Allen A. Thomas, Ph.D.

University of Nebraska at Kearney
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Education

Ph.D., Organic Chemistry, May 2000
The Scripps Research Institute, La Jolla, CA
Advisor: K. Barry Sharpless, Ph.D., W.M. Keck Professor of Chemistry, 2001 Nobel Laureate in Chemistry
Dissertation: "I. Aminohydroxylation of Unsaturated Phosphonates: A Template for Molecular Diversity. II. Rapid Discoveries in Osmium (VIII) Catalysis Using Automation and Mass Spectrometry."

M.S., Organic Chemistry, May 1994
Baylor University, Waco, TX
Advisor: Charles Garner, Ph.D., Professor of Chemistry and Graduate Program Director
Thesis: "Toward Terpene-Derived C_2-Chiral Cyclic Boranes and Auxiliaries and Metalation Studies of Endocyclic and Exocyclic Alkenes."

B.S., Chemistry, ACS Certified, May 1992
Baylor University, Waco, TX
Summa Cum Laude, Phi Beta Kappa, Highest Ranking Student in College of Arts and Sciences (GPA: 4.0/4.0)

Professional Experience

2014-present ***University of Nebraska at Kearney.*** Assistant Professor, Department of Chemistry

Areas of Interest: Bio-organic and medicinal chemistry; designing drugs that target the central nervous system (CNS); Alzheimer's disease.

2013-2014 ***Community College of Denver.*** Chemistry Instructor

Taught General College Chemistry I (lecture and lab) and a General/Organic/Biochemistry course.

2000-2013 ***Array BioPharma, Medicinal Chemistry, Boulder and Longmont, CO***. Senior Research Investigator (2012-2013); Research Investigator (2006-2012); Senior Research Scientist (2003-2006); Research Scientist (2000-2003)

Optimization of small molecule drug candidates in multiple therapeutic areas including cancer, Alzheimer's disease, pain, and inflammatory diseases. Collaborated within multidisciplinary teams to integrate data from *in vitro* and *in vivo* experiments to obtain a compound currently in human clinical trials (Erk/cancer), and two compounds that progressed to pre-clinical toxicology studies (BACE/Alzheimer's and Met/cancer). Highly skilled synthetic organic chemist having prepared thousands of compounds involving up to 14-step syntheses, including compounds with multiple chirality centers.

Management and mentoring of junior scientists, including written performance reviews and establishing semiannual goals. My associates were consistently outstanding contributors, and they were inventors and authors of multiple patents, presentations and publications.

1997-1998 ***Access Pharmaceuticals (now Abeona Therapeutics), Drug Delivery, Dallas, TX***. Scientist

Used NMR and analytical chemistry techniques to determine the chemical structure of a cis-platinum labeled polymer that progressed to human clinical trials for cancer.

Teaching and Mentoring

University of Nebraska at Kearney

1.	Fall 2014	CHEM250	Elementary Organic Chemistry
2.	Fall 2014	CHEM250L	Elementary Organic Chemistry Lab
3.	Fall 2014	CHEM160L	General Chemistry Laboratory, 1st Semester (2 sections)
4.	Spring 2015	CHEM160	General Chemistry, 1st Semester
5.	Spring 2015	CHEM150	Introduction to Organic and Biochemistry
6.	Spring 2015	CHEM160L	General Chemistry Laboratory, 1st Semester
7.	Fall 2015	CHEM360	Organic Chemistry, 1st Semester
8.	Fall 2015	CHEM360L	Organic Chemistry Laboratory (2 sections)
9.	Fall 2015	CHEM160L	General Chemistry Laboratory, 1st Semester
10.	Spring 2016	CHEM361	Organic Chemistry, 2nd Semester
11.	Spring 2016	CHEM361L	Organic Chemistry Laboratory (2 sections)
12.	Spring 2016	CHEM161L	General Chemistry Laboratory, 2nd Semester
13.	Fall 2016	CHEM360	Organic Chemistry, 1st Semester
14.	Fall 2016	CHEM360L	Organic Chemistry Laboratory (2 sections)
15.	Fall 2016	CHEM388	Brewing Science Lecture and Lab (Capstone Course)
16.	Spring 2017	CHEM361	Organic Chemistry, 2nd Semester
17.	Spring 2017	CHEM361L	Organic Chemistry Laboratory (2 sections)
18.	Fall 2017	CHEM160	General Chemistry, 1st Semester
19.	Fall 2017	CHEM160L	General Chemistry Laboratory, 1st Semester (3 sections)

Community College of Denver

1.	April-May 2013	CHE111	General College Chemistry I (lecture and lab)
2.	April-May 2013	CHE109	General, Organic & Biochemistry
3.	Fall 2013	CHE111	General College Chemistry I (3 sections, lecture and lab)
4.	Spring 2014	CHE111	General College Chemistry I (2 sections, lecture and lab)

University of Nebraska at Kearney Undergraduate Research Students

Sydney Miller (Fall 2014-Spring 2015)
Karissa Finke (Fall 2014-Spring 2017)
Evan Augustyn (Fall 2014-Fall 2016)
Nathan Heeren (Fall 2014-Fall 2015)
Logan Hansen (Spring 2015-Spring 2016)
Libby Norvell (Spring 2015)
Andrew Flint (Fall 2015-Spring 2017)
Chris Hernandez (Spring 2016-present)
Abby Anthony (Spring 2016-Spring 2017)
Laura Stoner (Spring 2016-Summer 2017)
Barbara Calvert (Spring 2016)
Zach Sutton (Spring 2016)
Emily Dethlefs (Spring 2016)
Justine Bauer (Spring 2016-Summer 2016)
Seth Springer (Fall 2016-present)
Colton Hall (Spring 2017-present)
Brooklynn Venteicher (Summer 2017-present)

University of Nebraska at Kearney Chemistry Major Advisees

Emily Dethlefs (Fall 2015-Spring 2016)
Justine Bauer (Fall 2015-Spring 2016)
Cassidy Bruns (Fall 2015-present)
Breanna Attema (Fall 2015-Fall 2016)
Kyle Sutton (Fall 2015-present)
Jared Hunke (Fall 2016-present)
Seth Springer (Fall 2016-present)

