

**EDWARD G. BROWN, PH.D.**  
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Durham, NC 27702  
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#### SCIENCE EDUCATION & POST-DOCTORAL TRAINING:

- Post-Doctoral Fellow:** Yale University, New Haven, CT; 12/88 - 7/90:
- Chemistry Research Emphasis: Synthesis of Polypropionates and Trichothecene Mycotoxins;
- Post-Doctoral Fellow:** University of Auckland, Auckland, NZ; 8/87 - 8/88:
- Chemistry Research Emphasis: Synthesis of Anthracyclinone Antibiotics;
- Doctor of Philosophy:** University of California, Davis, CA; 4/83 - 12/88:
- Chemistry Research Emphasis: Organic Chemistry/ Natural Product Synthesis;
  - Chemistry Department Graduate Student of the Year Award: 1987;
  - Doctorate in Organic Chemistry Awarded in December, 1988;
- Bachelor of Science:** University of California, Berkeley, CA; 10/75 - 6/80:
- Chemistry: Organic Chemistry Research Emphasis;
  - Alumni Association National Merit Scholar: 1975;
  - B.S. Degree in Chemistry Awarded in June, 1980;

#### WORK EXPERIENCE:

##### 9/07 - Present:

**President & Founding Consultant at Expert Chemistry Services; Ph: (919) 607-4626**  
**(formerly Brown's Chemistry Services);**  
**Present Business Address: P.O. Box 25388; Durham, NC 27702;**

- Currently providing chemistry laboratory research expertise, consulting, data evaluation and expert witness services to clients.
- Serve as an on-site research chemist for clients who need drug intermediates, enzyme inhibitors, chelating agents, etc., synthesized and analyzed at their own laboratory in the RTP area.
- Extremely broad grasp of chemistry, biology and toxicology topics: expertise includes chemical analysis techniques, carbohydrates, peptides, amino acids, proteins, nucleotides, heterocyclic chemistry, catalysis, organic synthesis, chemical purifications, chemical analysis techniques, solid phase organic synthesis, medicinal chemistry, drug half life, metabolism, etc.
- Expert services have included data analysis and chemical evaluation of analytical evidence obtained in drug cases; prepared reports and drafted declarations for court cases involving a number of different chemical questions of importance.

##### 8/15 – 12/2022:

**Adjunct Professor of Chemistry at Shaw University; Ph: (919) 546-8309**  
**Business Address: 118 E. South St.; Raleigh, NC 27601;**

- Taught undergraduates about organic chemistry and the techniques used for analyzing and purifying chemicals. Retained on the Adjunct Staff to teach a lecture course (3 hours per week) and a lab course (3 hours per week) covering organic chemistry topics during semesters when needed.

**3/11 - 1/12:**

**Patent Examiner at U.S. Patent and Trademark Office;  
Business Address: 400 Dulany Street; Alexandria, VA 22314.**

**Ph: (571) 272-0779**

- Primary responsibilities included in-depth analysis of patent applications & evaluation of claims.
- Performed extensive literature searches using USPTO's comprehensive database of patents and published research articles, etc.

**6/06 - 9/07:**

**Intellectual Property Consultant at Voyager Pharmaceuticals, Inc;  
Business Address: 8540 Colonnade Center Dr #501; Raleigh, NC 27615.**

**Ph: (919) 846-4880**

- Primary responsibilities included analysis of office action rejections & objections then drafting responses to office actions from USPTO and foreign patent offices. Researched and drafted responses rebutting rejections involving U.S.C. 102, 103 and 112 issues.
- Worked on daily basis with outside counsel via phone and email on issues relevant to Voyager's IP prosecution.

**9/05 - 6/06:**

**Principal Information Analyst for Information Analysis-Genetics at GSK;  
Business Address: 5 Moore Dr; RTP, NC 27713.**

**Ph: (919) 483-2100**

- Ran electronic literature searches using public & proprietary databases. Provided analysis reports & updates to GSK's international business leaders and scientific stakeholders, including scientific research teams.
- Responsible for performing literature searches in specific disease areas including: cancer, malaria and obesity.
- Served as Information Analysis-Genetics representative on several large clinical and pre-clinical teams developing new cancer drugs and obesity treatments. Responsibilities included keeping the IAG group up-to-date with research by these science teams and other business units.

