

Brian Christopher Geyer

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Current Position Senior Research Specialist
Ph.D. Student –Biology
Biodesign Institute and School of Life Sciences
Arizona State University

Research Experience

9/01 – Present *Senior Research Specialist*
Biodesign Institute and School of Life Sciences
Arizona State University

- Currently attempting to express human cholinesterase isoforms in various plant lines with the goal of large-scale production and purification for use as therapeutics for organophosphate intoxication.
- Additionally, working to establish pre-clinical efficacy of a novel HIV vaccine candidate.
- This position requires extensive molecular biology skills, direction of research activities and laboratory supervision of many subordinates.

1/00 – 8/01 *Research Assistant*
Dept. of Microbiology and Immunology
Vanderbilt University

- Examined the role of the HTLV-1 Tax protein in cellular signal transduction pathways.
- Position required keeping the laboratory prepared with necessary materials and supplies, as well as conducting experiments and helping post-doctoral fellows with their experiments.

10/95 – 1/00 *Research Assistant*
Dept. Of Biochemistry and Molecular Biology
Dept. of Radiology
George Washington University Medical Center

Researched and developed novel radioiodinated sigma-1, sigma-2 and retinoic acid receptor ligands to be used for human breast, prostate, melanoma and small cell lung cancer detection *in vivo*.

Position requires using both *in vitro* and *in vivo* experimentation and analyzing and interpreting data as well as preparing data for publication.

11/96 - 3/98 *Research Assistant*
Dept. of Biochemistry and Molecular Biology
George Washington University Medical Center

Researched the biochemistry of apoptotic cell death with special interest in the role of bcl-2, mitochondrial function, p35 and ischemia / reperfusion injury.

Looked for cytochrome c release in I / R injury and chemotherapeutic induced apoptosis. Also attempted to inhibit cell death using p35 and bcl-2 transfectants, antioxidants, caspase inhibitors and other apoptosis inhibitors with the goal of elucidating the transductive mechanism of apoptosis. This position also required journal review, ordering and tracking of supplies and general laboratory maintenance.

7/94 - 10/95 *Laboratory Technician*
Dept. of Pathology
George Washington University Medical Center

Conducted research on the effects of radio waves on tumorigenesis *in vivo*. Responsibilities included record keeping, care for animals and necropsy.

Volunteer Experience

9/02 – Present *Emergency Room Volunteer*
Maricopa County Hospital
Phoenix, AZ

Currently volunteering in the Emergency Room / Trauma center Supporting the trauma and medical teams with the management of critically injured patients for more than 500 hours.

7/96 – 11/99 *Trauma Room Volunteer*
Ambulatory and Critical Care Center
District of Columbia General Hospital

Volunteered in the major trauma and critical care ward at one of the nation's ten busiest emergency rooms and Washington, D.C.'s only public hospital. Supporting the trauma and medical teams with the management of critically injured patients for more than 1000 hours.

8/95 – 6/99 *Lab Technician and Dispensary Technician*
Zacchaeus Free Clinic

Washington, DC

Volunteered at a non-profit health clinic that conducts over 7,000 patient visits annually for residents of the Shaw area of Washington.
This position allows contact with both adult and pediatric patients in a strong clinical environment as well as teaching CPR/First Aid classes and attending community health fairs to promote the importance of "bystander CPR".

Education

- 6/05-Present** *Ph.D. Student, Biology*
Arizona State University, School of Life Sciences
- 5/05** *B.S. Molecular Biology, Arizona State University*
Minor concentration in Spanish
Summa cum Laude (GPA – 3.98)
- 1/02 –5/05** *B.S. Molecular Biology Student, Arizona State University*
- 9/92 –12/99** *B.S. Biology Student, George Washington University*
- 9/94 - 12/94** *EMT certification, George Washington University*

Honors and Awards

- 2/05** *Full scholarship award and research stipend (4 years)*
School of Life Sciences, Arizona State University
(Declined)
- 5/05** *Summa cum Laude (highest available honor) at graduation from*
Arizona State University.

Publications

- Matoba N, **Geyer BC**, Kilbourne J, Alfsen A, Bomsel M, Mor TS. Humoral immune responses by prime-boost heterologous route immunizations with CTB-MPR(649-684), a mucosal subunit HIV/AIDS vaccine candidate. *Vaccine*. 2006 Jun 5;24(23):5047-55.
- Geyer BC**, Muralidharan M, Cherni I, Doran J, Fletcher SP, Evron T, Soreq H, Mor TS. Purification of transgenic plant-derived recombinant human acetylcholinesterase-R. *Chem Biol Interact* 2005 Dec 15;157-158:331-4.
- Matoba N, Magerus A, **Geyer BC**, Zhang Y, Muralidharan M, Alfsen A, Arntzen CJ, Bomsel M, Mor TS. A mucosally targeted subunit vaccine candidate eliciting HIV-1 transcytosis-blocking Abs. *Proc Natl Acad Sci USA*. 2004 Sep 14;101(37):13584-9.
- Fletcher SP, **Geyer BC**, Smith A, Evron T, Joshi L, Soreq H, Mor TS. Tissue distribution of cholinesterases and anticholinesterases in native and transgenic tomato plants. *Plant Mol Biol*. 2004 May;55(1):33-43.
- Carter RS, **Geyer BC**, Xie M, Acevedo-Suarez CA, Ballard DW. Persistent activation of NF-kappa B by the tax transforming protein involves chronic phosphorylation of IkappaB kinase subunits IKKbeta and IKKgamma. *J Biol Chem*. 2001 Jul 6;276(27):24445-8.
- John CS, Vilner BJ, **Geyer BC**, Moody T, Bowen WD. Targeting sigma receptor-binding benzamides as *in vivo* diagnostic and therapeutic agents for human prostate tumors. *Cancer Research*. 1999 Sept 15 59:18 4578-83
- John CS, Bowen WD, Fisher SJ, Lim BB, **Geyer BC**, Vilner BJ, Wahl RL. Synthesis, *in vitro* pharmacologic characterization and preclinical evaluation of N- [2-(1'-piperidinyl)ethyl]-3-[125I] iodo-4-methoxybenzamide (PIMBA) for imaging breast cancer. *Nucl Med Biol* 1999 May 26:4 377-82
- John CS, Lim BB, **Geyer BC**, Zamora PO, Bowen WD. Substituted halogenated arylsulfonamides (HAS): A new class of sigma receptor-binding tumor imaging agents. *J. Med. Chem*. 1998, 41(14), 2445-2450
- John CS, Lim BB, **Geyer BC**, Vilner BJ and Bowen WD. Tc-99m labeled sigma receptor binding complexes: Synthesis, characterization and specific binding to human ductal breast carcinoma (T47D) and prostate cancer (DU-145 cells). *Bioconj. Chem*. 1997, 8(3), 304-309.

Posters and Presentations (Selected)

- Harnessing Plant Biotechnology for Protection from Nerve Gas Intoxication (Invited Seminar). Graduate Student Brown Bag Seminar, School of Life Sciences, Arizona State University, November 18, 2005.
- Novel Strategies for the Production of Nerve Gas Countermeasures (Invited Seminar). Grand Canyon University, October 28, 2005.
- N. benthamiana* Produced Human Acetylcholinesterase Completely Protects Mice from Lethal Doses of Organophosphate Toxins (Poster presentation). *American Society for Plant Biologists* July 2005, Seattle, WA.
- Production and Efficacy of Plant-Derived Acetylcholinesterase (Invited Seminar). *Molecular and Cellular Biology Colloquium, Arizona State University*. March 7, 2005.