Array BioPharma Associates

Michael Weiser, B.S. (2002-2003)
Jason De Meese, M.S. (2004-2009)
Alicia Skuza, B.A. (2007)
Gabrielle Kolakowski, M.A. (2007-2009)
Douglas Sammond, M.S. (2009-2011)
Brad Newhouse, M.S. (2011-2013)

Baylor University Summer Undergraduate Research Program

Gloria Loungeway (summer 1992)
Christina Arnold (summer 1993)

Awards, Honors, and Media Features

Awards and Honors

Poster entitled "3-Amino-4-oxy-pyrazolopyridines: Inhibitors of the kinase Met with in vivo efficacy in TGI studies" was selected for a talk at CHI's Next-Gen Kinase Inhibitors Conference, 2010
National Science Foundation Graduate Research Fellowship, Honorable Mention, 1992
Phi Beta Kappa (1991) and Alpha Chi (1990) Honor Societies Inductee, Baylor University
Summa Cum Laude and Highest Ranking Student in the College of Arts and Sciences, Baylor University, 1992
CRC Outstanding Freshman Chemistry Achievement Award, Baylor University, 1989

Media Features

1. Chemical & Engineering News article: "NMR Used to Determine Small Kinetic Isotope Effects." 18 September 1995.
2. Chemical & Engineering News article: "A Reaction Under Scrutiny." 3 November 1997.

Service

Chemistry Department Service

Safety Committee, Member (Fall 2014-Summer 2017)
General Chemistry Lab, 1st Semester (CHEM160L), Lab Coordinator (Fall 2017)
Infrastructure Committee, Member (Fall 2016-present), charged with allocating space for labs
Science Day at UNK, Representative (Fall 2017-present)
NMR instrument, share responsibility for maintenance (Fall 2014-present)
LC-MS instrument, Caretaker (Fall 2017-present)
Preparative HPLC instrument, Caretaker (Spring 2015-present)
Science Day Assistant, supervised high school students doing lab experiments (Fall 2014-2016)
Hastings High School visit to UNK chemistry department, Instructor/Assistant (Spring 2015-2017)
UNK Majors & Organizations Fair, Volunteer (April 2016)
UNK Daycare 3-Day Chemistry Camp, Assistant and Lab Preparation (June 2016)
UNK ChemClub demonstration to Kearney High School students, supervised experiments (April 2017)

University Service

UNK Solar Eclipse Watch Party, Walking Tours Volunteer (August 2017)
Summer Student Research Program (SSRP) Trip to Omaha, Chaperone (May 2017)
UNK Trip to National Conference on Undergraduate Research (NCUR) in Memphis, Chaperone (April 2017)
UNK Education Association, Negotiator & Executive Committee (May 2017-present)
Faculty Senate, Member (April 2016-present)
Blue&Gold Faculty Conversations with new students, Volunteer (Aug 2016 and 2017)
Late-Night Study Break, Volunteer to serve food to students during finals week (Dec 2016)

Professional Service

Sigma Xi Scientific Research Honor Society - UNK Chapter, President (May 2016-present)
Sigma Xi Annual Meeting and Student Research Conference, Poster Judge (Nov 2016)
Sigma Xi Student Research Showcase (online), Presentation Judge (April 2017)
Presentation "Getting Drugs into the Brain", Sigma Xi Science Café (Oct 2014)
Grant reviewer
- Great Plains IDeA-CTR Scholar, 2017 (1)
- Great Plains IDeA-CTR Pilot Program, 2017 (1)

Scientific article reviewer
- *European Journal of Medicinal Chemistry*, 2007 (2), 2015 (1)
- *Medicinal Research Reviews*, 2015 (1)
- *ChemMedChem,* 2015 (1)
- *Chemical Science,* 2015 (1)
- *Journal of Medicinal Chemistry,* 2016 (1)
- *Bioorganic and Medicinal Chemistry Letters,* 2016 (1)
- *Bioorganic and Medicinal Chemistry,* 2017 (1)
- *Proceedings of the National Conference on Undergraduate Research Journal,* 2016 (1)
- *MedChemComm,* 2017 (1)

Service-related grants funded

UNK Faculty Senate Artists and Lecturers Grant co-PI, $500 to bring Phil Plait to the *Great American Solar Eclipse Panel Discussion* hosted by the Sigma Xi UNK Chapter

Community College of Denver Service

Free tutoring and in class/lab assistance, General College Chemistry I, Spring 2013

Professional affiliations

American Chemical Society, 1991-present (Divisions of Organic Chem., Medicinal Chem., and Chemical Education)
Sigma Xi Scientific Research Honor Society, 2015-present
Nebraska Academy of Sciences, 2016-present
American Association for the Advancement of Science, 2017-present

Research

Funded Grants

1. NIH (NINDS) R15NS099981, PI, 9/18/2017-9/17/2020, $399,082, "Identification of new LAT-1 transporter substrates for drug delivery".
2. Nebraska EPSCoR Undergraduate Research Experience in Small Colleges and Universities, PI, 5/22/2017-9/29/2017, $5,000, "Alpha-Substituted Phenylalanine Analogs to Probe the Activity of LAT1 Transporter Substrates".
3. Nebraska EPSCoR Major Research Instrumentation (MRI), co-PI, 8/17/2016, $200,000, "New 400MHz NMR to Enhance Research and Teaching at UNK".
4. Nebraska EPSCoR Undergraduate Research Experience in Small Colleges and Universities, PI, 5/23/2016-9/15/2016, $5,000, "Identification of Functional Groups to Improve LAT-1 Substrate Activity of Amino Acid Analogs".
5. Nebraska EPSCoR Undergraduate Research Experience in Small Colleges and Universities, PI, 5/26/2015-8/31/2015, $5,000, "Probing Large-Neutral Amino Acid Transporter 1 (LAT1) to identify substrates for drug delivery".
6. Nebraska Research Initiative, Lab Equipment Grant, PI, 4/20/2015, $25,000, "Probing Large-Neutral Amino Acid Transporter 1 (LAT1) to identify substrates for use in drug delivery".
7. University of Nebraska Kearney, Research Services Council Seed Grant, PI, 10/1/2014-6/30/2015, $10,201, "Probing Large-Neutral Amino Acid Transporter 1 (LAT1) to identify substrates for use in drug delivery".

