From the Chairman’s Desk,

Nemours has been an important part of my life. I am proud of the children we have cared for through the years, the clinicians we have educated, our life-changing research innovations and our commitment to providing enhanced family-centered care where parents and children are part of the decision-making process.

As we look to the future, our goal is to create centers of excellence for neuro-orthopedics, skeletal dysplasia, spine and sports medicine, fortify our investment in research and help families transition care seamlessly to the adult environment.

Sincerely,

William Mackenzie, MD
Chairman, Department of Orthopedic Surgery
First Holder, Shands/MacEwen Endowed Chair of Orthopaedic Surgery
Chairman, Medical Advisory Board for Little People of America
Past President of the Limb Lengthening and Reconstruction Society
Nemours/Alfred I. duPont Hospital for Children in Wilmington, Del., is a recognized leader, both nationally and internationally, in the field of pediatric orthopedics. Since 1940, we’ve cared for children with the most complex orthopedic conditions and our legacy of excellence continues. Our orthopedic care is consistently ranked among the best in the nation by *U.S. News and World Report*.

**Orthopedic Team:**

- 15 full-time, fellowship-trained orthopedic surgeons and one fellowship-trained sports medicine physician
- 100 percent of orthopedic faculty actively involved in research and education
- more than 40,000 visits annually
- one of the largest pediatric training programs for orthopedic residents and fellows in the country

**Orthopedic Program Highlights:**

- nationally recognized orthopedic experts
- inpatient and outpatient orthopedic care
- innovative surgical techniques
- Nobel Prize-winning EOS imaging that uses the lowest dose of radiation possible
- access to experimental, multicenter drug protocols
- family-centered care
  » Families are part of the team and together, a personalized treatment plan is developed to meet the needs of each child.

Building upon our commitment to children’s health care, in October 2014, we’re opening a hospital expansion which will include:

- enhanced family-centered care with single patient rooms
- upgraded emergency and fast track facilities
- advanced patient care technology and more
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Our general orthopedics team manages a wide range of bone, joint, nerve and muscular conditions. We work together with the child’s doctor to deliver high quality care, helping to restore function and getting kids back to being kids.
Conditions Treated

Including all aspects of pediatric orthopedics

- musculoskeletal injuries
- foot problems
- torticollis
- bone and joint infections
- congenital defects
- gait disorders

Program Highlights

- diagnosis, evaluation and treatment
- full-service cast room
- orthotics facilities
- on-site imaging

Services Offered

- Ambulatory Surgery Center at Nemours duPont Pediatrics, Bryn Mawr
- on-site X-rays at all locations
- on-site casting
  » Nemours/Alfred I. duPont Hospital for Children
  » Nemours duPont Pediatrics, Bryn Mawr
  » Nemours duPont Pediatrics, Voorhees

Physician Priority Line: (800) 829-KIDS (5437)

- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
GENERAL ORTHOPEDICS TEAM

J. Richard Bowen, MD  
*Pediatric Orthopedic Surgeon*

Justin Connor, MD  
*Pediatric Orthopedic Surgeon*

Candice P. Holden, MD  
*Pediatric Orthopedic Surgeon*

L. Reid Nichols, MD  
*Pediatric Orthopedic Surgeon*

Mihir Thacker, MD  
*Pediatric Orthopedic Surgeon*

Keri DiAlessandro, PA-C  
*Physician Assistant*

Susan Dubowy, PA-C  
*Physician Assistant*

Lauren Gilbert, PA-C  
*Physician Assistant*
Kailey Lyford, PA-C  
Physician Assistant

Ashley Tucker, PA-C  
Physician Assistant

Christina Waddell, PA-C  
Physician Assistant

For more information, visit NemoursduPont.org
As a Level I Pediatric Trauma Center, our orthopedic surgeons are part of a specialized team providing expert care for children who have experienced severe and life-threatening injuries. Patients are admitted to the orthopedic trauma program from our Emergency Department, referring hospitals and directly from accident scenes.
Conditions Treated

- evaluation and treatment of injuries or conditions related to musculoskeletal, neurologic or soft tissue

Program Highlights

- immediate access to pediatric subspecialists
- immediate access to technology and equipment designed especially for children
- pediatric specialty services available 24/7

