

Dr. Jeffrey Q. Shen
UNLV School of Life Sciences
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Ph.D. Bioinformatics and Molecular Genetics from Washington University, St. Louis.

Dr. Shen's Research

Dr. Jeffrey Shen is an associate professor at the School of Life Sciences at the University of Nevada Las Vegas. He teaches several classes at UNLV. These classes include Biology 189 (Fundamentals of Life Sciences), Biology 300 (General Genetics), Biology 405 (Molecular Biology), Biology 425/730 (Genomics) and Biology 402 (Bioinformatics, proteomics, and genomics). His field of research focuses on development of database and bioinformatics tools for genome cues and predictions of gene function (sub-cellular organization, and protein motifs). His research lab also focuses on molecular mechanisms controlling plant responses to abiotic stresses, seed dormancy, and germination. Dr. Shen is also interested in the mechanism underlying tissue specific and developmentally-regulated gene expression. His interest in the subject started in college where he realized that the rapid developments in genomic and other molecular research technologies and development in information technologies have combined to produce a tremendous amount of information related to molecular biology over the past few decades. One of the main reasons for the changes that have occurred is the sequencing of the human genome; this has raised many new questions to be answered. The traditional methods that were originally used are not used anymore; therefore, they have been changed. In order to understand the genome of any organism, it is essential to understand bioinformatics. Bioinformatics is the application of statistics and computer science to the field of molecular biology. Bioinformatics now entails the creation and advancement of databases, algorithms, computational and statistical techniques and theory to solve formal and practical problems arising from the management and analysis of biological data. Dr. Shen received his Ph.D. in Bioinformatics and Molecular Genetics from Washington University, St. Louis. The national associations in his field currently include American Society of Plant Physiology, American Society of Biochemistry and Molecular Biology. Some of his major journals include Plant Molecular Biology, Progress in Natural Science, and Plant Physiology.

Courses Taught

- BIOL 189 Fundamentals of Life Science: Survey of contemporary biology; includes structure, function, interactions and evolutionary origins of living systems. For Biological Sciences majors and others who require biology as part of their professional career preparation. Credits 4 Notes Satisfies General Education Core requirements for laboratory sciences. Aligned with State of Nevada life science content standards for K-8 certification.
- BIOL 300 Genetics: Study of the transmission of traits from one generation to the next, the structure and function of genes, and the variation of genes between and within populations. Credits 4 Prerequisites BIOL 196, BIOL 197, CHEM 241 and CHEM 241L. _Lab/Lecture/Studio Hours Three hours lecture and three hours laboratory.

- BIOL 405 Molecular Biology: Introductory molecular biology. Study of genes and their activities at the molecular level, including transcription, translation, DNA replication, and recombination. Concepts of molecular biology presented along with experimental strategies and data that led to those concepts. Credits 3 Prerequisites BIOL 300 or CHEM 474.
- BIOL 425 Genomics: Study of the sequencing, assembling and annotating of genomes. Examination of new approaches that integrate genetics, molecular biology, and computer sciences to answer biological questions in novel ways. Applications of genomics, proteomic and bioinformatic technologies in medical researches. Credits 3 Prerequisites BIOL 300 and BIOL 405

Professional Associations

- American Society of Plant Physiology <http://my.aspb.org/>
- American Society of Biochemistry and Molecular Biology <http://www.asbmb.org/>

Journals

- Plant Molecular Biology <http://www.springerlink.com/content/100330/>
- Progress in Natural Science <http://www.sciencedirect.com/science/journal/10020071>
- Plant Physiology <http://www.plantphysiol.org/>