med. Chem.* **2005**, *48*, 224-239.
- Bunik, V. I.; **Denton, T. T.;** Xu, H.; Thompson, C. M.; Cooper, A. J. L.; Gibson, G. E. Phosphonate Analogues of Alpha-ketoglutarate Inhibit the Activity of the Alpha-ketoglutarate Dehydrogenase Complex Isolated from Brain and in Cultured Cells. *Biochemistry* **2005**, *44*, 10552-10561.
- Denton, T. T.;** Zhang, X.; Cashman, J. R. Nicotine-related Alkaloids and Metabolites as Inhibitors of Human Cytochrome P-450 2A6. *Biochem. Pharmacol.* **2004**, *67*, 751-756.
- Denton, T.;** Seib, T.; Bridges, R.; Thompson, C. Synthesis and Preliminary Evaluation of *trans*-3,4-Conformationally-Restricted Glutamate and Pyroglutamate Analogues as Novel EAAT2 Inhibitors. *Bioorg. Med. Chem. Lett.* **2002**, *12*, 3209-3213.
- Denton, T. T.;** Thompson, C. M.; Cooper, A. J. L. Analysis of Conformationally Restricted Alpha-ketoglutarate Analogues as Substrates of Dehydrogenases and Aminotransferases. *Anal. Biochem.* **2001**, *298*, 265-274.
- Denton, T. T.;** Hardcastle, K. I.; Kiely, D. E. d-Glucaric Acid: X-Ray Crystal Structure and Characterization. *Angew. Chem., Int. Ed.* In Preparation.
- Denton, T. T.** and Kiely, D. E. Recent Advances in the Preparation of High Molecular Weight Poly(4-Alkyl-4-Azaheptamethylene-d-Aldaramides). *Macromol. Rapid Commun.* In Preparation.
- Denton, T. T.** and Kiely, D. E. Gas-Chromatography-Mass-Spectrometric Analysis of the Nitric Acid Oxidation of d-Glucose: By-Product Analysis and Elucidation of the Decomposition Mechanism. *J. Carb. Chem.* In Preparation.
- Denton, T. T.;** Bouschor, A.; Kiely, D. E.; Palmer, C. P. Tetrasodium 2,3,4,5-*O*-Sulfonato-Poly(4-Octadecyl-4-Azaheptamethylene-d-Galactaramide): a Versatile, Carbohydrate-Based Pseudostationary Phase for Electrokinetic Chromatography. *Electrophoresis.* In Preparation.
- Smith, T. N.; **Denton, T. T.;** Kiely, D. E. Isolation of Open Chain Glucaric Acid and Subsequent Formation of Dialkylammonium Salts with Good Stoichiometric Control for the Synthesis of High Molecular Weight Hydroxylated Nylons. *Biomacromolecules.* In Preparation.

Kiely, D. E.; Hash, K.; Smith, T. N.; Davey, C.; Mills, H.; Williams, H.; **Denton, T. T.** Nitric Acid Oxidation of d-Glucose to d-Glucaric Acid: Improved Process and Analytical Assessment. *J. Agric. Food Chem.* In Preparation

Presentations:

First Prize Winner, 2009 – EWU Symposium for Research and Creative Works: Alicia V. Caldejon and Travis T. Denton “Synthesis of a Biodegradable Non-viral Gene Delivery Agent for Use in Chemotherapeutics.”

Second Prize Winner, 2009 – EWU Symposium for Research and Creative Works: Alex Pentecost and Travis T. Denton “Synthesis of Polymeric Quaternary Biocides for Medicinal Applications”

2009 – National Conference for Undergraduate Research: Alicia V. Caldejon and Travis T. Denton “Synthesis of a Biodegradable Non-viral Gene Delivery Agent for Use in Chemotherapeutics.”

2009 – National Conference for Undergraduate Research: Alex Pentecost and Travis T. Denton “Synthesis of Polymeric Quaternary Biocides for Medicinal Applications”

2009 – EWU Symposium for Research and Creative Works: Whitney R. Pinches and Travis T. Denton. “Examination of Polyhydroxypolyamines as Non-Viral Gene Delivery Agents in Mammalian Cells”

2009 – EWU Symposium for Research and Creative Works: Chris Evans and Travis T. Denton. “Sugar Derived Polymeric Quaternary Amphiphiles as Anti-Bacterial Agents”

2009 – EWU Symposium for Research and Creative Works: Steven W. McDaniel, Marcus R. Annable and Travis T. Denton “A Medicinal Chemical Investigation Towards the Development of the Next Generation of Nicotine Replacement Therapy

2009 – EWU Symposium for Research and Creative Works: Steven W. McDaniel, Marcus R. Annable and Travis T. Denton “Toward the Synthesis of Novel, Biodegradable, Absorbent, Polymeric Hydrogels Using Varied Chain Length Diamines, Polyamine Crosslinkers and Sugar-based Diesters”

First Prize Winner, 2008 – EWU Symposium for Research and Creative Works: Mathew M. Duda, Daniel L. Dodge, Whitney R. Pinches and Travis T. Denton ” Development of Novel Compounds for the Treatment of Alzheimer's Disease: Synthesis of 2-(pyridin-3-yl)-1H-benzo[d]imidazole Analogues of GTS-21, a Potent and Selective $\alpha 7$ Nicotinic Acetylcholine Receptor Ligand.”