Outpatient Services Offered

- on-site X-ray and advanced imaging
- full-service lab
- specialized cast room, staffed by orthopedic technicians, who are experienced in working with injured children
- customized bracing and orthotics
- physical therapy and other rehabilitative services

Physician Priority Line: (800) 829-KIDS (5437)

- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
ORTHOPEDIC TRAUMA TEAM

Richard W. Kruse, DO, MBA  
*Division Chief, Orthopedic Trauma Program  
Pediatric Orthopedic Surgeon*

Ashley Tucker, PA-C  
*Physician Assistant*

Amy Lewis  
*Cast Technician*

Trauma Research Interests

- CT utilization
- disaster response
- health diversity issues and access to care
- health-related quality of life associated with trauma
- injury prevention and geomapping of trauma
- vascular evaluation of extremity injury in children

For more information, visit NemoursduPont.org.
The Center for Sports Medicine at Nemours/Alfred I. duPont Hospital for Children provides care for active kids and athletes who sustain sports-related injuries. Our sports medicine physicians, athletic trainers and physical therapists work together to customize a treatment plan that best addresses the needs of the individual athlete and ensures a safe return to play.
Conditions Treated

- acute and chronic sports-related injuries
- sports-related concussions

Facility Highlights
Region’s largest pediatric sports medicine facility
- state-of-the-art equipment
- more than 2,000 square feet of space dedicated to plyometrics and agility
- 25-meter pool
- two 30-yard indoor track lanes

Program Highlights

- comprehensive concussion diagnosis and management
  » ImPACT® Testing (pre- and post-concussion)
- 1:1 ratio of physical therapist to patient
- access to a nurse navigator to coordinate concussion appointments

Services Offered

- medical and surgical management
- physical therapy and rehabilitation
- on-site imaging and MRI
- sports nutrition counseling
- sports performance programs led by certified athletic trainer
- certified hand therapists assist in rehabilitation by helping to maximize function

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
SPORTS MEDICINE TEAM

Kathleen O’Brien, MD
Medical Director
Pediatric Orthopedic Physician

Alfred Atanda Jr., MD
Surgical Director
Pediatric Orthopedic Surgeon

Angela D. Smith, MD
Pediatric Orthopedic Surgeon

Gina Barusevicius, MA, RD, CSSD, LDN
Sports Nutritionist

Kenny Rogers, PhD, ATC
Program Manager, Research and Sports Medicine

Sports Medicine Physical Therapists and Athletic Trainers

Timothy Duer, PT, MSPT, CSCS, SCS

Matthew Harris, PT, DPT, CSCS

Angela Heckler, PT, DPT, ATC

Stephanie Kushman, PT, DPT, ATC
Erin D. McLaughlin, MS, ATC

Wendy Novick, PT, DPT

Brie Sheppard, PT, DPT

Derek Wagner, PT, DPT, CWcHP

Research Interests:

- dynamic ultrasound of the ulnar collateral ligament of the elbow in pediatric baseball pitchers
- validation of a portable instrumented postural stability system (PIPSS) for use with post-concussion athletes
- epidemiology of high school athlete: injury incidence in both athletic and nonathletic events
- comparison of athletic and nonathletic mechanism of injury for adolescents who want to return to sports
- epidemiology of athletic trauma injury at a Level I institution

For more information, visit Nemours.org/sportsmedicine.
ARTHROGRYPOSIS PROGRAM

The arthrogryposis program at Nemours/Alfred I. duPont Hospital for Children works closely with families from diagnosis to a customized comprehensive rehabilitation program to determine the best course of care for the child. Our goal is to maintain and maximize a child’s range of motion and function.

Arthrogryposis refers to a broad group of disorders that result in stiffness or loss of motion of multiple joints. There are many variations of this disease, some mild and some severe. In mild cases, only a few joints may be affected and the child may have nearly full range of motion. In extreme cases, nearly every joint is impacted, including those of the jaw and back.
- amyoplasia arthrogryposis
- distal arthrogryposis

Program Highlights
- multidisciplinary team of specialists
- access to the Wilmington Robotic Exoskeleton (WREX), an upper limb orthosis that helps children gain mobility of their arms

Services Offered
- medical and surgical management
- customized orthotics, splinting and bracing
- physical and occupational therapy

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
Research Interests

- natural history of hip disorders associated with arthrogryposis
- understand the outcomes associated with both surgical and conservative management
- develop assistive devices to improve patient function (WREX)
- understand outcomes and health-related quality of life associated with WREX

For more information, visit NemoursduPont.org.
BONE TUMOR PROGRAM

At Nemours/Alfred I. duPont Hospital for Children, the Bone Tumor Program is led by Mihir Thacker, MD, who is fellowship trained in both orthopedic oncology and pediatric orthopedics, and has a unique appreciation of the needs of these patients and how to best treat them.