**2/02 - 11/04:**

**Manager, Intellectual Property at Inspire Pharmaceuticals, Inc;  
Business Address: 4222 Emperor Blvd #200; Durham, NC 27713.**

**Ph: (919) 941-9777**

- Gained approximately three years patent prosecution experience in areas of research covering pharmaceutical inventions and medicinal chemistry methodology. Developed literature search expertise using SciFinder as intellectual property science liaison for Discovery Division.
- Worked closely with in-house counsel and outside counsel (via email, express mail and telephone conversations) on Inspire's patent prosecution work.
- Prosecution experience included preparation of science sections and claims in 6 U.S. provisional patent applications and in 8 U.S. non-provisional patent applications; analyzed and summarized technical details cited in rejections in over 70 office actions from the USPTO and foreign patent offices; drafted persuasive rebuttals and arguments.
- Patent drafting experience also included creation of chemical structures, Markush formulas, schemes and chemistry tables in patent applications. Familiar with both ChemDraw and IsisDraw programs.
- Provided guidance to other Inspire scientists on methods for unraveling and evaluating complicated Markush-type chemical structures, generic protein sequences and nucleotide analog sequences in patents and patent publications.

**5/98 - 2/02:**

**Senior Research Chemist at Inspire Pharmaceuticals, Inc;  
Business Address: 4222 Emperor Blvd #200; Durham, NC 27713.**

**Ph: (919) 941-9777**

- Synthesized and purified biologically-active heterocycles, polymers, nucleosides, nucleotides, and novel phosphate esters from complex mixtures for drug-discovery and medicinal chemistry uses.

- Used combinatorial chemistry for synthesis of small-molecule compound libraries.
- Developed new analytical techniques for heterocycles using HPLC and LCMS.
- Served as Chemistry Group Operator for Waters LCMS analytical instrument from 2001 - 2002. Helped to increase group productivity by teaching the research group how to use the new instrument for their own chemical analyses.
- Research led to co-inventorship as listed on 10 Inspire patents and to co-authorship on several publications covering nucleotides and indoles for use in disease treatments.
- Trained and supervised three chemistry interns in medicinal chemistry research projects and chemical analysis techniques. Four years supervisory experience.

**6/91 - 11/97:**

**President and Consultant at Brown's Chemistry Services;  
Business Address: 1697 Springbrook Rd; Lafayette, CA 94549.**

**Ph: (510) 906-0989**

- Established an independent chemistry consulting business and gradually built it from a part-time endeavor in 1991 to a full-time business in 1997. Provided on-site chemistry expertise and expert witness testimony in chemistry, drug and environmental criminal-court cases.
- Furnished contract-chemistry capabilities to San Francisco Bay Area research labs in 1996-1997.
- Successfully completed 3 chemistry-, peptide-, & nucleotide-related research contracts with government investigators at Lawrence Berkeley National Laboratory.
- Assisted attorneys in chemistry-related matters involved in 25+ drug-related court cases.
- Provided court testimony as expert on chemistry issues in 3 Federal and 2 State of California illicit drug-manufacturing cases.
- Acted as science advisor to defense attorneys handling their clients' clandestine drug (LSD, methamphetamine, PCP, etc.) manufacturing cases.

**5/92 - 7/96:**

**Research Scientist II at Chiron Corporation;  
Business Address: 4560 Horton St; Emeryville, CA 94608.**

**Ph: (510) 655-8730**

- Patented new series of polystyrene resin-bound linkers for use in peptide synthesis and solid-phase organic reactions; co-inventor on a patented solid-phase synthesis method for generating novel heterocycles. Purified biologically-active substances from complex mixtures chromatographically using HPLC. Analyzed by LCMS, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, FTIR, UV, etc.
- Combinatorial chemistry expert. Optimized organic reactions for solid-phase synthesis applications (10 mg - 100 g scale) in drug discovery.
- Developed solid-phase <sup>13</sup>C-NMR technique for the chemical analysis of resin-bound linkers and chemical building blocks.
- Supervised one Masters-level research assistant in combinatorial chemistry/ organic synthesis. Three years supervisory experience.
- In addition to inventorship on the two patents listed above, research achievements led to co-authorship on 5 scientific publications.

**10/91 - 5/92:**

**Research Chemist at Seres Laboratory, Inc;  
Business Address: 3331 Industrial Dr #B; Santa Rosa, CA 95403.**

**Ph: (707) 526-4526**

- Synthesized antiviral agents, heterocycles and crystallization seed materials. Prepared compounds for contract-laboratory chemistry clients.