Publications, Patents and Conference Presentations

Peer-Reviewed Publications (23)

1. Zur, A.A.; Chien, H.-C.; Augustyn, E.; Flint, A.; Heeren, N.; Finke, K.; Hernandez, C.; Hansen, L.; Miller, S.; Lin, L.; Giacomini, K.M.; Colas, C.; Schlessinger, A.; Thomas, A.A., "LAT1 activity of carboxylic acid bioisosteres: Evaluation of hydroxamic acids as substrates." *Bioorg. Med. Chem. Lett.* **2016**, *26*, 5000.
2. Augustyn, E.; Finke, K.; Zur, A.A.; Hansen, L; Heeren, N.; Lin, L.; Chien, H.-C.; Giacomini, K.M.; Colas, C.; Schlessinger, A.; Thomas, A.A., "LAT-1 Activity of meta-Substituted Phenylalanine and Tyrosine Analogs." *Bioorg. Med. Chem. Lett.* **2016**, *26*, 2616.
3. Diaz, D.; Dambach, D.M.; Siu, M.; Hunt W.K.; Thomas A.A.; Lyssikatos, J.P.; Liu, X.; Lewin-Koh, S.; McCray, B.; Ford, K.A., "Mitigation of Opioid Off-target Effects and Identification of Structural Drivers of Opioid Receptor Engagement for BACE-1 Small Molecule Inhibitors." *Toxicol. Mech. Methods* **2015***, 25,* 478*.*
4. Thomas, A.A.; Hunt, K.W.; Newhouse, B.; Watts, R.J.; Liu, X.; Vigers, G.; Smith, D.; Rhodes, S.P.; Brown, K.D.; Otten, J.N.; Burkard, M.; Cox, A.A.; Geck Do, M.K.; Dutcher, D.; Rana, S.; DeLisle, R.K.; Regal, K.; Wright. A.D.; Groneberg, R.; Liao, J.; Scearce-Levie, K.; Siu, M.; Purkey, H.E.; Lyssikatos, J.P., "8-Tetrahydropyran-2-yl chromans: highly selective beta-site amyloid precursor protein cleaving enzyme 1 (BACE1) inhibitors." *J. Med. Chem.* **2014**, *57*, 10112.
5. Thomas, A.A.; Hunt, K.W.; Volgraf, M.; Watts, R.J.; Liu, X.; Vigers, G.; Smith, D.; Sammond, D.; Tang, T.P.; Rhodes, S.P.; Metcalf, A.T.; Brown, K.D.; Otten, J.N.; Burkard, M.; Cox, A.A.; Geck Do, M.K.; Dutcher, D.; Rana, S.; DeLisle, R.K.; Regal, K.; Wright. A.D.; Groneberg, R.; Scearce-Levie, K.; Siu, M.; Purkey, H.E.; Lyssikatos, J.P.;

Gunawardana, I., "Discovery of 7-Tetrahydropyran-2-yl Chromans: β-Site Amyloid Precursor Protein Cleaving Enzyme 1 (BACE1) Inhibitors That Reduce Amyloid β-Protein (Aβ) in the Central Nervous System." *J. Med. Chem.* **2014**, *57*, 878.

