Scott D. Bembenek, PhD

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Profile

Expert drug discovery scientist and computational chemist with a proven track record of designing successful clinical candidates.

Experience

4/2019–Present ***Founder & CEO, Denovicon Therapeutics***

Denovicon Therapeutics, 1130 Wall St #558, La Jolla, CA 92037

Denovicon Therapeutics was founded in 2019 with the goal to accelerate and improve the development of small-molecule therapeutics by utilizing its decades' worth of drug discovery expertise, proven computational platform, state-of-the-art hardware infrastructure, and proprietary AI–molecular modeling (hybrid) algorithm. We are currently focused on small-molecule therapies for oncology and immuno-oncology targets.

4/2018–3/2019 ***Senior Principal Scientist, Computer-Aided Drug Discovery***
4/2013–3/2018 ***Principal Scientist, Computer-Aided Drug Discovery***
4/2007–3/2013 ***Senior Scientist, Computer-Aided Drug Discovery***
3/2002–3/2007 ***Scientist, Computer-Aided Drug Discovery***

Johnson & Johnson (Janssen) Pharmaceutical Research & Development, 3210 Merryfield Row, San Diego, CA 92121

- Key member of the teams that developed 7 clinical candidates for immunology and oncology
- Developed and successfully applied a computational approach that directly led to a clinical candidate for oncology (entering Phase 2) and reduced the early R&D timeline by almost 50%
- Led multiple high-profile portfolio projects from hit identification to clinical candidacy
- Supported a diverse set of therapeutic targets: enzymes, kinases, ion channels, GPCRs, peptide design, protein-protein interactions, cytokines, nuclear hormone receptors.
- Gained expertise on several computational drug discovery techniques such as: quantum chemistry calculations, FEP, conformational analysis, pharmacophore modeling, QSAR, docking (manual, fast, QM/MM), homology modeling, MD simulations, sequence analysis, cheminformatics, cluster analysis, ligand efficiency/fit quality, fragment-based methods, de novo/generative design, machine learning, AI, and ADME/Tox modeling.
- Managed scientists, summer interns, and postdoctoral associates.
- Chaired the global kinase initiative to identify and leverage both internal and external technologies/expertise (in chemistry, biology, and computation) for improved support of kinase projects across all therapeutic areas.
- Used internal data and a novel Monte Carlo algorithm to identify an optimized (mini) kinase panel that allowed more compounds to be screened early on, more quickly, and at much less cost (estimated at an 82% yearly cost savings). As such, the process of determining which compounds to move forward was dramatically improved. This mini kinase panel has become the standard kinase panel for global J&J.
- Created the internal master kinase sequence database (which leverages a proprietary sequence alignment algorithm), analyzer, and web frontend. It is currently the go-to tool for kinase sequence analyses for global J&J.
- Developed a novel computational platform that resulted in the identification of the small-molecule lead series for a major protein-protein interaction target.
- First computational chemist to officially co-lead a project alongside the chemistry and biology leads.

- Successfully led the effort to use data driven analyses to identify target profiles for phenotypic screens.
- Played a major role in the development of and training on the initial cheminformatics platform
- Successfully maintained an ambitious therapeutic project workload of (on average) five projects at various stages in the drug discovery process.

11/1999-2/2002 ***Postdoctoral Research Associate***
Colorado State University, Fort Collins, CO
- Developed a novel analytical theory for dipolar fluids
- Created numerical analysis code to solve nonlinear partial differential equations
- Created numerical analysis code to solve multidimensional integrals using Monte Carlo methods
- Created numerical analysis code to calculate Fourier transforms
- Investigated the use of instantaneous normal modes in time correlation calculations

10/1997-10/1999 ***National Research Council Fellow***
Army Research Laboratory, Weapons & Materials Research Directorate, Aberdeen, MD
- Created molecular dynamics and Monte Carlo simulation code to study model energetic systems
- Developed new method for parameterizing interaction potentials for complex systems

9/1993-7/1997 ***Graduate Student Researcher***
University of Kansas, Lawrence, KS
- Developed a novel theory of the glass transition and structural localization
- Investigated the application of density functional theory to glassy systems
- Created molecular dynamics simulation code for several condensed phase systems
- Performed instantaneous normal mode analysis on a variety of condensed phase systems
- Created code for statistical analysis