**6/90 - 6/91:**

**Staff Scientist at Lawrence Berkeley National Laboratory;  
Business Address: 1 Cyclotron Rd; Berkeley, CA 94720.**

**Ph: (510) 486-4000**

- Instructed 4 interns in medicinal chemistry projects. Synthesized D<sub>1</sub>-dopaminergic drugs, organometallic reagents, heterocycles and starting materials for use in positron emission tomography (PET) studies.

**4/83 - 7/90:****Post-Doctoral Training & Graduate Research: Yale University, University of Auckland, UC Davis**

- Research areas focused primarily on natural products synthesis, new chemistry techniques, and stereoselective construction of chiral materials. Graduate- and post-doctoral research led to co-authorship on seven peer-reviewed research publications and one research presentation.
- See Science Education and Post-Doctoral Training section above as well as Publication List for more details on areas of research emphasis and accomplishments.
- Research Advisor at University of California, Davis: Mark Kurth, Ph.D.
- Research Advisor at University of Auckland, Auckland NZ: P. Stewart Rutledge, Ph.D.
- Research Advisor at Yale University: Frederick Ziegler, Ph.D.

**10/80 - 2/83:**

**Research Chemist at SRI International, Inc; Ph: (650) 859-2000**  
**Business Address: 333 Ravenswood Ave; Menlo Park, CA 94025.**

- Synthesized and purified folate analogues for use as antineoplastic agents.
- Research successes led to co-authorship on two peer-reviewed journal publications.

**4/79 - 6/80:**

**Undergraduate Research Assistant at University of California, Berkeley; Ph: (510) 642-5882**  
**Business Address: Dept. of Chemistry; UC Berkeley, CA 94720.**

- Developed stereoselective method for epoxidation of homoallylic alcohols.
- Research successes led to one scientific journal publication & one research seminar presentation.

**OTHER QUALIFICATIONS, SKILLS & CERTIFICATIONS:****Registered Patent Agent:**

- Passed USPTO patent bar exam in October, 2004.
- USPTO Patent Agent Registration No.: 56168; Registration Date: 11/19/2004.

**Computer Hardware and Software Use:**

- Familiar with use of Microsoft products such as Word, Excel and PowerPoint as well as products like ChemDraw, Isis Draw, etc.
- Trained in use of PC and Mac products and formats.
- Able to perform subject and author searches using Google, Yahoo, and other web-based search engines including the USPTO web site patent search tools. Also able to learn & use proprietary search programs and databases after initial training sessions.

**Scientific Journal Referee:**

- Given my expertise in chemistry, I act as a referee for the ACS journals titled Organic Letters & Journal of Organic Chemistry. In this capacity, I review and evaluate the scientific merits of manuscripts submitted to these journals by research teams.

**Professional Memberships:**

- American Chemical Society Member.
- North Carolina Bar Association Intellectual Property Division Member.

**PATENTS, PUBLICATIONS, SEMINARS, PRESENTATIONS and RESEARCH ABSTRACTS:**

- My research has led to over 50 research articles, patents, and abstracts. Please see attached list.