6. Volgraf, M.; Chan, L.; Huestis, M.P.; Purkey, H.E.; Burkard, M.; Geck Do M.; Harris, J.; Hunt, K.W.; Liu, X.; Lyssikatos, J.P.; Rana, S.; Thomas, A.A.; Vigers, G.P.; Siu, M., "Synthesis, characterization, and PK/PD studies of a series of spirocyclic pyranochromene BACE1 inhibitors." *Bioorg. Med. Chem. Lett.* **2014**, *24*, 2477.
7. Blake, J.F.; Gaudino, J.J.; De Meese, J.; Mohr, P.; Chicarelli, M.; Tian, H.; Garrey, R.; Thomas, A.; Siedem, C.S.; Welch, M.B.; Kolakowski, G.; Kaus, R.; Burkard, M.; Martinson, M.; Chen, H.; Dean, B.; Dudley, D.A.; Gould, S.E.; Pacheco, P.; Shahidi-Latham, S.; Wang, W.; West, K.; Yin, J.; Moffat, J.; Schwarz, J.B., "Discovery of 5,6,7,8-tetrahydropyrido[3,4-d]pyrimidine inhibitors of Erk2." *Bioorg. Med. Chem. Lett.* **2014**, *24*, 2635.
8. Liu, X.; Wong, H.; Scearce-Levie, K.; Watts, R.J.; Coraggio, M.; Shin, Y.G.; Peng, K.; Wildsmith, K.R.; Atwal, J.K.; Mango, J.; Schauer, S.P.; Regal, K.; Hunt, K.W.; Thomas, A.A.; Siu, M.; Lyssikatos, J.; Deshmukh, G.; Hop, C.E., "Mechanistic Pharmacokinetic-Pharmacodynamic Modeling of BACE1 Inhibition in Monkeys: Development of a Predictive Model for Amyloid Precursor Protein Processing." *Drug Metab. Dispos.* **2013**, *41*(7), 1319.
9. Hunt, K.W.; Cook, A.W.; Watts, R.J.; Clark, C.T.; Vigers, G.; Smith, D.; Metcalf, A.T.; Gunawardana, I.W.; Burkard, M.; Cox, A.A.; Geck Do, M.K.; Dutcher, D.; Thomas, A.A.; Rana, S.; Kallan, N.C.; DeLisle, R.K.; Rizzi, J.P.; Regal, K.; Sammond, D.; Groneberg, R.; Siu, M.; Purkey, H.; Lyssikatos, J.P.; Marlow, A.; Liu, X.; Tang, T.P., "Spirocyclic β-Site Amyloid Precursor Protein Cleaving Enzyme 1 (BACE1) Inhibitors: From Hit to Lowering of Cerebrospinal Fluid (CSF) Amyloid β in a Higher Species." *J. Med. Chem.* **2013**, *56*(8), 3379.
10. Thomas, A.A.; Le Huerou, Y.; De Meese, J.; Gunawardana, I.; Kaplan, T.; Romoff, T.T.; Gonzales, S.S.; Condroski, K.; Boyd, S.A.; Ballard, J.; Bernat, B.; DeWolf, W.; Han, M.; Lee, P.; Lemieux, C.; Pedersen, R.; Pheneger, J.; Poch, G.; Smith, D.; Sullivan, F.; Weiler, S.; Wright, S.K.; Lin, J.; Brandhuber, B.; Vigers, G., "Synthesis, *in vitro* and *in vivo* activity of thiamine antagonist transketolase inhibitors." *Bioorg. Med. Chem. Lett.* **2008**, *18*(6), 2206.
11. Thomas, A.A.; De Meese, J.; Le Huerou, Y.; Boyd, S.A.; Romoff, T.T.; Gonzales, S.S.; Gunawardana, I.; Kaplan, T.; Sullivan, F.; Condroski, K.; Lyssikatos, J. P.; Aicher, T.D.; Ballard, J.; Bernat, B.; DeWolf, W.; Han, M.; Lemieux, C.; Smith, D.; Weiler, S.; Wright, S.K.; Vigers, G.; Brandhuber, B., "Non-charged thiamine analogs as inhibitors of enzyme transketolase." *Bioorg. Med. Chem. Lett.* **2008**, *18*(2), 509.
12. Le Huerou, Y.; Gunawardana, I.; Thomas, A.A.; Boyd, S.A.; De Meese, J.; DeWolf, W.; Gonzales, S.S.; Han, M.; Hayter, L.; Kaplan, T.; Lemieux, C.; Lee, P.; Pheneger, J.; Poch, G.; Romoff, T.T.; Sullivan, F.; Weiler, S.; Wright, S.K.; Lin, J., "Prodrug thiamine analogs as inhibitors of the enzyme transketolase." *Bioorg. Med. Chem. Lett.* **2008**, *18*(2), 505.
13. Eichenbaum, K.D.; Thomas, A.A.; Eichenbaum, G.M.; Gibney, B.R.; Needham, D.; Kiser, P. F., "Oligo-α-hydroxy Ester Cross-Linkers: Impact of Cross-Linker Structure on Biodegradable Hydrogel Networks." *Macromolecules* **2005**, *38*(26), 10757.
14. Thomas, A.A.; Kim, I.-T.; Kiser, P.F., "Symmetrical biodegradable crosslinkers for use in polymeric devices." *Tetrahedron Lett.* **2005**, *46*(51), 8921.
15. Dupau, P.; Epple, R.; Thomas, A.A.; Fokn, V.V.; Sharpless, K.B., "Osmium-Catalyzed Dihydroxylation of Olefins in Acidic Media: Old Process, New Tricks." *Advanced Synthesis and Catalysis* **2002**, *344*(3+4), 421.
16. Singleton, D.A.; Schulmeier, B.E.; Hang, C.; Thomas, A.A.; Leung, S.-W.; Merrigan, S.R., "Isotope Effects and the Distinction Between Asynchronous, and Stepwise Diels-Alder Reactions." *Tetrahedron* **2001**, *57*, 5149.
17. Thomas, A.A.; Monk, K.A.; Abraham, S.; Lee, S.; Garner, C.M., "Rearrangement of Methylenecamphor during Electrophilic Bromination: Remarkably Clean Access to the Unnatural Fenchyl (1,3,3-Trimethylbicyclo[2.2.1]heptane) System." *Tetrahedron Lett.* **2001**, *42*, 2261.
18. Kiser, P.F.; Thomas, A.A.; Eichenbaum, G.M.; Needham, D.; Kim, I., "Design and Performance of Poly(HPMA) Hydrogels Containing Symmetrical Biodegradable Crosslinkers Composed of Oligo-Lactate and Oligo-Glycolate Esters." *Polym. Prepr.* **2000**, *41*, 712.
19. Thomas, A.A.; Sharpless, K.B., "The Catalytic Asymmetric Aminohydroxylation (AA) of Unsaturated Phosphonates." *J. Org. Chem.* **1999**, *64*, 8379.
20. Singleton, D.A.; Merrigan, S.R.; Thomas, A.A., "Stereochemical Labeling at Natural Abundance. Stereochemistry, Isotope Effects, and Mechanism of the Diels-Alder Reaction of Hexachlorocyclopentadiene with Ethyl Vinyl Ether." *Tetrahedron Lett.* **1999**, *40*, 639.
21. DelMonte, A.J.; Haller, J.; Houk, K.N.; Sharpless, K.B.; Singleton, D.A.; Strassner, T.; Thomas, A.A., "Experimental and Theoretical Kinetic Isotope Effects for Asymmetric Dihydroxylation. Evidence Supporting a Rate-Limiting "(3+2)" Cycloaddition." *J. Am. Chem. Soc.* **1997**, *119*, 9907.
22. Garner, C.M.; Thomas, A.A., "Allylic Metalation of Endo- and Exo-Cyclic Alkenes: Anomalous High Reactivity of β-Pinene." *J. Org. Chem.* **1995**, *60*, 7051.

23. Singleton, D.A.; Thomas, A.A., "High-Precision Simultaneous Determination of Multiple Small Kinetic Isotope Effects at Natural Abundance." *J. Am. Chem. Soc.* **1995**, 117, 9357.

Patents (15)