Bone tumors can occur in children and adolescents. They may be benign (noncancerous) or malignant (cancerous), though benign tumors are more common. Though benign tumors are not life threatening, they can compromise function and quality of life. These tumors represent a distinct group of disorders and are often quite different from those seen in adults. Appropriate identification and evaluation of these tumors by an experienced team is critical in establishing the treatment that will most improve function and quality of life.
Conditions Treated
- benign tumors
  - bone and soft tissue tumors of the extremities
- malignant tumors
  - including osteosarcoma, Ewing sarcoma, soft tissue sarcomas

Program Highlights
- multidisciplinary team of experts reviews each case
- innovative surgical techniques
  - limb salvage surgery routinely performed
  - advanced navigation methods
  - noninvasive limb lengthening techniques to keep the lengths of the legs even as children grow

Services Offered
- comprehensive evaluation for both benign and malignant tumors
- medical and surgical management
- access to experimental, multicenter cancer treatment protocols

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
BONE TUMOR TEAM

Mihir Thacker, MD
Pediatric Orthopedic Surgeon and Orthopedic Oncologist

Susan Dubowy, PA-C
Physician Assistant

Research Interests

- treatment and outcomes of bone cysts: part of a multicenter international study (SBoCK) that examines treatment of unicameral bone cysts

- chondroblastomas: multicenter study of treatment outcomes and quality of life in patients with chondroblastoma (benign, but aggressive cartilage tumors)

- Trevor’s disease (rare condition with osteochondromas within the joint): radiographic appearances and outcomes of treatment

- multiple hereditary exostoses patient outcomes

- osteosarcoma treatment and outcomes using noninvasive expandable prostheses

- neuromonitoring outcomes related to osteochondroma surgical excision

For more information, visit NemoursduPont.org.
CEREBRAL PALSY PROGRAM

At Nemours/Alfred I. duPont Hospital for Children, a team of world-class specialists in orthopedic surgery, pediatrics, neurology, neurosurgery and rehabilitation work together to help each child reach their full potential.

Cerebral palsy (CP) is the name for a series of neurological disorders caused by abnormalities in parts of the brain that control muscle movement. It is the most common form of physical disability in childhood being present in two of every 1,000 children. Cerebral palsy is a complex condition. Symptoms can range from mild to severe. In some cases, a single limb may be affected; in more severe cases, almost all functional aspects of the child are affected.
Conditions Treated

- foot and hip deformity
- neuromuscular scoliosis
- upper extremity problems
- gait problems
- spasticity
- movement disorders
- spinal dysfunction

Program Highlights

- access to multidisciplinary team of specialists
- hip subluxation and dislocation prevention and treatment
  » immediate mobilization protocol (minimizes the use of casting post-surgery)
- access to a specialized spasticity and movement disorders clinic
  » physiatrist, orthopedist, physical therapist
  » baclofen pump management

Services Offered

- comprehensive diagnosis, evaluation and treatment
- on-site nurse navigator who coordinates services and appointments
- CMLA-accredited Gait and Motion Analysis Laboratory
  » imaging informs surgeons about surgery with more predictable results
- dedicated social worker and psychologist
- wheelchair and mobility clinic
  » pressure mapping
  » custom seating
- Augmentative Communication Program
  » improves the child’s ability to achieve:
    - more functional face-to-face communication
    - language reading and access to writing

Physician Priority Line: (800) 829-KIDS (5437)

- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
CEREBRAL PALSY TEAM

Freeman Miller, MD
*Pediatric Orthopedic Surgeon*
*Medical Director of the Gait and Motion Analysis Laboratory*