**PUBLISHED U.S. & P.C.T. PATENT APPLICATIONS and ISSUED U.S. PATENTS:**

1. Crean, Christopher S.; Brown, Edward G. "Prodrugs of KV7 Channel Openers," WIPO Publication No. WO/2022/198114 published September 22, 2022. International Application No.: PCT/US2022/021057; International Filing Date: March 20, 2022.
2. Crean, Christopher S.; Brown, Edward G. "Prodrugs of KV7 Channel Openers," WIPO Publication No. WO/2022/198115 published September 22, 2022. International Application No.: PCT/US2022/021058; International Filing Date: March 20, 2022.
3. Crean, Christopher S.; Brown, Edward G. "Prodrugs of KV7 Channel Openers," WIPO Publication No. WO/2022/198116 published September 22, 2022. International Application No.: PCT/US2022/021059; International Filing Date: March 20, 2022.
4. Yerxa, B.R.; Brown, E.G. "Di(uridine-5'-)Tetraphosphate and Salts Thereof," U.S. Publication No. 2009-0326050 A1 published December 31, 2009. Issued as U.S. Patent 7,939,510 on May 10, 2011.
5. Douglass, J.G., III; Yerxa, B.R.; Shaver, S.R.; Peterson, W.M.; Brown, E.G.; Crean, C.S.; Boyer, J.L. "Degradation-Resistant Mononucleoside Phosphate Compounds," U.S. Publication No. 2009-0076256 A1 published March 19, 2009. Issued as U.S. Patent 7,612,047 on November 3, 2009.
6. Douglass, J.G., III; Yerxa, B.R.; Shaver, S.R.; Peterson, W.M.; Brown, E.G.; Crean, C.S.; Boyer, J.L. "Degradation-Resistant Mononucleoside Phosphate Compounds," U.S. Publication No. 2007-0244068 A1 published October 18, 2007. Issued as U.S. Patent 7,435,724 on October 14, 2008.
7. Yerxa, B.R.; Brown, E.G. "Di(uridine-5'-)Tetraphosphate and Salts Thereof," U.S. Publication No. 2006-0258615 A1 published November 16, 2006. Issued as U.S. Patent 7,528,119 on May 5, 2009.
8. Yerxa, B.R.; Brown, E.G. "Di(uridine-5'-)Tetraphosphate and Salts Thereof," U.S. Publication No. 2005-0148540 A1 published July 7, 2005. Issued as U.S. Patent 7,132,410 on November 7, 2006.
9. Boyer, J.L.; Yerxa, B.R.; Plourde, R., Jr.; Brown, E.G.; Douglass, J.G., III; "Compositions for the Treatment of Glaucoma or Ocular Hypertension," U.S. Publication No. 2005-0130931A1 pub'd June 16, 2005. Abnd: January 14, 2008.
10. Pintor, J.J.; Peral, M.A.; Peterson, W.M.; Plourde, R., Jr.; Brown, E.G.; Yerxa, B.R. "Method for Reducing Intraocular Pressure Using Indole Derivatives," U.S. Publication No. 2004-0198803 A1 published October 7, 2004. Abnd: November 29, 2005.
11. Yerxa, B.R.; Brown, E.G. "Di(uridine-5'-)Tetraphosphate and Salts Thereof," U.S. Publication No. 2004-0014713 A1 published January 22, 2004. Issued as U.S. Patent 6,872,710 on March 29, 2005.
12. Yerxa, B.R.; Plourde, R., Jr.; Brown, E.G.; Peterson, W.M. "Method for Reducing Intraocular Pressure," U.S. Publication No. 2003-0186928 A1 published October 2, 2003. Issued as U.S. Patent 7,084,128; August 1, 2006.
13. Cowlen, M.S.; Yerxa, B.R.; Jones, A.C.; Brown, E.G. "Joint Lubrication with P2Y Purinergic Receptor Agonists," U.S. Publication No. 2003-0027785 A1 published February 6, 2003 and PCT Int'l. Publication No. WO03/000056 A1 published with ISR on January 3, 2003. Issued as U.S. Patent 7,109,181 on September 19, 2006.
14. Yerxa, B.R.; Douglass, J.G., III; Shaver, S.R.; Peterson, W.M.; Brown, E.G.; Crean, C.S. "Compositions and Methods for Treating Epithelial and Retinal Tissue Diseases," U.S. Publication No. 2003-0008834 A1 published January 9, 2003 and PCT Int'l. Publication No. WO 03/072067 A2 published September 4, 2003 and PCT Int'l. Publication No. WO03/072067 A3 republished with Int'l Search Report April 28, 2005. Issued as U.S. Patent 7,115,585 on October 3, 2006.
15. Boyer, J.L.; Yerxa, B.R.; Plourde, R., Jr.; Brown, E.G.; Douglass, J.G., III; "Compositions and Methods for the Treatment of Glaucoma or Ocular Hypertension," U.S. Publication No. 2002-0128224 A1 published

September 12, 2002, PCT Int'l. Publication No. WO03/072066 A2 published September 4, 2003 and PCT Int'l. Publication No. WO03/072066 A3 republished with Int'l Search Report November 11, 2004. Issued as U.S. Patent 6,897,201 on May 24, 2005.