Education

9/1993-7/1997 ***PhD, Theoretical Chemical Physics*** (Honors)
University of Kansas, Lawrence, KS
"Localization in Glasses and Supercooled Liquids"

9/1989-5/1993 ***BS, Chemistry, Physics***
Carroll University, Waukesha, WI

Honors, Awards, and Fellowships

- J&J Encore Award (computational assessment of a novel target, which helped lead to project initiation), 2019
- J&J Leadership Award (leadership skills as chair of the kinase working group), 2018
- J&J Encore Award (leadership skills as chair of the global CADD meeting), 2018
- J&J Encore Award (leadership skills on a high-profile protein-protein interaction target), 2017
- J&J Encore Award (identification of the lead series for a high-profile protein-protein interaction target), 2016
- J&J Encore Award (identification of a small molecule inhibitor for a high-profile protein-protein interaction target), 2011
- J&J Encore Award (design of novel computational methods for protein-protein interactions), 2011
- J&J Encore Award (risk taking, judgment, and achievements on a kinase project), 2007
- J&J Encore Award (risk taking and achievements on Cathepsin S project), 2007
- J&J Encore Award (role in benchmarking a new HTS assay), 2006
- J&J Vision Award (role in the development of the cheminformatics platform), 2003
- National Research Council Postdoctorate Fellowship, 1997-1999
- Final Dissertation Defense completed with Honors, 1997
- Paul Gilles Outstanding Doctoral Candidate Award, 1997
- Oral Examination completed with Honors, 1996
- Argersinger Summer Fellowship for Outstanding First Year Graduate Student, 1994

- KUFS Fellowship for Outstanding Incoming Graduate Student, 1993.
- Bailey-Phillips Fellowship for Outstanding Incoming Graduate Student, 1993

Professional Activities

- Editorial Board Member, *Medicine in Drug Discovery*, 2019–Present

- Fourth Annual Modern Drug Discovery and Development Summit, San Diego, CA, Oct 17, 2008, Combination Therapeutics Section Chair

- Cambridge Healthtech Institute's Second Annual Fragment-Based Drug Discovery, San Diego, CA, May 15, 2007, Round Table Discussion Chair: Computational Tools for Fragment-Based Drug Discovery

- American Physical Society Meeting, Kansas City, MO, March 27, 1997, General Physics Section Chair

Invited Talks

- Chinese National Compound Library, Pudong, Shanghai, China, August 19, 2019, "The Role of Computational Approaches in Drug Discovery"

- University of California, San Diego, CHEM 185/285: Introduction to Computational Chemistry, May 28, 2018, "Computational Chemistry in Drug Discovery"

- University of California, San Diego, Chemistry-Biology Interfaces Training Program Career Day, San Diego, CA, June 16, 2017, "Working in Drug Discovery: A Computational Chemistry Perspective"

- Cambridge Healthtech Institute's Eighth Annual Kinase Inhibitor Chemistry, San Diego, CA, April 25, 2017, "Determination of a Focused Mini-Kinase Panel for Early Identification of Selective Kinase Inhibitors"

- Schrodinger User Group Meeting, La Jolla, CA, May 10, 2016, "The Role of Iron Complexation, Strain, and Water in Prolyl Hydroxylase (PHD2) Drug Design"

- University of California, San Diego, Inorganic Chemistry Seminar, San Diego, CA, April 6, 2012, "Computational Approach to HIF Prolyl Hydroxylase (PHD2) Drug Design"

- American Chemical Society Course on Structure Based Drug Design, La Jolla, CA, November 10, 2011, "Computer-Aided Drug Discovery of HIF Prolyl Hydroxylase Inhibitors"

- University of California, San Diego, Michael Gilson Group Meeting, San Diego, CA, August 30, 2011, "Computer-Aided Drug Discovery of HIF Prolyl Hydroxylase Inhibitors"

- Gordon Research Conference on Computer Aided Drug Design, West Dover, VT, July 17–22, 2011, "Computer-Aided Drug Discovery of HIF Prolyl Hydroxylase Inhibitors"

- American Chemical Society Course on Structure Based Drug Design, La Jolla, CA, November 3, 2010, "Docking, Quantum Calculations and Crystal Structure Analysis: Studies of Hypoxia-Inducible Factor Prolyl Hydroxylase"

- Schrodinger User Group Meeting, La Jolla, CA, June 30, 2010, "Docking, Quantum Calculations and Crystal Structure Analysis: Studies of Hypoxia-Inducible Factor Prolyl Hydroxylase"