1. Blake, J.F.; Cook, A.; Gunawardana, I.W.; Hunt, K.W.; Lyon, M.; Metcalf, A.T.; Mohr, P.J.; Moreno, D.A.; Newhouse, B.; Ren, L.; Tang, T.P.; Thomas, A.A.; Schwarz, J.; Schmidt, J.; Gazzard, L.; Chen, H. "Serine/Threonine Kinase Inhibitors." PCT Int. Appl. (2015) WO2015103133.
2. Allen, S.; Andrews, S.W.; Blake, J.F.; Brandhuber, B.J.; Haas, J.; Jiang, Y.; Kercher, T.; Kolakowski, G.R.; Thomas, A.A.; Winski, S.L., "Bicyclic urea, thiourea, guanidine and cyanoguanidine compounds useful for the treatment of pain." PCT Int. Appl. (2014) WO2014078454.
3. Blake, J.F.; Brandhuber, B.J.; Haas, J.; Newhouse, B.; Thomas, A.A.; Winski, S.L., "N-(arylalkyl)-N'-pyrazolyl-urea, thiourea, guanidine and cyanoguanidine compounds as TrkA kinase inhibitors." PCT Int. Appl. (2014) WO2014078331.
4. Cook, A.; Gunawardana, I.W.; Huestis, M.; Hunt, K.W.; Kallan, N.C.; Metcalf, A.T.; Newhouse, B.; Siu, M.; Tang, T.P.; Thomas, A.A.; Volgraf, M., "Heterocyclic inhibitors of beta-secretase for the treatment of neurodegenerative diseases." PCT Int. Appl. (2012) WO2012071458.
5. Hunt, K.W.; Tang, T.P.; Thomas, A.A., "Compounds for treating neurodegenerative diseases." PCT Int. Appl. (2012) WO2012040641.
6. Blake, J.F.; Chen, H.; Chicarelli, M.J.; DeMeese, J.; Garrey, R.; Gaudino, J.J.; Kaus, R.J.; Kolakowski, G.R.; Marlow, A.L.; Mohr, P.J.; Ren, L.; Schwarz, J.; Siedem, C.S.; Thomas, A.A.; Wallace, E.; Wenglowsky, S.M., "Serine/Threonine Kinase Inhibitors." US20130338140, issued 2013.
7. Clark, C.T.; Cook, A.; Gunawardana, I.W.; Hunt, K.W.; Kallan, N.C.; Siu, M.; Thomas, A.A.; Volgraf, M., "Compounds for treating neurodegenerative diseases." PCT Int. Appl. (2011) WO2011123674.
8. Blake, J.F.; Boyd, S.A.; De Meese, J.; Fong, K.C.; Gaudino, J.J.; Kaplan, T.; Marlow, A.L.; Seo, J.; Thomas, A.A.; Tian, H.; Cohen, F.; Young, W.B., "Heterobicyclic pyrazole compounds and methods of use." U.S. Patent 7,723,330, issued 2010.
9. Blake, J.F.; Boyd, S.; De Meese, J.; Gaudino, J.J.; Marlow, A.L.; Seo, J.; Thomas, A.A.; Tian, H., "Heterobicyclic thiophene compounds and methods of use." U.S. Patent 8,003,662, issued 2011.
10. Boyd, S.A.; Condroski, K.R.; De Meese, J.; Gonzalez, S.S.; Gunawardana, I.W.; Kaplan, T.; Le Huerou, Y.; Lyssikatos, J.; Romoff, T.T.; Sullivan, F.X.; Thomas, A., "Thiazoliums as transketolase inhibitors." PCT Int. Appl. (2005) WO2005095391.
11. Boyd, S.A.; Condroski, K.R.; Thomas, A.; Gonzales, S.S.; Gunawardana, I.W.; Huerou, Y.L; Romoff, T.T.; Sullivan, F.X., "Thioalkeneamides as transketolase inhibitors." U.S. Patent 7,879,885, issued 2011.
12. Boyd, S.A.; De Meese, J.; Gunawardana, I.; Jacobson, I.C.; Le Huerou, Y.; Lupher, Jr., M.L.; McLaughlin, M.; Miller, S.; Thomas, A.; Thorsett, E.; Xu, R.; Yanik, M.; Zhang, G., "Aryl piperidine derivatives as VLA-1 integrin antagonists and uses thereof." PCT Int. Appl. (2005) WO2005019200.
13. Boyd, S.A.; Miller, S.; Thomas, A.; Xu, R.; Le Huerou, Y.; Gunawardana, I.; Zhang, G.; De Meese, J.; McLaughlin, M.; Yanik, M.; Lupher, Jr., M.L.; Jacobson, I.C.; Thorsett, E., "Aminopiperidine amide derivatives as VLA-1 integrin antagonists and uses thereof." PCT Int. Appl. (2005) WO2005019177.
14. Boyd, S.A.; Miller, S.; Thomas, A.; Xu, R.; Le Huerou, Y.; Gunawardana, I.; Zhang, G.; De Meese, J.; McLaughlin, M.; Yanik, M.; Lupher, Jr., M.L.; Jacobson, I.C.; Thorsett, E.D.; Farouz, F.S.; Kasar, R.A., "Acrylamide derivatives as VLA-1 integrin antagonists and uses thereof." PCT Int. Appl. (2005) WO2005016883.
15. Kiser, P.F.; Thomas, A.A., "Biodegradable Cross-Linkers Having a Polyacid Connected to Reactive Groups for Cross-Linking Polymer Filaments." U.S. Patent 6,521,431, issued 2003.

Conference Presentations (46)

1. Anthony, A.; Flint, A.; Thomas, A.A., "Pursuit of Heterocyclic Analogs of Histidine via Palladium-Catalyzed Cross Coupling." Proceedings of the 127th Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, **2017**; CHEM-A2, talk.
2. Flint, A.; Zur, A.A.; Augustyn, E.; Finke, K.; Heeren, N.; Chien, H.-C.; Lin, L.; Giacomini, K.; Colas, C.; Schlessinger, A.; Thomas, A.A., "Discovery of Hydroxamic Acids as LAT1 Substrates for Drug Delivery." Proceedings of the 127th Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, **2017**; CHEM-A7, talk.
3. Stoner, L.; Bauer, J.; Finke, K.; Anthony, A.; Flint, A.; Springer, S.; Thomas, A.A., "Optimization of Negishi Coupling to Prepare Phenylalanine Analogs Containing Polar Functional Groups." Proceedings of the 127th Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, **2017**; CHEM-A13, talk.