16. Pintor, J.J.; Peral, M.A.; Peterson, W.M.; Plourde, R., Jr.; Brown, E.G.; Yerxa, B.R. "Method for Reducing Intraocular Pressure Using Indole Derivatives," U.S. Publication No. 2002-0037887 A1 published March 28, 2002, PCT Int'l. Publication No. WO02/09702 A2 published February 7, 2002, and "Use of Indole Derivatives for the Manufacture of a Medicament for Reducing Intraocular Pressure," PCT Int'l. Publication No. WO02/09702 A3 republished with Int'l Search Report May 8, 2003. Issued as U.S. Patent 6,730,707 on May 4, 2004.
17. Desai, M.C.; Nuss, J.M.; Spear, K.L.; Singh, R.; Renhowe, P.A.; Brown, E.G.; Richter, L.; Scott, B.O. "Combinatorial Libraries of Substrate-Bound Cyclic Organic Compounds," PCT Int'l Publication No. WO96/040201 A1 published with Int'l Search Report Dec. 19, 1996. Issued as U.S. Patent 5,958,792 on September 28, 1999.
18. Brown, E.G.; Nuss, J.M. "Solid Phase Synthesis of N-Alkyl Amides". Issued as U.S. Patent 5,861,532 on January 19, 1999.

## RESEARCH PUBLICATIONS:

1. Juliano, R.; Wang, L.; Tavares, F.; Brown, E.G.; James, L.; Ariyaratna, Y.; Ming, X.; Mao, C; Suto, M. "Structure-Activity Relationships and Cellular Mechanism of Action of Small Molecules that Enhance the Delivery of Oligonucleotides," *Nucleic Acids Research*, 1, (1/18/2018), gkx1320 <https://doi.org/10.1093/nar/gkx1320>, 1-13.
2. Shaver, S.R.; Rideout, J.L.; Pendergast, W; Douglass, J.G., III; Brown, E.G.; Boyer, J.L.; Patel, R.I.; Redick, C.C.; Jones, A.C.; Picher, M.; Yerxa, B.R. "Structure-Activity Relationships of Dinucleotides: Potent and Selective Agonists of P2Y Receptors," *Purinergic Signalling*, 1, (2005), 183-191.
3. Moos, W.H.; Banville, S.C.; Blaney, J.M.; Bradley, E.K.; Braeckman, R.A.; Bray, A.M.; Brown, E.G.; Desai, M.C.; Dollinger, G.D.; Doyle, M.V.; Gibbons, J.A.; Goff, D.A.; Goodson, R.J.; Huebner, V.D.; Johnson, D.E.; Kaufman, S.E.; McGuire, L.A.; Maeji, N.J.; Martin, E.J.; Min, H.Y.; Ng, S.; Nuss, J.M.; Richter, L.S.; Rosenberg, S.; Shoemaker, K.R.; Spear, K.L.; Spellmeyer, D.C.; Stauber, G.B.; Stratton-Thomas, J.R.; Wang, L.; Winter, J.; Wolfgang, G.H.I.; Wong, A.K.; Yamamoto, R.; Zimmerman, R.J.; Zuckermann, R.N. "An Integrated Approach to Exploiting Molecular Diversity," *Medicinal Chemistry: Today and Tomorrow, Proceedings of the AFMC International Medicinal Chemistry Symposium, Tokyo, Japan, Sept. 3-8, 1995*; Yamazaki, M., Ed; Blackwell: Oxford, UK., (1997), 137-142.
4. Brown, E.G.; Nuss, J.M. "Alkylation of Rink's Amide Linker on Polystyrene Resin: A Reductive Amination Approach to Modified Amine-Linkers for the Solid Phase Synthesis of N-Substituted Amide Derivatives," *Tetrahedron Lett.*, 38, (1997), 8457-8460.
5. Nuss, J.M.; Desai, M.C.; Zuckermann, R.N.; Singh, R.; Renhowe, P.A.; Goff, D.A.; Chinn, J.P.; Wang, L.; Dorr, H.; Brown, E.G.; Subramanian, S. "Developing a General Strategy for the Solid Supported Synthesis of Heterocycles: Applications to the Generation of Molecular Diversity and Drug Discovery," *Pure & Applied Chemistry*, 69, (1997), 447-452.
6. Zuckermann, R.N.; Figliozzi, G.M.; Banville, S.C.; Kerr, J.M.; Siani, M.A.; Martin, E.J.; Brown, E.G.; Wang, L. "Automated Tools for the Production of Non-Natural Molecular Diversity," *Innovation and Perspectives in Solid Phase Synthesis. Collected Papers, Third International Symposium, Oxford, England, U.K.*; Epton, R., Ed; Mayflower Worldwide Ltd.: Birmingham, U.K., (1994), 397-402.
7. Zuckermann, R.N.; Martin, E.J.; Spellmeyer, D.C.; Stauber, G.B.; Shoemaker, K.R.; Kerr, J.M.; Figliozzi, G.M.; Goff, D.A.; Siani, M.A.; Simon, R.J.; Banville, S.C.; Brown, E.G.; Wang, L.; Richter, L.S.; Moos, W.H. "Discovery of Nanomolar Ligands for 7-Transmembrane G-Protein-Coupled Receptors from a Diverse N-(Substituted) Glycine Peptoid Library," *J. Med. Chem.*, 37, (1994), 2678-85.
8. Ball, G.E.; O'Neill, R.A.; Schultz, J.E.; Lowe, J.B.; Weston, B.W.; Nagy, J.O.; Brown, E.G.; Hobbs, C.J.; Bednarski, M.D. "Synthesis and Structural Analysis Using 2-D NMR of Sialyl Lewis X (SLe<sup>x</sup>) and Lewis X

