# Jason D. Maxwell

## EDUCATION

**Biochemistry PhD, *Arizona State University, Tempe*** May 2013-May 2015
(Performed two years of studies in pursuit of PhD before exiting program)
**Biochemistry (Medicinal Chemistry) MS, *Arizona State University, Tempe*** 2013
**Biochemistry (Medicinal Chemistry) BS, Mathematics Minor, *Arizona State University, Tempe*** 2011

## TEACHING AND MENTORING

**Arizona State University, Polytechnic**
**Instructor Professional** 2015-Current

- Introductory Chemistry Lab CHM 101
- General Chemistry I Lecture, Lab, and Recitation CHM 113
- General Chemistry II Lecture, Lab, and Recitation CHM 116
- Elementary Organic Chemistry Lab, and Recitation CHM 235
- General Organic Chemistry I Lab, and Recitation CHM 237
- General Organic Chemistry II Lab, and Recitation CHM 238
- Elementary Biochemistry Lab, and Recitation BCH 367
- General Biology I Lab BIO 181

**Arizona State University, Tempe**
**Teaching Assistant** 2011-2015

- General Organic Chemistry I Lab, and Recitation CHM 237
- General Organic Chemistry II Lab, and Recitation CHM 238
- Analytical Biochemistry Lab BCH 467

**Mentoring**

- Mentored and taught research skills to undergraduate students in primary research lab. 2013-2015
- Mentored student awarded ASU Maroon and Gold Scholarship. 2009

## RESEARCH EXPERIENCE

**Department of Chemistry & Biochemistry**, Arizona State University, Tempe Jan. 2010-May 2015
**Student**, Principal Investigator: Giovanna Ghirlanda
Carbohydrate binding and anti-HIV activity studies of designed cyanovirin mutants.

- Created and studied several site-specific mutants to elucidate effects of protein dimerization, ligand affinity and mutations within the binding pocket of cyanovirin.
- Characterized the stability, oligomerization states, and binding affinity of designed mutants.
- Designed purification method of $Man_9$ glycan from soybean, used in cyanovirin binding studies.

**Barrow's Neurological Institute**, Phoenix, AZ Summer 2008
**Summer Internship**, Supervisor: Teresa Murray
Coassembly of α7β2 nicotinic acetylcholine receptors in SH-EP 1 cell line.

- Assisted in producing stably transfected and heterologously coexperssing SH-EP 1 cell lines.
- Screened cell cultures for coexpression of α7β2 receptor by fluorescence microscopy.
- Maintained and propagated cell lines stably expressing the α7β2 receptor.

## SKILLS AND TECHNIQUES

**Protein Biochemistry:** Purification, Electrophoresis, Size Exclusion and Ion Chromatography, and ELISA.
**Spectroscopy:** UV/Visible, Mass Spectrometry, NMR, Fluorescence, and Circular Dichroism.
**Molecular Biology:** General molecular biology techniques including, mutagenesis, PCR, cloning, cell culturing etc.
**Computer Skills:** PyMOL, OriginPro Data Analysis Software, and MS Office.

## QUALIFICATION SUMMARY

Educator at Arizona State University, Polytechnic

- Taught and revised general chemistry course around open-source textbooks.
- Taught basic concepts and skills in chemistry labs.
- Trained and instructed students in use of analytical instruments including NMR, IR, UV-Vis spectroscopy.
- Revised and developed labs in general, organic, and biochemistry.

Graduate student at Arizona State University with M.S. degree in biochemistry.

- 4 years wet lab experience in molecular biology and biochemistry techniques.
- Skilled in cloning, PCR, protein mutagenesis, purification, and characterization.
- Assay quantification of protein binding by ELISA, carbohydrate content by colorimetric assay.
- Established protocols for protein expression and glycan isolation.
- Trained and supervised students in research and academic labs.

## PUBLICATIONS


Woodrum, B., **Maxwell, J.**, Allen, D., Wilson, J., Krumpe, L., Bobkov, A., Hill, R. B., Kibler, K., O'Keefe, B., Ghirlanda, G. A Designed "Nested" Dimer of Cyanovirin-N Increases Antiviral Activity. Viruses, 8 (2016), 158.

Li, Z., Bolia, A., **Maxwell, J.**, Bobkov, A., Ghirlanda, G., Ozkan, S. B., Margulis, C. J. A rigid hinge region is necessary for high affinity binding of dimannose to cyanovirin and associated constructs. Biochemistry, 54 (2015), 6951–6960.

Woodrum, B., **Maxwell, J.**, Bolia, A., Ozkan, S. B., Ghirlanda, G. The antiviral lectin cyanovirin-N: probing multivalency and glycan recognition through experimental and computational approaches. Biochem. Soc. Trans, 41 (2013), 1170–1176.

Ruben, M., **Maxwell, J.**, Woodrum, B., Ghirlanda, G. Reengineering the Glycan Binding Pocket of Cyanovirin by Directed Evolution. Glycobiology, 21(2011), 1454–1531.