Kirk W. Dabney, MD
*Pediatric Orthopedic Surgeon*
*Division Chief, Cerebral Palsy Program*

Justin Connor, MD
*Pediatric Orthopedic Surgeon*

Julianne P. Sees, DO
*Pediatric Orthopedic Surgeon*

Keri DiAlessandro, PA-C
*Physician Assistant*

Kailey Lyford, PA-C
*Physician Assistant*

Judy Adelizzi-Delany, MSN, APN
*Nurse Practitioner*

Dana Craig, MSN, ARNP, PNP-BC
*Nurse Practitioner*

Stephanie Chopko, PhD
*Pediatric Psychologist*
Research Interests

- development of cerebral palsy registry to assist patient and parent in patient-centered decisions regarding treatment options
- motion analysis of patients pre- and post-treatment (surgical and/or conservative) to understand how the treatment affects both quality of life and clinical outcomes
- hip surveillance program — monitoring and preventing dislocation of hips in children with CP
- evaluating changes in muscles due to spasticity with the goal to develop new treatments
- evaluating the impact of treatment on bone density
- predictive analytics to identify factors that could influence a clinical outcome
- health-related quality of life and relationship to clinical outcomes
- evaluation of muscle, tissue and defining characteristics
- understanding spine curve progression and appropriate treatment

For more information, visit NemoursduPont.org.
The Clubfoot Program at Nemours/Alfred I. duPont Hospital for Children is led by a highly skilled orthopedic surgeon, who uses the Ponseti Method, dubbed the international gold standard, to gently and safely stretch the child’s foot or feet into the correct or forward facing position. For the majority of children, clubfoot is almost completely correctable without major surgery or pain.

Clubfoot is a congenital abnormality and refers to the way the foot is positioned at a sharp angle to the ankle, causing one or both feet to turn inward and downward. Since clubfoot can inhibit a child’s ability to walk, we advocate early intervention by trained clinicians so the overall appearance and function of the child’s foot or feet can be corrected, preventing long-term disabilities.

Conditions Treated
- arthrogryposis
- idiopathic
- neurologic
- syndromic

**Program Highlights**
- use of Ponseti method
  - minimally invasive process using casting and orthotics

**Services Offered**
- Ponseti casting
- orthotics
- physical therapy

**Physician Priority Line: (800) 829-KIDS (5437)**
- 24/7 phone access to a Nemours specialist to discuss a specific patient

**Appointment Scheduling: (800) 416-4441**
CLUBFOOT PROGRAM TEAM

L. Reid Nichols, MD
*Pediatric Orthopedic Surgeon*

Lauren Gilbert, PA-C
*Physician Assistant*

Amy Lewis
*Cast Room Supervisor*

Reenee Donohoe, PT, DPT
*Physical Therapist*

**Research Interests**

- gait lab analysis of clubfoot
- assessing peroneal muscle strength in clubfoot
- casting for recurrent clubfoot

For more information, visit [NemoursduPont.org](http://NemoursduPont.org).
HAND AND UPPER EXTREMITY PROGRAM

At Nemours/Alfred I. duPont Hospital for Children, our pediatric orthopedic surgeons have advanced training in hand, upper extremity and microvascular surgery to provide highly customized and precise treatment. Our goal is to improve or restore optimum functionality.

Hand and upper extremity conditions can be complex in the way they affect the bones, muscles, tendons, nerves and blood vessels. These conditions range from congenital anomalies to traumatic injuries and can significantly impact a child’s appearance and function.
Conditions Treated
- congenital differences
- brachial plexus birth palsy
- upper extremity trauma

Program Highlights
- certified hand therapists assist in rehabilitation through personalized, one-on-one care
- Patient Support Forum
  » Annual Family Hand Picnic where families and patients can draw support from each other

Services Offered
- medical and surgical management
- hand therapy
- physical and occupational therapy
- specialized splinting and casting

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
HAND AND UPPER EXTREMITY TEAM