- American Chemical Society Course on Structure Based Drug Design, La Jolla, CA, November 3, 2009, "Lead Identification of Acetylcholinesterase Inhibitors–Histamine H_3 Receptor Antagonists from Molecular Modeling"

- Accelrys Science Forums 2009, San Diego, CA, June 18, 2009, "Lead Identification of Acetylcholinesterase Inhibitors Histamine H_3 Receptor Antagonists from Molecular Modeling"

- World Pharmaceutical Congress, Targeting Alzheimer's with Novel Therapeutics, Philadelphia, PA, June 11, 2009, "Lead Identification of Acetylcholinesterase Inhibitors–Histamine H_3 Receptor Antagonists from Molecular Modeling"

- Fourth Annual Modern Drug Discovery and Development Summit, San Diego, CA, October 17, 2008, "Lead Identification of Acetylcholinesterase Inhibitors–Histamine H_3 Receptor Antagonists from Molecular Modeling"

- University of Colorado, Colorado Springs, Sigma Xi Scientific Research Society Lecture, September 25, 2008, "Novel Approach to Modeling G-Protein Coupled Receptors: Application to Histamine H_3"

- University of Colorado, Colorado Springs, Senior Chemistry Majors Seminar, September 25, 2008, "Computer Aided Drug Discovery"

- University of Colorado, Colorado Springs, Student Affiliates Meeting, September 25, 2008, "Chemistry in Drug Discovery"

- Accelrys Scientific and Technical Seminar Series, San Diego, CA, June 12, 2008, "Ligand Efficiency: Trends and Physical Interpretation"

- Cambridge Healthtech Institute's Second Annual Fragment-Based Drug Discovery, San Diego, CA, May 14, 2007, "Ligand Efficiency: Trends, Physical Models, and Implications"

- San Diego Bioinformatics Forum, San Diego, CA, April 11, 2006, "Novel Approach to Modeling G-Protein Coupled Receptors: Application to Histamine H_3"

- University of California, Merced, Quantitative Systems Biology Lecture Series, March 8, 2006, "Novel Approach to Modeling G-Protein Coupled Receptors: Application to Histamine H_3"

- Pacifichem 2005, Honolulu, HI, December 16, 2005, "From Distances to Coordinates and Back Again"

- Missouri State University, Chemistry Colloquium, September 19, 2005, "Computer-Aided Drug Discovery"

- SciTegic Cheminformatics Seminar, San Diego, CA, May 21, 2004, "The Role of Pipeline Pilot in Cheminformatics at Johnson & Johnson Pharmaceutical Research & Development, L.L.C"

- U.S. Army Research Laboratory, Aberdeen, MD, Branch Seminar, August 19, 1998, "Localization in Glasses and Supercooled Liquids"

Publications

- "Drug Repurposing and New Therapeutic Strategies for SARS-CoV-2 Disease Using a Novel Molecular Modeling-AI Hybrid Workflow", **S.D. Bembenek**, *ChemRxiv Preprint.* https://doi.org/10.26434/chemrxiv.12449081 (2020).

- "Discovery, Optimization, and Evaluation of Potent and Highly Selective PI3Kγ and PI3Kδ Dual Inhibitors", H. Jia, G. Dai, W. Su, K. Xiao, J. Weng, Z. Zhang, Q. Wang, T. Yuan, F. Shi, Z. Zhang, W. Chen, Y. Sai, J. Wang, X. Li, Y. Cai, J. Yu, P. Ren, J. Venable, T. Rao, J. Edwards, and **S.D. Bembenek**, *J. Med. Chem.* **62**, 4936 (2019).

- "Beyond Traditional Structure-Based Drug Design: The Role of Iron Complexation, Strain, and Water in the Binding of Inhibitors for Hypoxia-Inducible Factor Prolyl Hydroxylase 2", **S.D. Bembenek**, H. Venkatesan, H.M. Peltier, M.D. Rosen, T.D. Barrett, K.C. Kanelakis, H.L. Palomino, T.I. Brondstetter, T. Mirzadegan, and M.H. Rabinowitz, *ACS Omega.* **4**, 6703 (2019).