Second Prize Winner, 2008 – EWU Symposium for Research and Creative Works: Daniel L. Dodge, Alex Pentecost and Travis T. Denton ”Starting Materials for the Construction of Structurally Constrained Analogues of the Neurotransmitter Glutamate. Synthesis of (E)-Ethyl 4-(diethoxyphosphoryl)-4-oxobut-2-enoate and Evaluation of its Reactivity as a Dienophile in the Diels-Alder Reaction.”

2008 – EWU Symposium for Research and Creative Works: Whitney R. Pinches, Tyler Smith, Donald E. Kiely and Travis T. Denton. “Towards Tumor Cell Targeted, Non-Viral Gene Delivery Agents. Preparation of Polyhydroxypolyamines by the BH_3 -THF Mediated Reduction of Polyhydroxypolyamides.”

2008 – EWU Symposium for Research and Creative Works: Elmira Peyman and Travis T. Denton. “Towards the First Completely Biodegradable Baby Diaper. Preparation of $N^1, N^{1'}$ -(alkane-1,4-

diyl)bis(N^1 -(3-aminopropyl)propane-1,3-diamines) by the Catalytic Hydrogenation of 3,3',3'',3'''-(alkane-1,4-diylbis(azanetriyl))tetrapropanenitriles.”

2008 – ACS Northwest and Rocky Mountain Regional Meeting: Whitney R. Pinches, Tyler Smith, Donald E. Kiely and Travis T. Denton. “Towards Tumor Cell Targeted, Non-Viral Gene Delivery Agents. Preparation of Polyhydroxypolyamines by the BH_3 -THF Mediated Reduction of Polyhydroxypolyamides.”

2008 – ACS Northwest and Rocky Mountain Regional Meeting: Mathew M. Duda, Daniel L. Dodge, Whitney R. Pinches and Travis T. Denton ” Development of Novel Compounds for the Treatment of Alzheimer's Disease: Synthesis of 2-(pyridin-3-yl)-1H-benzo[d]imidazole Analogues of GTS-21, a Potent and Selective $\alpha 7$ Nicotinic Acetylcholine Receptor Ligand.”

2008 – ACS Northwest and Rocky Mountain Regional Meeting: Daniel L. Dodge, Alex Pentecost and Travis T. Denton ”Starting Materials for the Construction of Structurally Constrained Analogues of the Neurotransmitter Glutamate. Synthesis of (E)-Ethyl 4-(diethoxyphosphoryl)-4-oxobut-2-enoate and Evaluation of its Reactivity as a Dienophile in the Diels-Alder Reaction.”

2008 – ACS Northwest and Rocky Mountain Regional Meeting: Elmira Peyman and Travis T. Denton. “Towards the First Completely Biodegradable Baby Diaper. Preparation of N^1, N^1 -(alkane-1,4-diyl)bis(N^1 -(3-aminopropyl)propane-1,3-diamines) by the Catalytic Hydrogenation of 3,3',3'',3'''-(alkane-1,4-diylbis(azanetriyl))tetrapropanenitriles.”

2007 – Invited talk at the 62nd Northwest Regional Meeting of the American Chemical Society, Boise, ID: **Travis T. Denton** and Donald E. Kiely. “Preparation of high molecular weight, branched, carbohydrate based polyamides utilizing a novel, low pressure, dinitrile to diamine catalytic hydrogenation.”

2007 – Poster Presentation at the opening mixer at the 62nd Northwest Regional Meeting of the American Chemical Society, Boise, ID: **Travis T. Denton** and Donald E. Kiely. “Preparation of high molecular weight, branched, carbohydrate based polyamides utilizing a novel, low pressure, dinitrile to diamine catalytic hydrogenation.”

2007 – Poster Presentation at the 62nd Northwest Regional Meeting of the American Chemical Society, Boise, ID: **Travis T. Denton** and Donald E. Kiely. “Preparation of high molecular weight, branched, carbohydrate based polyamides utilizing a novel, low pressure, dinitrile to diamine catalytic hydrogenation.”