Jennifer M. Ty, MD
Pediatric Orthopedic Surgeon
Hand and Upper Extremity Surgeon

Lauren Gilbert, PA-C
Physician Assistant

Joe Basante, MA, MS, OTR/L, CHT
Certified Hand Therapist

Christina Adler, MS, OTR/L, CHT
Certified Hand Therapist

Tracy Shank, MS, OTR/L, CHT
Certified Hand Therapist

Patty Hove, OTR/L
Occupational Therapist

Research Interests

- epidemiology, radiographic characteristics and long-term outcomes of carpal coalition of the wrist
- brachial plexus birth palsy—clinical presentation and outcomes of treatment
- upper extremity involvement in neuromuscular disease
- epidemiology and long-term outcomes of congenital deformity
- health care delivery issues for upper extremity injury

For more information, visit NemoursduPont.org.
HIP PRESERVATION PROGRAM

Hip disorders in the pediatric population can have a profound impact on daily activities, function and quality of life. We have a great history of developing one of the premier hip ultrasound programs in the world and excellence in care of children with hip disorders.

Conditions Treated
femoroacetabular impingement (FAI)
developmental dysplasia of hip (DDH)
hip labral tears
Perthes disease
slipped capital femoral epiphysis (SCFE)

Program Highlights
- comprehensive, state-of-the-art hip care for babies to young adults

Services Offered
- hip arthroscopy
- hip ultrasound
- nonoperative and surgical treatment of hip, SCFE and Perthes dysplasia
- complex hip preservation surgery, including surgical hip dislocation, femoral head reshaping and pelvic osteotomies to correct acetabular dysplasia

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
HIP PRESERVATION TEAM

J. Richard Bowen, MD  
*Professor of Orthopedic Education and Research*  
*Pediatric Orthopedic Surgeon*

Mihir Thacker, MD  
*Pediatric Orthopedic Surgeon*

L. Reid Nichols, MD  
*Pediatric Orthopedic Surgeon*

Research Interests

- participant in the International Perthes Study group evaluating treatment options and outcomes of children with Perthes disease
- treatment of hip dysplasia
- treatment and outcomes in patients with FAI and SCFE
- health-related quality-of-life outcomes in Perthes, DDH and SCFE
- clinical outcomes and health-related quality of life in the treatment of DDH

For more information, visit [NemoursduPont.org](http://NemoursduPont.org).
Limb deformities and disorders causing differences in leg lengths are frequent causes of difficulty with ambulation and sports and affect the quality of life of young children. The limb reconstruction program offers a comprehensive evaluation of children with these disorders.
Conditions Treated

- Blount disease
- congenital limb deformities
- leg length differences
- overgrowth syndromes
- post-traumatic and post-infective limb deformities

Program Highlights

- comprehensive care of patients with limb deformities and length differences.

Services Offered

- limb lengthening using external fixators as well as internal devices (nails)
- noninvasive expansion for lengthening over a nail
- use of intra-operative navigation for treatment of physeal bars (growth arrest)
- growth modulation for correction of deformity/discrepancy

Physician Priority Line: (800) 829-KIDS (5437)

- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
LIMB RECONSTRUCTION TEAM

William Mackenzie, MD  
Chairman, Department of Orthopedic Surgery  
Pediatric Orthopedic Surgeon

Mihir Thacker, MD  
Pediatric Orthopedic Surgeon

J. Richard Bowen, MD  
Professor of Orthopedic Education and Research  
Pediatric Orthopedic Surgeon

L. Reid Nichols, MD  
Pediatric Orthopedic Surgeon

Research Interests

- outcomes in patients with epiphyseodesis
- surgical treatment of Blount disease
- use of intra-operative computer navigation for physeal bar resection
- health-related quality-of-life outcomes

For more information, visit NemoursduPont.org.
OSTEOGENESIS IMPERFECTA (OI)

At Nemours/Alfred I. duPont Hospital for Children, our program is dedicated to helping children with OI maximize independence and functionality regardless of the severity of the condition.

