

# Medical and Human Genetics in OKLAHOMA

Sharon Vaz, Pam King, Lori Williamson and John J. Mulvihill

Oklahoma State Department of Health and University of Oklahoma Health Sciences Center; Oklahoma City, OK



## State Profile

- **Population: 3,792,485** Oklahoma City (600,000), Tulsa (400,000) & Lawton (86,000)
- **18<sup>th</sup> largest state** (69,919 square miles); 28<sup>th</sup> in population
- **Home of Five Civilized Tribes** (Choctaw, Chickasaw, Cherokee, Creek, and Seminole) and other tribes
- **“Oklahoma”** comes from two Choctaw Indian words meaning “red man”.

## Personnel

### State Health Department

Pam King	Director of Genetics and State Genetics Coordinator
Sharon Vaz	State Genetics Education Coordinator
John Mathewson	Director, Public Health Laboratory
Kay Pearson	Coordinator, Birth Defects Registry
Theresa Stieckel	NBS Quality Assurance and Education Coordinator
Paula Vann	Newborn Screening Nurse
Terry Geisler	Newborn Screening Consultant
Jim Schmaelzle	Coordinator, Hearing Screening

### Clinical Geneticists

David Domek	Clinical Endocrinology	Baptist Hospital, OKC
John J. Mulvihill	Clinical	University of Oklahoma, OKC
Susan Palmer	Clinical/Biochemical	University of Oklahoma, OKC
J. Rodman Seely	Clinical Endocrinology	University of Oklahoma, OKC
Valentina Dall	Clinical	University of Oklahoma, OKC
Andrew Wagner	Genetics/OB-GYN	University of Oklahoma, OKC
Adolfo Garcia	Clinical Endocrinology	Oklahoma State University - Tulsa
Michael Kayser	Clinical/Biochemical	St Francis Hospital, Tulsa

### Maternal Fetal Medicine

James Benson	University of Oklahoma, Tulsa
Christine Blake	Private Practice
Fred Fumia	Private Practice
Mark Harman	University of Oklahoma, Tulsa
Erik Kunson	University of Oklahoma, OKC
Andrew El-Alamain	University of Oklahoma, OKC
John Stanley	Perinatal Center of Oklahoma, OKC
Charles Miralobe	Perinatal Center of Oklahoma, OKC
Jeffrey Stewart	OBI, Associates, Tulsa
Carol Letnon	Great Plains Obstetrics, Lawton

### Genetic Laboratorians

Nancy Carpenter	Cytogenetics	St. Francis Hospital, Tulsa
S. Terence Dunn	Molecular Pathology	University of Oklahoma, OKC
Shibo Li	Cytogenetics/Mol Gen	University of Oklahoma, OKC
Fred Schaefer	Molecular Genetics	St. Francis Hospital, Tulsa

### Genetic Counselors and Nurses in Genetics

Glenda Bell	Oncology	Baptist Hospital, OKC
Melissa Craft	Oncology	Breast Imaging of Oklahoma
Susan Haused	Pediatric/Adult	University of Oklahoma, OKC
Jessica Mester	Pediatric/Adult	University of Oklahoma, OKC
Mary Heinrichs	Prenatal	Perinatal Center of Oklahoma, OKC
Lori Williamson	Pediatric/Adult	University of Oklahoma, OKC
Patrick Wilson	Prenatal	University of Oklahoma, OKC
Erica Willis	Pediatric/Adult	University of Oklahoma, OKC
Julie Keith	Pediatric/Adult	University of Oklahoma, OKC
Sharon Vaz	Public Health	Oklahoma State Department of Health

### NIH Funded Genetics Researchers (and member of GSA or ASHG)

John Harley	Lupus erythematosus	OMRF, OKC
John Mulvihill	Neurofibromatosis	University of Oklahoma, OKC
Morris Foster	Family history prostate cancer in African Americans	University of Oklahoma, Norman
Sanjay Bidichandam	Frederich stavis and triple repeats	University of Oklahoma, OKC