4. Springer, S.; Augustyn, E.; Finke, K.; Hansen, L.; Thomas, A.A., "Synthesis of Oxazolidinone-Protected Amino Acids for use in Negishi Coupling Reactions." Proceedings of the 127th Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, **2017**; CHEM-A12, talk.
5. Flint, A.; Finke, K.; Zur, A.A.; Chien, H.-C.; Augustyn, E.; Heeren, N.; Hernandez, C.; Hansen, L.; Miller, S.; Lin, L.; Giacomini, K.M.; Colas, C.; Schlessinger, A.; Thomas, A.A., "Discovery of Amino Acid Bioisosteres that are Transported by the LAT1 Protein for Use in Drug Delivery." 31st Annual National Conference on Undergraduate Research, Memphis, TN, **2017**, poster.
6. Springer, S.; Augustyn, E.; Finke, K.; Hansen, L.; Thomas, A.A., "Negishi Coupling Reactions of Oxazolidinone-Protected Amino Acids." 31st Annual National Conference on Undergraduate Research, Memphis, TN, **2017**, poster.
7. Thomas, A.A., Zur, A.A.; Chien, H.-C.; Augustyn, E.; Flint, A.; Heeren, N.; Finke, K.; Hernandez, C.; Hansen, L.; Miller, S.; Lin, L.; Giacomini, K.M.; Colas, C.; Schlessinger, A.; "Discovery of Amino Acid Bioisosteres that are Transported by the LAT1 Protein for Use in Drug Delivery." Sigma Xi Research Society National Meeting, Atlanta, GA, **2016**; PR-CBB-182, poster.
8. Stoner, L.; Bauer, J.; Finke, K.; Colas, C.; Schlessinger, A.; Thomas A.A., "Synthesis of phenylalanine analogs containing polar substituents using the Negishi coupling reaction." Abstracts of Papers, 51st Midwest Regional Meeting of the American Chemical Society, Manhattan, KS, **2016**; MWRM-356, poster.
9. Flint, A.; Anthony, A.; Colas, C.; Schlessinger, A.; Thomas, A.A., "Investigation of palladium-catalyzed cross coupling reactions to prepare heterocyclic analogs of histidine." Abstracts of Papers, 51st Midwest Regional Meeting of the American Chemical Society, Manhattan, KS, **2016**; MWRM-358, poster.
10. Hernandez, C.; Finke, K.; Hansen, L.; Kiser, P.F.; Thomas, A.A., "Synthesis of Tenofovir Prodrugs for LAT1 Mediated Drug Delivery." Abstracts of Papers, 51st Midwest Regional Meeting of the American Chemical Society, Manhattan, KS, **2016**; MWRM-195, poster.
11. Augustyn, E.; Finke, K.; Hansen, L.M.; Heeren, N.; Zur, A.A.; Lin, L.; Giacomini, K.; Thomas, A.A., "Substituted Amino Acids as LAT-1 Substrates for Use in Drug Delivery." 30th Annual National Conference on Undergraduate Research, Asheville, NC, **2016**, poster.
12. Hansen, L.M.; Zur, A.A.; Augustyn, E.; Finke, K.; Heeren, N.; Chien, H.-C.; Lin, L.; Giacomini, K.; Colas, C.; Schlessinger, A.; Thomas, A.A., "Substituted Amino Acids as Large-Neutral Amino Acid Transporter 1 (LAT-1) Substrates for Drug Delivery." Proceedings of the 126th Annual Meeting of the Nebraska Academy of Sciences, Lincoln, NE, **2016**; CHEM-A9, talk.
13. Thomas, A.A. "Treating Alzheimer's Disease: Approaches to Getting Drugs into the Brain." American Chemical Society Nebraska Section Lectureship, Kearney, NE, **2015**, talk.
14. Thomas, A.A.; Augustyn, E.; Finke, K.; Hansen, L.M.; Heeren, N.; Miller, S.; Zur, A.A.; Lin, L.; Giacomini, K., "Large-neutral amino acid transporter 1 (LAT-1) for drug delivery to the brain." Abstracts of Papers, 50th Midwest Regional Meeting of the American Chemical Society, St. Joseph, MO, **2015**; MWRM-3, talk.
15. Finke, K.; Hansen, L.M.; Augustyn, E.; Zur, A.A.; Lin, L.; Giacomini, K.; Thomas, A.A., "Substituted amino acids as LAT-1 substrates for use in drug delivery." Abstracts of Papers, 50th Midwest Regional Meeting of the American Chemical Society, St. Joseph, MO, **2015**; MWRM-275, poster.
16. Augustyn, E.; Heeren, N.; Miller, S.; Zur, A.A.; Lin, L.; Giacomini, K.; Thomas, A.A. "Synthesis and activity of amino acid bioisosteres as LAT-1 substrates." Abstracts of Papers, 50th Midwest Regional Meeting of the American Chemical Society, St. Joseph, MO, **2015**; MWRM-279, poster.
17. Hunt, K.W.; Vigers, G.; Smith, D.; Geck-Do, M.; Dutcher, D.; Cook, A.W.; Thomas, A.A.; Tang, T.P.; Watts, R.J.; Clark, C.T.; Diaz, D.; Metcalf, A.T.; Gunawardana, I.W.; Kallan, N.C.; DeLisle, R.K.; Purkey, H.; Siu, M.; Burkard, M.; Lyssikatos, J.P.; Groneberg, R., Regal, K., "Discovery of cathepsin D-selective BACE1 inhibitors." Abstracts of Papers, 245th National Meeting of the American Chemical Society, New Orleans, LA, **2013**; MEDI-36, talk.
18. Sutherlin, D.; Gaudino, J.; Thomas, A.; Kaus, B.; Young, W.; Diaz, D.; Harstad, E.; Liederer, B.; Merchant, M.; Stumpf, A.; Siedem, C.; Kim, A.; Eigenbrot, C.; Shia, S.; Blake, J.; Tsui, V.; Boyd, S., "Big changes from a small atom: Effects of fluorine substitution on small molecule MET inhibitors." Abstracts of Papers, 245th National Meeting of the American Chemical Society, New Orleans, LA, **2013**; MEDI-257, talk.
19. Thomas, A.A.; Hunt, K.; Burkard, M.; Cox, A.; DeLisle, K.; Dutcher, D.; Geck Do, M.; Liu, X.; Metcalf, A.; Rana, S.; Regal, K.; Sammond, D.M.; Scearce-Levie, K.; Smith, D.; Vigers, G., "Discovery of BACE1 inhibitors that reduce Abeta in the CNS despite high efflux." Gordon Research Conference, Medicinal Chemistry, New London, NH, August 5-10, **2012**, poster.
20. Meiland, W.; Atwal, J.; Solanoy, H.; Hoyte, K.; Luk, W.; Lu, Y.; Watts, R.; Scearce-Levie, K.; Burkard, M.; Hunt, K.; Thomas, A.A., "Role of BACE1 and BACE2 in the Production of Endogenous Mouse β-Amyloid." Alzheimer's Association International Conference, Vancouver, Canada, July 14-19, **2012**, P1-249, poster.