Children born with this rare genetic disorder (sometimes referred to as Brittle Bone Disease) have bones that break easily, often from little or no apparent cause. These fractures are often due to a collagen I defect that causes the bones to be extremely fragile. OI can range from very mild to life-limiting, and we have experience caring for patients with all forms of the disease.
Conditions Treated
- osteogenesis imperfecta

Program Highlights
- a multidisciplinary approach to care
- advanced orthopedic fracture care using specialized casting material and techniques to mobilize affected area and to minimize additional fracture risk
- customized program of occupational and physical therapy provided by experts in OI

Services Offered
- audiologic care
- comprehensive, integrated medical and surgical management
- counseling needs
- seating and orthotic devices: assessed to ensure a healthy posture and to prevent bowing of the long bones of the leg
- adaptive equipment: to help the child maneuver and interact with their environment on a daily basis

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
OSTEOGENESIS IMPERFECTA TEAM

Richard W. Kruse, DO, MBA
Division Chief, Orthopedic Trauma Program
Pediatric Orthopedic Surgeon

Michael Bober, MD, PhD
Director, Skeletal Dysplasia Program
Geneticist

Ashley Tucker, PA-C
Physician Assistant

Research Interests

- part of OI Foundation Linked Clinical Research Center which focuses on the collection of longitudinal, natural history data
- in partnership with the University of Delaware, received an Osteogenesis Imperfecta Foundation (OIF) grant to study the effect of a daily vibration treatment on the bone health of children with OI
- devices and therapies that will assist and rehabilitate children with neuromuscular disabilities and orthopedic disorders like OI researched in Pediatric Engineering Research Lab (PERL)

For more information, visit NemoursduPont.org.
The Skeletal Dysplasia Program at the Nemours/Alfred I. duPont Hospital for Children is one of the world’s foremost centers in the treatment of skeletal dysplasia, with more than 75 years of combined experience in the diagnosis and management of children with skeletal dysplasia. Treatment is directed toward maximizing mobility, correcting deformity and improving a child’s overall quality of life.

Skeletal dysplasia is a term used to describe a group of conditions characterized by abnormalities in the growth, development, shape or integrity of the bones and cartilage. Most skeletal dysplasias result from a spontaneous genetic mutation at or before conception. Children with skeletal dysplasia have multiple medical and social needs, but the most common feature among them is dwarfism, defined as having disproportionate short stature.
Conditions Most Commonly Treated
- achondroplasia
- diastrophic dysplasia
- metatropic dysplasia
- Morquio
- primordial dwarfism
- multiple epiphyseal dysplasia (MED)
- spondyloepiphyseal dysplasia
- pseudochondroplasia

Program Highlights
- access to world-renowned orthopedic and genetics experts, supported by a team of multidisciplinary specialists
- comprehensive, coordinated care plan
- advanced care of the spine and extremities including cervical spine stabilization, lower extremity and growth sparing procedures
- continuation of care to treat skeletal dysplasia patients to age 35

Services Offered
- genetic counseling
- physical therapy
- patient support forums in association with The Little People of America
- access to the only primordial dwarfism registry in the U.S.
- access for appropriate patients for enzyme replacement therapy for mucopolysaccharidosis

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
SKELETAL DYSPLASIA TEAM

William Mackenzie, MD  
Chairman, Department of Orthopedic Surgery  
Pediatric Orthopedic Surgeon

Michael Bober, MD, PhD  
Director, Skeletal Dysplasia Program  
Geneticist

Colleen P. Ditro, CPNP, DNP  
Nurse Practitioner

Angela L. Duker, MS, CGC  
Genetic Counselor

Research Interests

- pharmacologic intervention
- patient clinical registry to understand natural history
- skeletal dysplasia biobank
- the effect of conservative and surgical treatment on patient-centered outcomes
- motion analysis and its relationship to treatment
- evaluation of spine treatment and patient-centered outcomes
- evaluation of lower extremity treatment and patient-centered outcomes

To learn more, visit Nemours.org/skeletaldysplasia.
At the Spine and Scoliosis Center, we’re experts in treating the full range of scoliosis and spinal problems in children and teens. Almost every child with scoliosis can have an active life. Our goal is getting kids back to the activities they love.

