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**Objective:** To obtain an industrial research scientist position

### **Professional Experience**

**Staff Scientist/Production Manager, Biocrest** (2/98 - present)

I was recruited as a Staff Scientist in charge of developing their microarray department. Immediately, I designed and built a three axis robotic spotting device and procured a microarray scanner through collaborations. Within 3 months we were producing arrays using unique printing pins which I designed. When high throughput manufacturing was needed I moved in as the Microarray Production Manager and developed SOPs, which resulted in manufacturing of pretreated slides with low uniform background, development of Cy3–Cy5 labeling protocols, procurement of a second arrayer to meet production needs, and development of novel arrayer software to increase array production. Within 8 months our production facility was fully operational.

- Microarray R&D facility developed in 3 months
- Production facility operational in 8 months
- Designed SOP protocols
- Initiated and designed QC procedures
- Developed multi-well PCR purification kit to increase throughput

**Senior Research Scientist, UCLA** (3/97 - 2/98)

Joined this newly formed group as Microarray Facilities Manager. The facility was not progressing and it was my task to expedite its development. I quickly determined that the arrayer software was not meeting the facilities needs and initiated reprogramming of the arrayer. This resulted in increased throughput of our chip production and optimization of arrayer protocols. Other duties included the supervision of two technicians and overseeing the daily operations of microchip fabrication including optimization of protocols, design and fabrication of microarray tips, and testing of new tip designs.

**Senior Scientist, National Genetics Institute** (8/94 – 3/97)

Metastasis or tumor cell shedding is critical in the progression of cancer. The detection of these metastatic cells in the circulation may be beneficial in assessing tumor progression and potential for metastasis. Studies on the detection of circulating tumor cells by PCR have used only one specific marker. Considering the heterogeneity of individual markers and the diversity of tumor cells within a single tumor, particularly in advanced stages, we set out to develop a multimarker RT-PCR test that would take into account the varying levels of mRNA expression in tumor cells within primary or metastatic tumors.

Using multiple markers is the approach we used to increase the sensitivity of tumor cell detection by RT-PCR.

- Developed melanoma cancer markers into a PCR assay for the detection of circulating tumor cells in the blood.

- Designed over 20 specific primer sets as markers for breast, prostate, colon, lung, glioma, melanoma and pancreatic cancer.
- Optimized conditions for PCR primer sets.
- Responsible for supervision of associate scientists.
- Familiar with advanced BLAST search.
- Performed publication searches to identify new cancer markers.

**Associate Scientist III, Xoma Corporation** (7/90 – 8/94)

Autoimmunity occurs when one's own immune system recognizes itself as a foreign entity. T cells are thought to play an important role in the development of this process. Therefore, reducing this population of cells would be beneficial in the treatment of these types of diseases. Agents that have the capacity to knock out T-cells would result in the reduction of this cell population, thus slowing down the progression of these disease states. Isolation of antibodies to antigens on the cell surface of T-cells would make an effective targeting agent to single out these rogue cells. The development of antibody linked toxins to these autoimmune cells would be one important avenue taken in the destruction of these T-cells.

- Developed immunoconjugates and immunotoxin constructs for expression in mammalian and bacterial systems.
- Designed assays for Fab-M13 expression system.
- Cloned genomic CD5 gene for production of transgenic mice.
- Assistant Radiation Safety Officer.

**Research Associate II, City of Hope** (12/88 - 7/90)

The control of latent virus such as Herpes would be important in reducing problems associated with these infections. Agents that have the ability to inhibit viral replication would be effective in preventing reoccurrence of these infections. Ribozymes are RNA molecules that have the potential to cleave RNA substrates in an enzymatic manner, thereby regenerating itself for cleavage of the next target molecule. By targeting mRNA molecules that are essential for viral replication one can successfully inhibit outbreaks of these dormant viruses.

- Responsible for the determination of optimal conditions for PCR primer sets.
- Constructed ribozyme sequence using PCR.
- Cloned ribozyme and target sequences into transcriptional vectors.
- Developed ribozyme assay for activity on specific target sequences.
- Ribozyme vector transfection and cloning of cell lines.

**Lecturer Biological Sciences, Cal Poly Pomona University** (9/88 - 12/88)

Planned lectures and designed laboratory experiments involving recombinant DNA techniques for graduate level molecular biology course.

Radiation safety Technician, Cal Poly Pomona University (3/88 - 8/88)

Monitored research labs for radioactive isotope contamination and hazardous waste storage/disposal.

**Lecturer Biological sciences, Cal Poly Pomona University** (3/87 - 3/88)

Lecturing and laboratory instruction for senior level virology and freshman level biology courses.

**Microbiology Technician**, Cal Poly Pomona University (9/84 - 3/88)  
Supervisor for microbiology departmental stockroom. Prepared recombinant DNA materials, and maintained cell/tissue and bacterial cultures.

### **Molecular Biology Techniques**

Gene expression and genomic DNA analysis using microarray technology, biochip fabrication, restriction enzyme analysis, agarose gel electrophoresis, DNA sequencing, asymmetric PCR, RT-PCR cDNA synthesis, RNA synthesis, library construction, cDNA cloning, genomic DNA cloning. Vectors used: plasmids, phagemids, and M13 cloning vectors. M13 phagemid expression, construction of bacterial and mammalian expression vectors, transformation, electroporation, lipofection, primer extension, colony screening, plaque screening, probes: random primer from cDNA clones and PCR products, kinased oligos, and RNA probes. Colony hybridization, plaque hybridization., DNA purification using: spun columns, minipreps, plasmid preps., agarose SDS gels, and DE 81 paper. Oligonucleotide purification using polyacrylamide gels and spin columns. Isolation of mammalian DNA, genomic DNA, total RNA and mRNA. Northern blots and southern blots. Radiolabeling – autoradiography using: 32P, 35S, and 33P. Fluorescent labeling using Cy3 and Cy5.

### **Protein Biochemistry and Cell Biology Techniques**

Experience working with human tissue as well as specific mouse/rat tissue dissection (eye, brain, spleen, stomach, small intestine, colon, kidney, liver, testes, heart, thymus, lung, and skin) lymphocyte isolation, tissue homogenization, tissue culture, transfection (CaPO4 and lipofection), protein separation using SDS-PAGE gels, western analysis, ELISA, fusion protein induction, reverse transcriptase assay.

### **Education**

M.S Degree in Biological Sciences, Summer 1988. GPA - 4.0  
California State Polytechnic University Pomona.

B.S. Degree in Microbiology, June 1984. Graduated Cum Lauda. GPA - 3.5  
California State Polytechnic University Pomona.

### **Graduate Research Project**

Molecular Cloning and restriction Mapping of the Wild Mouse Retrovirus, 1504A.

### **Awards**

Achievement Award, June 1993.  
In recognition of outstanding contributions to XOMA's corporate objectives.

Achievement Award, October 1991.  
In recognition of outstanding contributions to XOMA's corporate objectives.

Achievement Award, December 1991.  
In recognition of outstanding contributions to XOMA's corporate objectives.

Presentation Award, 1987.  
Received first place award at the Southern California ASM meeting in Palm Springs.

### **Publications**