- "D3R Grand Challenge 4: Blind Prediction of Protein-Ligand Poses, Affinity Rankings, and Relative Binding Free Energies", C.D. Parks, Z. Gaieb, M. Chiu, H. Yang, C. Shao, W.P. Walters, J.M. Jansen, G. McGaughey, R.A. Lewis, **S.D. Bembenek**, M.K. Ameriks, T. Mirzadegan, S.K. Burley, R.E. Amaro, M.K. Gilson, *ChemRxiv Preprint.* https://doi.org/10.26434/chemrxiv.11363006 (2019).

- "D3R Grand Challenge 3: Blind Prediction of Protein-Ligand Poses and Affinity Rankings", Z. Gaieb, C.D. Parks, M. Chiu, H. Yang, C. Shao, W.P. Walters, M.H Lambert, N. Nevins, **S.D. Bembenek**, M.K. Ameriks, T. Mirzadegan, S.K. Burley, R.E. Amaro, M.K. Gilson, *J. Comput. Aided. Mol. Des.* **33**, 1 (2019).

- "Determination of a Focused Mini Kinase Panel for Early Identification of Selective Kinase Inhibitors", **S.D. Bembenek**, G. Hirst, and T. Mirzadegan, *J. Chem. Inf. Model* **58**, 1434 (2018).

- "A Prospective Virtual Screening Study: Enriching Hit Rates and Designing Focus Libraries to Find Inhibitors of PI3Kδ and PI3Kγ", K.L. Damm-Ganamet, **S.D. Bembenek**, J.W. Venable, G.G. Castro, L. Mangelschots, D.C.G. Peeters, H.M. Mcallister, J.P. Edwards, D. Disepio, and T. Mirzadegan, *J. Med. Chem.* **59**, 4302 (2016).

- "Extending Kinome Coverage by Analysis of Kinase Inhibitor Broad Profiling Data", E. Jacoby, G. Tresadern, **S.D. Bembenek**, B. Wroblowski, C. Buyck, J. Neefs, D. Rassokhin, A. Poncelet, J. Hunt, H. van Vlijmen, *Drug Discovery Today* **20**, 652 (2015).

- "Functional Studies of Interaction Between Huwentoxin-IV and Voltage-Gated Sodium Channel Nav1.7", A.Y. Shih, **S. Bembenek**, N. Minassian, R. Neff, Y. Liu, M. Flinspach, S. Edavettal, N. Wu, M. Maher, A. Wickenden, T. Mirzadegan, *Biophysical Journal* **102**, 324a (2012).

- "Pharmacological Characterization of 1-(5-Chloro-6-(Trifluoromethoxy)-1H-Benzoimidazol-2-yl)-1H-Pyrazole-4-Carboxylic Acid (JNJ-42041935), A Potent and Selective HIF Prolyl Hydroxylase (PHD) Inhibitor", T.D. Barrett, H.L. Palomino, T.I. Brondstetter, K.C. Kanelakis, X. Wu, P.V. Haug, W. Yan, A. Young, H. Hua, J.C. Hart, D.T. Tran, H. Venkatesan, M.D. Rosen, H.M. Peltier, K. Sepassi, M.C. Rizzolio, **S.D. Bembenek**, T. Mirzadegan, M.H. Rabinowitz, N.P. Shankley, *Mol. Pharmacol.* **79**, 910 (2011).

- "Benzimidazole-2-Pyrazole HIF Prolyl 4-Hydroxylase Inhibitors as Oral Erythropoietin Secretagogues", M.D. Rosen, H. Venkatesan, H.M. Peltier, **S.D. Bembenek**, K.C. Kanelakis, L.X. Zhao, B. Leonard, F.M. Hocutt, X. Wu, H.L. Palomino, T.I. Brondstetter, P.V. Haug, L.Cagnon, W.Yan, L.A. Liotta, A. Young, T. Mirzadegan, N.P. Shankley, T.D. Barrett, M.H. Rabinowitz, *ACS Med. Chem. Lett.* **1**, 526 (2010).

- "Diazinones as P2 Replacements for Pyrazole-Based Cathepsin S Inhibitors", M.K. Ameriks, **S.D. Bembenek**, M.T. Burdett, I.C. Choong, J.P. Edwards, D. Gebauer, Y.Gu, L. Karlsson, H.E. Purkey, B.L. Staker, S. Sun, R.L. Thurmond, J. Zhu, *Bioorg. Med. Chem. Lett.* **20**, 4060 (2010).