21. Kolakowski, G.R.; Neitzel, A.; Gauthier, C.; Siedem, C.; Marlow, A.L.; Thomas, A.A.; Young, W.B.; Eigenbrot, C.; Shia, S.; Blake, J.F.; Opie, L.P.; Eberhardt, C.; Winski, S.; Anderson, D.; Dinkel, V.; Dean, B.; Kim, A.; Sutherlin, D.; Gaudino, J.J; Boyd, S.A., "Discovery of 4-aminopyrazolopyridines as potent, selective inhibitors of the kinase cMet." 21st International Symposium on Medicinal Chemistry, Brussels, Belgium, September 5-9, **2010**, poster.
22. Thomas, A.A.; Seo, J.; Lunghofer, P.; Marlow, A.L.; Kaplan, T.; Kaus, B.; Fong, K. C.; Welch, M.; Siedem, C.; De Meese, J.; Tian, H.; Kolakowski, G.; Peng, J.; Merchant, M.; Young, W.B.; Cohen, F.; Stumpf, A.; Wong, B.; Liederer, B.M.; Mamounas, M.; Eigenbrot, C.; Blake, J.F.; Opie, L.P.; Eberhardt, C.; Winski, S.; Anderson, D.; Dinkel, V.; Dean, B.; Shia, S.; Kim, A.; Poon, K.A.; Sutherlin, D.; Gaudino, J.J.; Boyd, S.A., "3-Amino-4-oxy-pyrazolopyridines: Inhibitors of the kinase Met with *in vivo* efficacy in TGI studies." Cambridge Healthtech Institute's Next-Gen Kinase Inhibitors: Oncology and Beyond, Cambridge, MA, June 21-23, **2010**, Abstract #1, poster and selected for talk.
23. Thomas, A.A.; Xu, R.; Miller, S.; Boyd, S.; Condroski, K.; Gunawardana, I.; Zhang, G.; Lupher, Jr., M.L.; Farouz, F. S.; Jacobson, I.C.; Staunton, D.S.; Thorsett, E.D., "VLA1 integrin inhibitors: Diaminopropionic acid derivatives." Abstracts of Papers, 233rd National Meeting of the American Chemical Society, Chicago, IL, **2007**; MEDI-392, poster.
24. Thomas, A.A.; Miller, S.; Boyd, S.; Condroski, K.; De Meese, J.; Gunawardana, I.; Xu, R.; Zhang, G.; Lupher, Jr., M.L.; Farouz, F.S.; Jacobson, I.C.; Staunton, D.S.; Thorsett, E.D., "VLA1 Integrin Inhibitors: Aminopiperidine Amides." Abstracts of Papers, 233rd National Meeting of the American Chemical Society, Chicago, IL, **2007**; MEDI-393, poster.
25. Thomas, A.A.; Ballard, J.; Bernat, B.; Boyd, S.A.; Brandhuber, B.; Condroski, K.; De Meese, J.; DeWolf, W.; Gonzales, S.S.; Gunawardana, I.; Han, M.; Kaplan, T.; Le Huerou, Y.; Lemieux, C.; Romoff, T.T.; Sullivan, F.; Weiler, S.; Wright, S.K.; Vigers, G.; Smith, D., "Non-charged thiamine analogues as inhibitors of enzyme transketolase." Abstracts of Papers, 230th National Meeting of the American Chemical Society, Washington, DC, **2005**; MEDI-327, poster.
26. Romoff, T.T.; Ballard, J.; Bernat, B.; Boyd, S. A.; Brandhuber, B.; Condroski, K.; De Meese, J.; DeWolf, W.; Gonzales, S.S.; Gunawardana, I.; Han, M.; Le Huerou, Y.; Lee, P.; Kaplan, T.; Lemieux, C.; Pedersen, R.; Pheneger, J.; Poch, G.; Smith, D.; Sullivan, F.; Thomas, A.A.; Weiler, S.; Wright, S.K.; Vigers, G., "Potent and selective thiamine antagonists that inhibit transketolase." Abstracts of Papers, 230th National Meeting of the American Chemical Society, Washington, DC, **2005**; MEDI-326, poster.
27. Gunawardana, I.; Ballard, J.; Bernat, B.; Boyd, S. A.; Brandhuber, B.; Condroski, K.; De Meese, J.; DeWolf, W.; Gonzales, S.S.; Han, M.; Kaplan, T.; Le Huerou, Y.; Lemieux, C.; Romoff, T.T.; Smith, D.; Sullivan, F.; Thomas, A.A.; Weiler, S.; Wright, S.K.; Vigers, G., "Thiamine mimetics as inhibitors of enzyme transketolase." Abstracts of Papers, 230th National Meeting of the American Chemical Society, Washington, DC, **2005**; MEDI-325, poster.
28. Thomas, A.A.; De Meese, J.; Miller, S.C.; Boyd, S.; Lupher, Jr., M.; Staunton, D., "Toward VLA1 Integrin Inhibitors: Parallel Synthesis of Novel Hydantoin Scaffolds." 29th National Medicinal Chemistry Symposium, Madison, WI, **2004**; P113, poster.
29. Thomas, A.A.; Baxter, I.; Williamson, J.R.; Epple, R.; Sharpless, K.B., "Triazole Methylguanidines: A Click Chemistry Approach Toward Incorporation of a Synthetically Difficult Functional Group." Drugs Fut 2002, 27(Suppl. A): XVIIth Int. Symp. on Medicinal Chemistry: Barcelona, Spain, **2002**; P107, poster.
30. Thomas, A.A.; Epple, R.; Sharpless, K.B., "Rapid Discoveries in Os(VIII) Catalysis using Automation and Mass Spectrometry." Abstracts of Papers, 221st National Meeting of the American Chemical Society, San Diego, CA; American Chemical Society: Washington, DC, **2001**; ORGN-619, poster.
31. Monk, K.A.; Thomas, A.A.; Abraham, S.; Lee, S; Garner, C.M., "Rearrangement of Methylenecamphor: Remarkably Clean Access to a Brominated Derivative of the Unnatural Fenchyl System." Abstracts of Papers, 220th National Meeting of the American Chemical Society, Washington, DC; American Chemical Society: Washington, DC, **2000**; ORGN-058, poster.
32. Thomas, A.A.; Sharpless, K.B., "Aminohydroxylation of Unsaturated Phosphonates: A Template for Structural Diversity." Abstracts of Papers, 219th National Meeting of the American Chemical Society, San Francisco, CA; American Chemical Society: Washington, DC, **2000**; MEDI-220, poster.
33. Thomas, A.A.; Kiser, P.F.; Kim, I., "Symmetrical, Biodegradable Cross-Linkers Based on Lactic or Glycolic Acid: Preparation and Hydrolysis Rate Studies." Abstracts of Papers, 219th National Meeting of the American Chemical Society, San Francisco, CA; American Chemical Society: Washington, DC, **2000**; ORGN-394, poster.
34. Kiser, P.F.; Thomas, A.A.; Eichenbaum, G.M.; Needham, D.; Kim, I., "Design and Performance of Poly(HPMA) Hydrogels Containing Symmetrical Biodegradable Crosslinkers Composed of Oligo-Lactate and Oligo-Glycolate Esters." Abstracts of Papers, 219th National Meeting of the American Chemical Society, San Francisco, CA; American Chemical Society: Washington, DC, **2000**; POLY-362, talk.