- (Le<sup>x</sup>) Oligosaccharides: Ligands Related to E-Selectin [ELAM-1] Binding," *J. Am. Chem. Soc.*, 114, (1992), 5449-51.
- Ziegler, F.E.; Brown, E.G.; Sobolov, S.B. "Single Step Removal of the Allyl Ether Protecting Group with Hydridotetrakis(triphenylphosphine)rhodium [(Ph<sub>3</sub>P)<sub>4</sub>RhH] and Trifluoroacetic Acid," *J. Org. Chem.*, 55, (1990), 3691-3.
  - Brown, E.G.; Cambie, R.C.; Holroyd, S.E.; Johnson, M.; Rutledge, P.S.; Woodgate, P.D. "Experiments Directed Towards the Synthesis of Anthracyclines. XV. Novel Synthetic Homochiral Chloroanthracyclines from Acetal Cyclization," *Aust. J. Chem.*, 43, (1990), 1019-34.
  - Brown, E.G.; Cambie, R.C.; Holroyd, S.E.; Johnson, M.; Rutledge, P.S.; Woodgate, P.D. "Novel Chloroanthracyclines from Acetal-Alkene Cyclization," *Tetrahedron Lett.*, 30, (1989), 4735-6.
  - Kurth, M.J.; Brown, E.G. "Diastereoselective Construction of ( $\alpha$ )-Quaternary Carbon Centers in the Chiral-Auxiliary-Mediated Aza-Claisen Rearrangement of Ketene N-Allyl-N,O-Acetals," *Synthesis*, 5, (1988), 362-6.
  - Kurth, M.J.; Brown, E.G.; Lewis, E.J.; McKew, J.C. "Regioselectivity in the Iodolactonization of 1,6-Heptadiene-4-Carboxylic Acid Derivatives," *Tetrahedron Lett.*, 29, (1988), 1517-20.
  - Kurth, M.J.; Brown, E.G. "Double Diastereoselection in the Iodolactonization of 1,6-Heptadiene-4-Carboxylic Acids," *J. Am. Chem. Soc.*, 109, (1987), 6844-5.
  - DeGraw, J.I.; Tagawa, H.; Christie, P.H.; Lawson, J.A., II; Brown, E.G.; Kisliuk, R.L.; Gaumont, Y. "Synthesis of 5,10-Dideazaaminopterin," *J. Heterocyclic Chem.*, 23, (1986), 1-4.
  - Kurth, M.J.; Brown, E.G.; Decker, O.H.W. "N-Methyloxazolinium Salts: Diastereomer Ratios by <sup>1</sup>H-NMR," *J. Org. Chem.*, 50, (1985), 4984-6.
  - Kurth, M.J.; Brown, E.G.; Hendra, E.; Hope, H. "Stereoselective Synthesis of Octahydro-3-oxospiro[benzofuran-2 (3H), 2'-(2H)-pyran] Systems," *J. Org. Chem.*, 50, (1985), 1115-7.
  - DeGraw, J.I.; Christie, P.H.; Brown, E.G.; Kelly, L.F.; Kisliuk, R.L.; Gaumont, Y.; Sirotnak, F.M. "Synthesis and Antifolate Properties of 10-Alkyl-8,10-Dideazaaminopterin," *J. Med. Chem.*, 27, (1984), 376-80.
  - Bartlett, P.A.; Meadows, J.D.; Brown, E.G.; Morimoto, A.; Jernstedt, K.K. "Carbonate Extension. A Versatile Procedure for Functionalization of Acyclic Homoallylic Alcohols with Moderate Stereocontrol," *J. Org. Chem.*, 47, (1982), 4013-8.