- "Thioether Acetamides as P3 Binding Elements for Tetrahydropyrido-Pyrazole Cathepsin S Inhibitors", D.K. Wiener, A. Lee-Dutra, **S. Bembenek**, S. Nguyen, R.L. Thurmond, S. Sun, L. Karlsson, C. A. Grice, T. K. Jones, J.P. Edwards, *Bioorg. Med. Chem. Lett.* **20**, 2379 (2010).

- "Pyrazole-Based Cathepsin S Inhibitors with Arylalkynes as P1 Binding Elements", M.K. Ameriks, F.U. Axe, **S.D. Bembenek**, J.P. Edwards, Y. Gu, L. Karlsson, M. Randal, S. Sun, R.L. Thurmond, J. Zhu, *Bioorg. Med. Chem. Lett.* **19**, 6131 (2009).

- "Ligand Efficiency and Fragment Based Drug Discovery", **S.D. Bembenek**, B.A. Tounge and C.H. Reynolds, *Drug Discovery Today* **14**, 278 (2009).

- "Lead Identification of Acetylcholinesterase Inhibitors–Histamine H_3 Receptor Antagonists from Molecular Modeling", **S. D. Bembenek**, J.M. Keith, M.A. Letavic, R. Apodaca, A.J. Barbier, L. Dvorak, L. Aluisio, K.L. Miller, T.W. Lovenberg and N.I. Carruthers, *Bioorg. Med. Chem.* **16**, 2968 (2008).

- "Dual Binding Site Inhibitors of B-Raf Kinase", R.L. Wolin, **S.D. Bembenek**, J. Wei, S. Crawford, K. Lundeen, A. Brunmark, L. Karlsson, J.P. Edwards and J. Blevitt. *Bioorg. Med. Chem. Lett.* **18**, 2825 (2008).

- "Ligand Binding Efficiency: Trends, Physical Basis, and Implications", C.H. Reynolds, B.A. Tounge and **S.D. Bembenek**, *J. Med. Chem.* **51**, 2432 (2008).

- "The Identification of a Potent, Selective and Orally Active Leukotriene A_4 Hydrolase Inhibitor with Anti-Inflammatory Activity", C.A. Grice, K.L. Tays, B.M. Savall, J. Wei, C.R. Butler, F.U. Axe, **S.D. Bembenek**, A.M. Fourie, P. Dunford, K. Lundeen, F. Coles, X. Xue, J.Riley, K. Williams, L. Karlsson, and J.P. Edwards, *J. Med. Chem.* **15**, 4150 (2008).

- "A Novel B-RAF Inhibitor Blocks Interleukin-8 (IL-8) Synthesis in Human Melanoma Xenografts, Revealing IL-8 as a Potential Pharmacodynamic Biomarker", S. Crawford, D. Belajic, J. Wei, J.P. Riley, P.J. Dunford, **S. Bembenek**, A. Fourie, J.P. Edwards, L.Karlsson, A. Brunmark, R.L. Wolin and J.M. Blevitt, *Mol. Cancer Ther.* **7**, 492 (2008).

- "The Role of Molecular Size in Ligand Efficiency", C.H. Reynolds, **S.D. Bembenek** and B.A. Tounge, *Bioorg. Med. Chem. Lett.* **17**, 4258 (2007).

- "Three-Dimensional Models of Histamine H_3 Receptor Antagonist Complexes and their Pharmacophore", F.U. Axe, **S.D. Bembenek** and S. Szalma, *J. Mol. Graph. Model.* **24**, 456 (2006).

- "Calculation of the Surface Tension of Oxygen using Molecular Dynamics Simulations", **S.D. Bembenek**, *J. Chem. Phys.* **124**, 014709 (2006).

- "A Kinetic Theory for Dilute Dipolar Systems", **S.D. Bembenek** and G. Szamel, *J. Chem. Phys.* **117**, 8886 (2002).

- "Instantaneous Normal Modes Analysis of Amorphous and Supercooled Silica", **S.D. Bembenek** and B.B. Laird, *J. Chem. Phys.* **114**, 2340 (2001).

- "The Role of Attractive Interactions in Self-Diffusion", **S.D. Bembenek** and G. Szamel, *J. Phys. Chem. B* **104**, 10647 (2000).

- "Transitioning Model Potentials to Real Systems. II: Application to Molecular Oxygen", **S.D. Bembenek** and B. M. Rice, *J. Chem. Phys.* **113**, 2354 (2000).

- "Transitioning Model Potentials to Real Systems", **S.D. Bembenek** and B. M. Rice, *Mol. Phys.* **97**, 1085 (1999).