Scoliosis, or curvature of the spine, affects three to four percent of children in the United States. This abnormality is most often diagnosed during the adolescent growth spurt. Depending upon the severity of the curve, continued observation, bracing or surgery may be recommended.
Conditions Treated
- adolescent idiopathic scoliosis
- early onset scoliosis
- congenital scoliosis
- neuromuscular scoliosis
- kyphosis (congenital and Scheuermann’s)
- spondylolisthesis

Program Highlights
- world-renowned surgical expertise
- post-operative infection rates, length of stay and reoperation rates below the national average
- use of Nobel Prize-winning EOS imaging technology
  » provides highest quality 3D X-rays of the spine using the lowest dose of radiation possible
- high post-treatment patient satisfaction scores
- patient and parent support forum

Services Offered
- customized, ventilated Wilmington Brace with built-in compliance monitor
- genetic testing to identify those at risk for severe curve progression
- physical therapy/injury and postsurgical rehabilitation

Physician Priority Line: (800) 829-KIDS (5437)
- 24/7 phone access to a Nemours specialist to discuss a specific patient

Appointment Scheduling: (800) 416-4441
SPINE AND SCOLIOSIS TEAM

Suken A. Shah, MD
*Co-Director, Spine and Scoliosis Center*
*Pediatric Orthopedic Surgeon*

Peter G. Gabos, MD
*Co-Director, Spine and Scoliosis Center*
*Pediatric Orthopedic Surgeon*

Alicia McCarthy, CPNP-AC
*Nurse Practitioner*

Lisa Nichols
*Orthopedic Clinical Services Specialist*

Research Interests

- outcomes of surgical correction of idiopathic scoliosis (with the Setting Scoliosis Straight Foundation)
- surgical safety during spine surgery
- growing rods for early onset scoliosis
- bracing for adolescent idiopathic scoliosis (a multicenter, randomized controlled study sponsored by the NIH)
- post-op motion preservation after scoliosis surgery
- Scheuermann’s kyphosis outcomes study
- EOS microdose medical imaging
- cost-effective analysis of treatment
- medical issues related to surgical intervention
- pain management
- VEPTR outcomes
- health-related quality of life

For more information, visit [Nemours.org/spinecenter](http://Nemours.org/spinecenter).
RESEARCH

Our international reputation of excellence in pediatric orthopedics is built on our commitment to research. Clinical questions drive our investigations and our research capabilities benefit the children we treat.

Every year, our Department of Orthopedics trains three to four research fellows, who often come from other countries to learn our advanced, in-the-field approach to conducting research. Additionally, two PhD-trained researchers support the department.
A Wealth of Pediatric Orthopedic Research

Our research covers a breadth of orthopedic conditions some of which include:

- spinal deformities and dysfunction (such as scoliosis, kyphosis and spondylolisthesis)
- cerebral palsy (CP)
- skeletal dysplasia (such as achondroplasia and Morquio syndrome)
- pediatric sports medicine
- concussion trauma
- hip disorders, including developmental dysplasia, Perthes (Legg–Calvé–Perthes disease is a childhood hip disorder caused by a disruption of blood flow to the ball of the femur called the femoral head) and slipped capital femoral epiphysis (SCFE)
- patient-centered outcomes research in CP and skeletal dysplasia currently; all diagnoses in the future

Members of our department are also associated with multicenter research projects, including:

- BOLLD Study Group — safety and efficacy of BOTOX injection in alleviating pain and improving quality of life in lower extremity lengthening
- Bracing in Adolescent Idiopathic Scoliosis Trial (BrAIST)
- Chest Wall Spinal Deformity Research Foundation
- The Growing Spine Study Group (dedicated to improving the care of patients with early onset scoliosis and related deformities)
- International Perthes Study Group (pediatric orthopedic surgeons and researchers who have a common goal of advancing knowledge and care of patients with the hip disorder Perthes)
- Potentials Foundation Primordial Registry (dedicated to supporting families and patients affected by primordial dwarfism)
- Setting Scoliosis Straight Foundation (formerly the Harms Study Group Foundation)
- Development of using MyNemours, Notewriter and Epic Registry tools
- CP HIP Outcomes Project (CHOP)
- Simple Bone Cysts in Kids (SBoCK)

For more information about our research interests, visit NemoursduPont.org.
THE RONALD MCDONALD HOUSE

The Ronald McDonald House of Delaware provides a “home away from home” for families of seriously ill or injured children receiving treatment at area hospitals by offering nurturing and supportive environments where families can stay together and find comfort.

In Delaware, the Ronald McDonald House has 50 guest rooms and is conveniently located across the street from Nemours/Alfred I. duPont Hospital for Children. A complimentary shuttle is available to transport families to and from the hospital.