#### SEMINARS, PRESENTATIONS and RESEARCH ABSTRACTS:

- Crean, Christopher; Thrasher, Sarah; Dixon, Angela; Susu, Imani; Brown, Edward; Danshina, Polina "Prodrugs of Kv7 Channel Opener Ezogabine Are Effective in Releasing Ezogabine and Blocking Seizures by Oral and Parenteral Routes of Administration"; Poster presented at American Epilepsy Society Annual Meeting in Nashville, TN on December 5, 2022; Poster Session # 1.280.
- Brown, E.G. "A Beginner's Guide to the Legal Side of Chemical Analysis: DWI, DUI and Drug Analysis Cases". Invited speaker for Maryland Office of the Public Defender CLE Webinar on July 23, 2020 hosted in Baltimore, MD.
- Brown, E.G. "A Beginner's Guide to the Legal Side of Chemical Analysis: DWI, DUI and Drug Analysis Cases". Invited speaker for Mecklenburg County Bar Association CLE Webinar on June 19, 2020 hosted in Charlotte, NC.
- Brown, E.G. "Opium, Opiates and Opioids: A Brief Summary of the Science, History and Terminology in this Field". Invited speaker for Indigent Defense Services CLE Webinar on May 1, 2020 hosted in Durham, NC.
- Brown, E.G. "Examples of False Positives, Errors and Incorrect Assumptions Found in Drug Evidence Analyses and Evaluations". Invited speaker at Rowan County Bar Association meeting on March 4, 2016 in Salisbury, NC.

6. Brown, E.G. "How to Determine if a Substance Is a Controlled Substance: Isomers, Analogues and Salts – and Why it Matters to Your Client". Invited Speaker at the North Carolina Advocates for Justice conference titled "Defending Drug Cases: The Science of Drug Analysis" on April 24, 2015 in Greenville, NC.
7. Brown, E.G. "Is The N.C. G.S. 90-89(5)(j) Drug Code Written Too Broadly If It Makes The Primary Metabolite Of Wellbutrin A Schedule I Controlled Substance?" Poster presented at Duke University Law School at conference titled "Whiskey in the Courtroom: Evolving Trends in Forensic Science"; March 20, 2015
8. Brown, E.G. "Understanding the Science in Drug and DWI Cases". Invited Speaker at Durham County Courthouse for presentation to attorneys as NC Bar continuing legal education credit speaker; December 13, 2013.
9. Brown, E.G. "Fun with Science Patents". Invited Speaker at NC State College of Veterinary Medicine, Raleigh, NC for the Business & Innovation Seminar Series; November 6, 2013.
10. Brown, E.G. "Chemistry Expertise in the Courtroom: When Does Methamphetamine Exist in a Clandestine Drug-Lab Manufacturing Evidence Sample? Sometimes It Depends Upon Who You Hired to Evaluate the Analytical Data. A Case Study". Abstract #137 Presented at the 64<sup>th</sup> Southeastern Regional Meeting of the ACS, Raleigh, NC; November 2012.
11. Brown, E.G. "Chemistry, College Coursework & Career Choices". Invited Speaker for "Careers in Science" presentation at Panther Creek High School, Cary, NC; December, 2010.
12. Brown, E.G. "The Role of the Defense Chemistry Expert in Clandestine Drug Manufacturing Cases: Helping Public Defenders, Defense Attorneys, Prosecutors and Courts Understand Chemistry Facts and Concepts". Abstract #152 Presented at the 59<sup>th</sup> Southeastern Regional Meeting of the ACS, Greenville, SC; October 2007.
13. Brown, E.G.; Boyer, J.; Shaver, S.R. "Detection of INS316, INS365 and Other Nucleotides in Plasma and Fluids by LC/MS," Poster Presented by EGB at 14<sup>th</sup> World Congress of Pharmacology, San Francisco, CA; July, 2002. Int'l. Union of Pharmacology; Bethesda, MD: 2002; Abstract: C47; 100.20.
14. Plourde, R., Jr.; Brown, E.G.; Pelaez, T.; Peral, A.; Peterson, W.; Yerxa, B.; Pintor, J. "Design of Novel Melatonin Analogs for Reduction of Intraocular Pressure". Abstracts of Papers, 14<sup>th</sup> World Congress of Pharmacology, San Francisco, CA; July, 2002. International Union of Pharmacology; Bethesda, MD: 2002; Abstract: A209; 32.24.
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