

## **Junying Ma**

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### **EDUCATION:**

**M.S., Biochemistry**, 1992, Shandong Agricultural University, China

**M.S., Computer Science**, 2002, Southeastern University, Washington, DC

**B.S., Forestry Science**, 1986, Shandong Agricultural University, China.

### **WORK EXPERIENCE**

**November 2007 - Present: Research Associate, Division of Plant Biology, The Noble Foundation, Ardmore, OK 73401**

Developing high-throughput in situ hybridization protocol in order to study the expression patterns of genes involved in lignin biosynthesis pathway and vascular tissue development in switchgrass. The histological and molecular techniques applied include tissue fixation, embedding, microtome sectioning, cryosectioning, RNA isolation, cDNA synthesis, in vitro transcription RNA probe labeling and in situ hybridization.

**March 2007 - November 2007: Intern, Division of Plant Biology, The Noble Foundation, Ardmore, OK 73401**

Provided technical services in the areas of molecular biology, cell biology and genomics. One responsibility is to do DNA sequencing with ABI analyzers; the techniques used include DNA isolation, PCR, sequence analysis.

**August 2004 - October 2005: Research technician, Division of Neurology Research, Caritas St. Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA 02135**

Provided technical assistances for neuroscience researches. My primary responsibilities include scientific tasks involved neuroscience research and molecular biological research. The main techniques used in my experiments include slice preparation and histochemical staining; electrophysiological recording; 3-D neuron model reconstruction; molecular biological techniques such as transformation and cell culture; vector construction and plasmid extraction; DNA/RNA extraction; PCR and RT-PCR

**August 2002 – 2003: Technician, Department of Plant Breeding, Cornell University, Ithaca, NY 14853**

Provided technical assistances for a NSF funded research project, the Structure and Function of the Expressed Portion of the Wheat Genomes. My primary

responsibilities include 1) DNA and RNA extraction; 2) PCR and RT-PCR; 3) gel electrophoresis; 4) Southern blotting; 5) Northern blotting; 6) hybridization; 7) analysis of the hybridization results; 8) tissue culture and transformation, 9) Greenhouse plant maintenance; and 10) lab maintenance such as preparation of buffers and media.

**1992-1998: Lecturer of Biochemistry, Department of Animal Science, Shandong Agricultural University, Taian, China**

Taught courses “General Biochemistry” and “Biochemical techniques” for undergraduates;

Involved in research project using these techniques: 1) isoenzyme analysis; 2) extraction, purification and analysis of DNA from animal tissues; 3) Extraction, purification and analysis of protein. Techniques include ammonium sulfate precipitation, ion-exchange chromatography, molecular sieve chromatography, affinity chromatography, electrophoresis including SDS-PAGE, PAGE, and isoelectric point focusing; 4) Assay of enzyme activities; 5) Western blotting analysis of proteins with antibodies; 6) Data collection and organization.

**PUBLICATIONS**

Yun Wang, Henry Markram, Philip H Goodman, Thomas K Berger, **Junying Ma** and Patricia S Goldman-Rakic (2006). Heterogeneity in the pyramidal network of the medial prefrontal cortex. *Nature Neuroscience* 9: 534-542

**Junying Ma** and Bingsong Cheng (1997). The Relationship between Carotenoid and Activated Oxygen Metabolism. *Journal of Shandong Agricultural University*. 28: 518-522

**Junying Ma** and Bingsong Cheng (1996). Effect of Spermine on the Peroxidase Activity of Detached Wheat Leaves under Dark. *Journal of Shandong Agricultural University*. 27: 176-180

Rui Zhou, Min Zhao, **Junying Ma**, Shan Sun and Guozhen Zhang (1991). Chloroplast Genes and Photosynthesis. *Journal of Shandong Agricultural University*. 22: 193-196

Guozhen Zhang, Rui Zhou, Shan Sun and **Junying Ma** (1992). Effect of Spermine on Membrane Lipid Peroxidation in Detached Wheat Leaves. *Journal of Shandong Agricultural University* 23: 176-179

**COMPUTER SKILLS**

Applications: Visual Basic, Developer 2000, Personal Web Server (PWS), Cold Fusion web server, Photo Shop, and MS office (Access, Excel, Word and PowerPoint)

Languages: C++, Java, SQL, and Visual Basic

Databases: Oracle 8, and MS Access

Web Related: Active Server Pages 3.0, Cold Fusion 4.5, HTML, and JavaScript

Designed a web-enabled database system during my computer master program. ASP, Javascript and HTML were used to build up the interface and Oracle 8 Database System was used as back-database. Data can be entered, stored and searched through this system efficiently.