Room reservations can be made online or via phone.
Family Resource Center in duPont Hospital for Children

Sometimes parents feel more comfortable staying at the hospital for prolonged periods of time and even overnight. Nemours/Alfred I. duPont Hospital for Children and the Ronald McDonald House of Delaware have teamed up to provide a Family Resource Center to meet this need. The Center includes:

- laundry facilities
- showers
- kitchenette with free coffee and vending machines
- computers with high-speed Internet
- wireless Internet
- telephones, fax machine and copier
- library

The Family Resource Center is also home to three Ronald McDonald Sleep Rooms which provide overnight accommodations for a parent.
CONTACTS

# DEPARTMENT OF ORTHOPEDICS

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<thead>
<tr>
<th>Physician</th>
<th>NPI#</th>
<th>Areas of Expertise</th>
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<tbody>
<tr>
<td>Alfred Atanda, MD</td>
<td>1255597407</td>
<td>Sports Medicine</td>
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<td>J. Richard Bowen, MD</td>
<td>1578654844</td>
<td>General Orthopedics, Developmental Dysplasia of the Hip</td>
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</tr>
<tr>
<td>Suken Shah, MD</td>
<td>1932291788</td>
<td>Spine</td>
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Inpatient Orthopedic Services
For children who require surgical interventions or procedures that cannot be managed on an outpatient basis, Nemours/Alfred I. duPont Hospital for Children in Wilmington, Del., offers a warm, family-centered environment, complete with access to all the specialists and the support services a child and family may need.

Free self or valet parking is available.

Outpatient Orthopedic Services, Imaging and Therapy Locations

**Delaware**
Nemours/Alfred I. duPont Hospital for Children
1600 Rockland Road
Wilmington, DE 19803
(302) 651-4000

**Pennsylvania**
Nemours duPont Pediatrics, Bryn Mawr*
Bryn Mawr Medical Arts Pavilion
825 Old Lancaster Road Suite 250
Bryn Mawr, PA 19010
(610) 542-3300

**New Jersey**
Nemours duPont Pediatrics, Voorhees
443 Laurel Oak Road, Suite 230
Voorhees, NJ 08043
(856) 309-8508

*Ambulatory Surgery Center at this location.

Outpatient therapy services (PT, OT, Speech, Feeding/swallowing) also offered at our Bear, Delaware, location.

Physician Priority Line
(24/7 access to a Nemours specialist to discuss a specific patient)
(800) 829-KIDS (5437)

Appointment Scheduling
(for all locations)
(800) 416-4441

Arthrogryposis Program
(302) 651-5007

Bone Density Program
(302) 651-6040

Cast Room
(302) 651-5854

Center for Sports Medicine
(302) 298-7200

Emergency Department
(302) 651-4186

Gait and Motion Analysis Lab
(302) 651-4248

Muscle Disorders Program
(302) 651-5890

Orthopedic Office
(302) 651-5913

Orthopedic Outpatient Clinic
(302) 651-5913

Inpatient and Outpatient Rehabilitation
(302) 651-5605

Outpatient Therapy Services
(302) 651-4354

Spasticity and Movement Disorders
(302) 651-5611

Wheelchair and Mobility Clinic
(302) 651-5850
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Areas of Expertise: Sports Medicine

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Areas of Expertise: Oncology, Developmental Dysplasia of the Hip

Jennifer Ty, MD
NPI: 1174605414
Areas of Expertise: Hand and Upper Extremity
Nemours/Alfred I. duPont Hospital for Children

- Nemours/Alfred I. duPont Hospital for Children, named one of the best children’s hospitals in the nation by *U.S. News & World Report*, is ranked in all 10 surveyed specialties including cancer, cardiology and heart surgery, diabetes and endocrinology, gastroenterology (GI) and GI surgery, neonatology, neurology and neurosurgery, nephrology, orthopedics, pulmonology, and urology.

- Nemours/Alfred I. duPont Hospital for Children is one of only 20 children’s hospitals in the nation ranked in all 10 specialties by *U.S. News & World Report*.

- The duPont Hospital for Children has achieved Magnet status, the nation’s highest credential for nursing excellence.

- At Nemours/Alfred I. duPont Hospital for Children, our rehabilitation program is the only pediatric rehabilitation program in the greater Philadelphia region accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF), demonstrating our commitment to provide the highest quality patient care.