- "Hydrogen Bonding in Tungsten (VI) Salicylate Free Acids", T.E. Baroni, **S.D. Bembenek**, J.A. Heppert, R.R. Hodel, B.B. Laird, M.D. Morton, F. Takusagawa, *Coordination Chemistry Reviews* **174**, 255 (1998).

- "Localization and the Glass Transition", B.B. Laird and **S.D. Bembenek**, *J. Phys.: Condens. Matter* **8**, 9569 (1996).

- "The Role of Localization in Glasses and Supercooled Liquids", **S.D. Bembenek** and B.B. Laird, *J. Chem. Phys.* **104**, 5199 (1996).

- "Instantaneous Normal Modes and the Glass Transition", **S.D. Bembenek** and B.B. Laird, *Phys. Rev. Lett.* **74**, 936 (1995).

Books

- *The Cosmic Machine: The Science That Runs Our Universe and the Story Behind It.* **S. Bembenek**, San Diego: Zoari Press, 2017.

Book Chapters

- "A Web-Based Chemoinformatics System for Drug Discovery", in *Concepts, Methods, and Tools for Drug Discovery*; Methods in Molecular Biology Series 275, **S.D. Bembenek**, B.A. Tounge, S.J. Coats and C.H. Reynolds, Humana Press, NJ, (2004).

Patents (WIPO and US)

- "Inhibitors of Bruton's Tyrosine Kinase and Method of Their Use", N. Arora, G.M. Bacani, J.K. Barbay, **S.D. Bembenek**, M. Cai, W. Chen, C.P. Deckhut, J.P. Edwards, B. Ghosh, B. Hao, K.D. Kreutter, G. Li, M.S. Tichenor, J.D. Venable, J. Wei, J.J.M. Wiener, Y. Wu, Y. Zhu, F. Zhang, Z. Zhang, K. Xiao, US20190284203A1 (2019).

- "Inhibitors of Bruton's Tyrosine Kinase and Method of Their Use", N. Arora, G.M. Bacani, J.K. Barbay, **S.D. Bembenek**, M. Cai, W. Chen, C.P. Deckhut, J.P. Edwards, B. Ghosh, K.D. Kreutter, G. Li, M.S. Tichenor, J.D. Venable, J. Wei, J.J.M. Wiener, Y. Wu, K. Xiao, F. Zhang, Y. Zhu, US20190276471A1 (2019).

- "Inhibitors of Bruton's Tyrosine Kinase and Method of Their Use", M. Cai, N. Arora, G.M. Bacani, J.K. Barbay, **S.D. Bembenek**, W. Chen, C.P. Deckhut, J.P. Edwards, B. Ghosh, K.D. Kreutter, G. Li, M.S. Tichenor, J.D. Venable, J. Wei, J.J.M. Wiener, Y. Wu, K. Xiao, F. Zhang, Y. Zhu, WO2018103060A1 (2018).

- "Inhibitors of Bruton's Tyrosine Kinase and Method of Their Use", M. Cai, N. Arora, G.M. Bacani, J.K. Barbay, **S.D. Bembenek**, W. Chen, C.P. Deckhut, J.P. Edwards, B. Ghosh, B. Hao, K.D. Kreutter, G. Li, M.S. Tichenor, J.D. Venable, J. Wei, J.J.M. Wiener, Y. Wu, Y. Zhu, F. Zhang, Z. Zhang, K. Xiao, WO2018103058A1 (2018).

- "Preparation of Novel Heteroaryl and Heterocycle Compounds for Inhibiting the Activity of PI3K", W. Su, G. Dai, H. Jia, Z. Zhang, J. Weng, J.D. Venable, **S.D Bembenek,** W. Chai, S.P. Meduna, J.M. Keith, W. Eccles, A.D. Lebsack, W.M. Jones, R.C. Smith, WO2016119707A1 (2016).

- "Preparation of Novel Heteroaryl and Heterocycle Compounds as PI3K inhibitors", W. Su, G. Dai, K. Xiao, H. Jia, J.D. Venable, **S.D Bembenek,** W. Chai, US20150291593A1 (2015).

- "Quinazolinones as Prolyl Hydroxylase Inhibitors", **S. D Bembenek**, F. M Hocutt, B.E. Leonard Jr., M. H. Rabinowitz, M.D. Rosen, K.T. Tarantino, H. Venkatesan, US8937078B2 (2015).