## Training Programs

MS in Genetic Counseling –2003

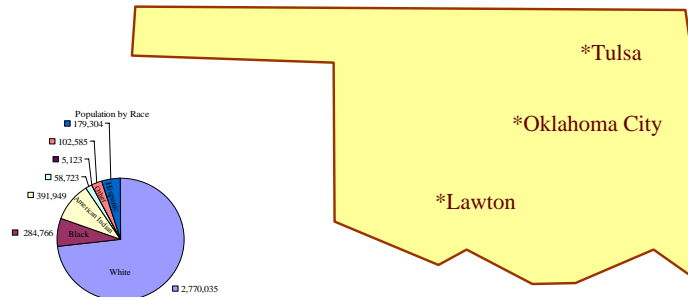
Mid-America Genetic Education Consortium (MAGEC) --2004

University of Oklahoma (Biochem/Mol Genetics; Zoology; Botany/Microbiology)

RRC Medical Genetics Residency (*pending*)

Molecular Pathology Training Program (*pending*)

## Genetic Clinic Sites



## Newborn Screening

ACTUAL	CONDITIONS	NEW CASES / 2006
1963	Phenylketonuria	2
1979	Congenital hypothyroidism	15
1991	Sickle cell disease	13
1991	Galactosemia	1
2005	Cystic fibrosis	14
2005	Congenital adrenal hyperplasia	1
2006	Medium chain acyl coenzyme A dehydrogenase deficiency (MCAD)	2

### PLANNED

2008-2009 Amino Acids, Organic Acids, Fatty Acid Oxidation Defects  
2010 Biotinidase

## Advisory Council

### Oklahoma Genetics Advisory Committee (OGAC) with committees:

- Birth Defects Registry, Prenatal Screening and Diagnosis
- Newborn Screening Programs and Pediatrics
- Public Health Genetics Policy
- Family Advisory
- Adult Genetics
- Evaluation
- Education
- Student

## Special Features

- Turner syndrome described at OU in 1938
- OU sequencing capacity: chromosomes 21, 22 – Bruce Roe
- Various bacteria—Joseph Ferretti, David Dyer
- Oklahoma Medical Research Foundation
- Children’s Medical Research Institute
- General Clinical Research Center
- American Indian Nations as clinical and research partners
- **Genetic Counseling Licensure – November 2006**

## Facilities

### Oklahoma City

- State Department of Health
- University of Oklahoma Health Sciences Center
- Children’s Hospital Pediatric Specialty Clinic
- Biochemistry and Molecular Genetics, Pathology
- OU Physicians’ Building, Breast Health Institute
- OU Physician’s Building, Maternal Fetal Medicine
- Oklahoma Medical Research Foundation
- Perinatal Center of Oklahoma
- Baptist Hospital
- Southwest Integris Medical Center

### Edmond

- Breast Imaging of Oklahoma
- University of Central Oklahoma - Forensics

### Tulsa

- St. Francis Hospital and University of Oklahoma Health Sciences Center—Tulsa Campus
- Oklahoma State University Houston Parke Pediatrics
- Oklahoma State University - Forensics

### Norman

- University of Oklahoma (Anthropology, Biochemistry, Zoology, Botany)

## References

- Oklahoma State Genetics Plan ([www.health.ok.gov/program/gp](http://www.health.ok.gov/program/gp))
- *J Okla State Med Assoc.* October 2003, **Genetics Issue, 96(10).**
- The DNA sequence of human chromosome 22. *Nature.* 1999 Dec 2;402(6761):489-95.
- Community involvement in the ethical review of genetic research: lessons from American Indian and Alaska Native populations. *Environ Health Perspect.* 2002 Apr; 110 Suppl 2:145-8.
- A syndrome of infantilism, congenital webbed neck and cubitus valgus. *Endocrinology* 1938 23:566-574