2007 – Presentation at the 234th National ACS Meeting, Boston, MA: Tyler N. Smith, **Travis T. Denton**, Kylie Kramer, Jinsong Zhang, Donald E. Kiely. “Synthesis and Characterization of Higher Molecular Weight Stereo-Random Poly(D -Glucaramides) from 1:1 Alkylenediammonium D-Glucarate salts”

2006 - Poster Presentation at the 231st National ACS Meeting, Atlanta, GA: **Denton, Travis T.**, Rauk, Erika, Palmer, Christopher P. and Kiely, Donald E. “Synthesis and Evaluation of Tetrasodium 2,3,4,5-O-Sulfonato-Poly(4-Alkyl-4-Azaheptamethylene-D-Glucaramides) as Pseudostationary Phases for the Electrokinetic Separation of Aromatic-Aliphatic Ketones and Peptides.”

2006 - Poster Presentation at the 231st National ACS Meeting, Atlanta, GA: Smith, Tyler N., **Denton, Travis T.**, Zhang, Jinsong, and Kiely, Donald E. “Process for Higher Molecular Weight Stereo-Random Polyhydroxypolyamides from D-Glucaric Acid”

2006 – Invited talk at the *231st National ACS Meeting, Atlanta, GA*: Palmer, Christopher P., **Denton, Travis T.**, Rauk, Erika, Schnee, Vincent P., Baker, Gary A., Kiely, Donald E. and Steele, Brian M. “Characterization of the Selectivity and Performance of Novel Pseudo-Stationary Phases for Electrokinetic Chromatography”

2005 - Poster Presentation at the *14th International Conference on Cytochromes P450, Dallas, TX*: Jason K. Yano, Q. Zhao, **Travis Denton**, John R. Cashman, C. David Stout and Eric F. Johnson “High Resolution Crystal Structures of CYP 2A6 (the Principal Human Nicotine Oxidase) Complexed with Inhibitory Nicotine Analogs”

2005 - Poster Presentation at the *14th International Conference on Cytochromes P450, Dallas, TX*: John R. Cashman, **Travis T. Denton**, Mathew A. Cerny, Jason K. Yano and Eric F. Johnson “Substituted 3-Heteroaromatic Pyridine Analogs of Nicotine as Selective Inhibitors of CYP2A6”

2005 – Abstract 106. *Drug Metabolism Reviews*, 2005 Supplement 1, Vol. 37, p. 67: Inhibitors of CYP2A6 and CYP2A13 as Smoking Cessation and Cancer Chemoprevention Agents. Mathew A. Cerny, **Travis T. Denton**, Jason K. Yano, Linda Von Weymarn, Paul F. Hollenberg, Eric F. Johnson and John R. Cashman

2004 – Abstract 551. *Drug Metabolism Reviews*, 2004 Supplement 1, Vol. 36, p. 275: Synthesis and Evaluation of Novel Smoking Cessation Agents. John R. Cashman and **Travis T. Denton**

2003 - Poster Presentation at the *Tobacco Related Disease Research Program, San Jose CA*: **Denton, Travis T.** and Cashman, John R. “Synthesis and Biological Evaluation of Heteroaromatic Compounds as Novel Smoking Cessation Agents.”

2001 - Poster Presentation at the *National ACS Meeting, Chicago IL*: **Denton, T. T.**, Bridges, R. J., Thompson, C. M. “Synthesis and Biological Evaluation of *trans*-3, 4-Conformationally Restricted Glutamic Acid Analogues.”

2001 - Invited Poster Presentation at *Chirality 2000 – Chamonix – Mont Blanc – France*: **Denton, T. T.**, Thompson, C. M., Cooper, A. J. L. “The Synthesis of Conformationally-Restricted α -Ketoglutarate Analogues and Subsequent Transamination Using Two Thermostable Aminotransferases.”

1997 - Poster Presentation at the *ACS Northwest Regional Meeting, Moscow ID*: **Denton, T. T.**, Defina, S. C., Gerdes, J. M. “Serotonin Uptake Inhibitors: Synthesis of Quinolynoylphenylalkylamines and Phenylazepinoindoles.”

1997 - Poster Presentation at the *CWU Undergraduate Research Symposium*: **Denton, T. T.**, Defina, S. C., Gerdes, J. M. “Synthesis of Probes for the Characterization of the Three-Dimensional Model of the CNS Serotonin Uptake Receptor Inhibitor Binding Site.”

1996 - Poster Presentation at the *CWU Undergraduate Research Symposium*: **Denton, T. T.**, Gerdes, J. M. “Synthesis of Serotonin Uptake Inhibitors: Quinolynoylphenylalkylamines.”

Professional Affiliations:

Active manuscript reviewer: Drug Metabolism and Disposition

Member of the American Chemical Society: 1995-Present

References:

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