35. Rice, J.R.; Shannon, K.F.; Callahan, E.H.; Jacob, J.E.; Thomas, A.A.; Luthy, C.L., "Chemical Characterization of a Therapeutic Platinum-Carrying Polymer." Abstracts of Papers, 8th International Symposium on Platinum and Other Metal Coordination Compounds in Cancer Chemotherapy, Oxford, England, April **1999**, poster.
36. Thomas, A.A.; Burgess, S.C.; Luthy, C.L.; Roach, J.S.; Evagorou, E.; Buckley, R.; Duncan, R., "The Unique and Complex Challenges of Polymer Therapeutics: Synthesis of AP 5070, a Platinated Polymer." Abstracts of Papers, 215th National Meeting of the American Chemical Society, Dallas, TX; American Chemical Society: Washington, DC, **1998**; MEDI-080, poster.
37. Rice, J.R.; Luthy, C.L.; Thomas, A.A.; Roach, J.S.; Shannon, K.F.; Jacob, J.E.; Eberhardt, G.E.; Callahan, E.H.; Evagorou, E.; Buckley, R.; Wasil, M.; Duncan, R., "The Unique and Complex Challenges of Polymer Therapeutics: Purity Characterization of AP 5070, a Platinated Polymer." Abstracts of Papers, 215th National Meeting of the American Chemical Society, Dallas, TX; American Chemical Society: Washington, DC, **1998**; ANYL-044, poster.
38. Burgess, S.C.; Thomas, A.A.; Luthy, C.L., "The Unique and Complex Challenges of Polymer Therapeutics: Structural Characterization of AP 5070, a Platinated Polymer." Abstracts of Papers, 215th National Meeting of the American Chemical Society, Dallas, TX; American Chemical Society: Washington, DC, **1998**; INOR-229, poster.
39. Luthy, C.L.; Thomas, A.A.; Callahan, E.H.; Van Inwegen, R.; Wilson, G.; Evagorou, E.; Gianasi, E.; Duncan, R., "Anti-Tumor Activity of a Platinated Polymer (AP5070)–Chemical Optimization and Confirmation of Enhanced Therapeutic Ratio." Presented at the 25th International Symposium on Controlled Release of Bioactive Materials, Las Vegas, Nevada, June **1998**, talk.
40. Singleton, D.A.; Merrigan, S.R.; Thomas, A.A., "Stereochemical Labeling at Natural Abundance! Stereochemistry, Isotope Effects, and Mechanism of the Diels-Alder Reaction of Hexachlorocyclopentadiene with Ethyl Vinyl Ether." Book of Abstracts, 214th National Meeting of the American Chemical Society, Las Vegas, NV; American Chemical Society: Washington, DC, **1997**; ORGN-069, poster.
41. Thomas, A.A.; Sharpless, K.B., "α-Hydroxy-β-Aminophosphonates via the Sharpless Catalytic Asymmetric Aminohydroxylation." Book of Abstracts, 213th National Meeting of the American Chemical Society, San Francisco, CA; American Chemical Society: Washington, DC, **1997**; ORGN-126, poster.
42. Thomas, A.A.; Garner, C.M., "Selective Metalation of Allylic Systems: Comparison of Reactivity of Endo and Exocyclic Alkenes." Presented at the 207th National Meeting of the American Chemical Society, San Diego, CA, **1994**; ORGN-189, talk.
43. Thomas, A.A.; Garner, C.M., "Metalation of Endo and Exocyclic Alkenes: Anomalous High Reactivity of β-Pinene." Presented at the 49th Southwest Regional Meeting of the American Chemical Society, Austin, TX, **1993**; ORGN-196, talk.
44. Thomas, A.A.; Garner, C.M., "C_2–Chiral Cyclic Dienes Derived from β-Pinene: Possible Precursors to Auxiliaries for Asymmetric Synthesis." Book of Abstracts, 49th Southwest Regional Meeting of the American Chemical Society, Austin, TX; American Chemical Society: Washington, DC, **1993**; ORGN-338, poster.
45. Thomas, A.A.; Garner, C.M., "The Preparation of New C_2–Chiral Dienes and Cyclic Boranes for Asymmetric Hydroboration." Book of Abstracts, 48th Southwest Regional Meeting of the American Chemical Society, Lubbock, TX; American Chemical Society: Washington, DC, **1992**; ORGN-253, poster.
46. Thomas, A.A.; Garner, C.M., "The Preparation of Dienes and Cyclic Boranes for Asymmetric Synthesis," Book of Abstracts, 47th Southwest Regional Meeting of the American Chemical Society, San Antonio, TX; American Chemical Society: Washington, DC, **1991**; ORGN-269, poster.

Other Conferences Attended

1. 12th International Conference on Alzheimer's Drug Discovery, Jersey City, NJ, **2011**.
2. Cancer Research: A Vital Partnership in Cancer Drug Discovery and Development., New Orleans, LA, **2009**.
3. 6th Int. Symposium on Targeted Anticancer Therapies, Bethesda, MD, **2008**.
4. Protein Kinase Targets (CHI), Boston, MA, **2007**.
5. Keystone Conference: Cancer and Kinases: Lessons from the Clinic, Santa Fe, NM, **2006**.
6. Gordon Research Conference: Fibronectin, Integrins and Related Molecules, Ventura, CA, **2005**.
7. Drew University Residential School on Medicinal Chemistry, Madison, NJ, **2003**.