- "Preparation of Heteroaryl and Heterocycle Compounds as Inhibitors of PI3K for Treating Inflammatory and Autoimmune Disorders and Cancer", W. Su, G. Dai, K. Xiao, H. Jia, J.D. Venable, **S.D Bembenek**, WO2014015675A1 (2014).

- "Novel Heteroaryl and Heterocycle Compounds as PI3K Inhibitors, Composition and Their Preparation and Use In The Treatment Of Immune-Based Diseases and Cancer", W. Su, G. Dai, K. Xiao, H. Jia, Z. Zhang, J.D. Venable, **S.D Bembenek**, W. Chai, WO2014015830A1 (2014).

- "Preparation of Heteroaryl and Heterocycle Compounds as PI3K Inhibitors", W. Su, G. Dai, K. Xiao, H. Jia, J.D. Venable, **S.D Bembenek**, WO2014015523A1 (2014).

- "Aryl-Substituted Bridged or Fused Diamines as Modulators of Leukotriene A4 Hydrolase", G.M. Bacani, **S.D. Bembenek,** W. Eccles, J.P. Edwards, M.T. Epperson, L. Gomez, C.A. Grice, A.M. Kearney, A.M. Landry-Bayle, A. Lee-Dutra, K.J. McClure, T. Mirzadegan, A. Santillan, Jr., US8344008B2 (2013).

- "Aryl-Substituted Bridged or Fused Diamines as Modulators of Leukotriene A4 Hydrolase", **S.D. Bembenek,** W. Eccles, L. Gomez, C.A. Grice, A.M. Kearney, A.M. Landry-Bayle, T. Mirzadegan, A. Santillan, Jr., US7935725B2 (2011).

- "Aryl-Substituted Bridged or Fused Diamines as Modulators of Leukotriene A4 Hydrolase", G.M. Bacani, **S.D. Bembenek,** W. Eccles, J.P. Edwards, M.T. Epperson, L. Gomez, C.A. Grice, A.M. Kearney, A.M. Landry-Bayle, A. Lee-Dutra, K.J. McClure, T. Mirzadegan, A. Santillan, Jr., US20110257153A1 (2011).

- "Preparation of Quinazolinones as Prolyl Hydroxylase Inhibitors", **S. D Bembenek**, F. M Hocutt, B.E. Leonard Jr., M. H. Rabinowitz, M.D. Rosen, K.T. Tarantino, H. Venkatesan, US20100204226A1 (2010).

- "Preparation of Aryl-Substituted Bridged or Fused Diamines as Therapeutic Modulators of Leukotriene A4 Hydrolase", G.M. Bacani, **S.D. Bembenek,** W. Eccles, J.P. Edwards, M.T. Epperson, L. Gomez, C.A. Grice, A.M. Kearney, A.M. Landry-Bayle, A. Lee-Dutra, K.J. McClure, T. Mirzadegan, A. Santillan, Jr., US20090111794A1 (2009).

- "Preparation of Benzimidazole, Benzothiazole and Benzoxazole Derivatives and Their Use as LTA4 Hydrolase Modulators", F.U. Axe, **S.D. Bembenek**, C.R. Butler, J.P. Edwards, A.M. Fourie, C.A. Grice, B.M. Savall, K.L. Tays, J. Wei, WO2005012297A9 (2007).

- "Pyrimidinyl Imidazoles as Inhibitors of B-Raf Kinase", **S. Bembenek**, C. Butler, H. Cui, J. Edwards, D. Gustin, B. Pio, C. Sehon, J. Wei and R. Wolin, *U.S. Provisional Patent Appl.* (2006).

- "Preparation of Benzimidazole, Benzothiazole and Benzoxazole Derivatives and Their Use as LTA4 Hydrolase Modulators", F.U. Axe, **S.D. Bembenek**, C.R. Butler, J.P. Edwards, A.M. Fourie, C.A. Grice, B.M. Savall, K.L. Tays, J. Wei, WO2005012297A1 (2005).

- "Preparation of Benzimidazole, Benzothiazole and Benzoxazole Derivatives and Their Use as LTA4 Hydrolase Modulators", F.U. Axe, **S.D. Bembenek**, C.R. Butler, J.P. Edwards, A.M. Fourie, C.A. Grice, B.M. Savall, K.L. Tays, J. Wei, WO2005012296A1 (2005).