IWK Health Centre Department of Orthopaedics
Dalhousie University Division of Orthopaedics

Paediatric Orthopaedic Surgery Fellowship
Applicant Information

Dr. Ron El-Hawary
Dr. Karl Logan
Dr. Ben Orlik
Dr. Luke Gauthier
Dr. Catherine Coady

Fellowship in Paediatric Orthopaedic Surgery

Introduction

The Paediatric Orthopaedic Fellowship in the Division of Orthopaedic Surgery, Department of Surgery is primarily based at the IWK Health Centre in Halifax, Nova Scotia. This is a tertiary care hospital and Level 1 trauma center that provides care for residents of the Halifax Regional Municipality and surrounding areas, and advanced subspecialty paediatric orthopaedic care for the rest of Nova Scotia, as well as Prince Edward Island and New Brunswick.

The fellowship program generally accepts two fellows per year: One fellow from the POSNA / San Francisco Match and one fellow from outside of the match. The fellows will work in rotations with all four of the full time paediatric orthopaedic surgeons at the IWK Health Centre: Dr. Ron El-Hawary, Dr. Karl Logan, Dr. Ben Orlik, and Dr. Luke Gauthier. Over 800 O.R. cases and almost 12,000 clinic visits per year are seen. There are one to three clinics per day and four O.R. days per week.

The orthopaedic surgeons are part of the Orthopaedic Care Team at the IWK Health Centre. This care team works collaboratively in planning, coordinating, delivering and evaluating quality orthopaedic care for children and families from the Maritime Provinces. It consists of physicians, nurses, physiotherapists, child life specialists, occupational therapists, diagnostic imaging and orthopaedic technologists.

The fellow's clinical exposure will consist of two to four operating room days and one to four half-day clinics per week. All clinical activities will be under the supervision of one or more of the teaching faculty. The exception will be a fellow directed fracture clinic one half day per week.

Goals

1. To produce a Pediatric Orthopaedic Surgeon that is competent in the evaluation, diagnosis, and treatment of musculoskeletal disorders of childhood.

2. To understand how factors such as diagnosis, family, and psychosocial dynamics relate to orthopaedic decision-making and the formulation of treatment plans.

3. To contribute to the field of Pediatric Orthopaedics through clinical activities, research, and teaching.

Objectives

The fellow is expected to continue to develop in the CanMEDS roles of:

a. Communicator
b. Collaborator
c. Manager
d. Health advocate
e. Scholar
f. Professional

The most prevalent diagnoses and pathology on the IWK Pediatric Orthopaedics team have historically included fractures, limb length inequality/angular deformity, hip abnormalities, foot deformities, spine deformities, infection, and the musculoskeletal manifestations of neuromuscular disease.

Fractures

- To understand pediatric trauma including common fractures and their treatment.

- To understand and apply sound treatment principles to rare and complex fractures such as those of the spine, pelvis, and hip.

- To apply non-operative methods of treatment (i.e. splints, casts, braces, traction) to these fractures.

- To apply operative techniques when indicated. This includes percutanous pinning, open reduction internal fixation, external fixation, and intra-medullary nailing.

- To understand the significance of the physis and how it affects the management, healing, and outcome of pediatric fractures.

- To understand the potential for growth arrest that may lead to limb length inequality and / or angular deformity.

Leg Length Discrepancy / Angular Deformity

- To understand the etiologies of leg length discrepancy (LLD) and angular deformity.

- To prevent LLD and angular deformity whenever possible by recognizing early signs and high risk situations with potential for creating significant deformity.

- To understand the prediction of future growth and its impact on the timing of the treatment of LLD and angular deformity.

- To be able to pre-operatively plan and template the operative correction of LLD and angular deformity.

- To understand the treatment options for growth manipulation, including epiphysiodesis, acute deformity correction, gradual deformity correction, and shortening.

Limb Deficiency

- To attend the multi-disciplinary limb deficiency clinic and to be able to evaluate the child with limb deficiency.

- To be competent in the decision-making process regarding treatment of the limb deficient child.

- To understand the surgical principles and psychosocial effects of amputation and limb lengthening.

Hip

- To learn the primary management and operative treatment of developmental dysplasia of the hip from infancy to adolescence.

- To understand the principles and treatment options of slipped capital femoral epiphysis, Legg-Calve-Perthes disease, and coxa vara.

- To understand the principles and operative technique of pelvic and proximal femoral osteotomies. This includes, but is not limited to Salter's Innominate osteotomy, Pemberton osteotomy, Dega osteotomy, Chiari osteotomy, Shelf osteotomy, Ganz peri-acetabular osteotomy, and proximal femoral uniplanar and biplanar osteotomies.

Foot

- To understand the treatment principles of congenital foot anomalies, including clubfoot, metatarsus adductus, and vertical talus. The fellow will learn the non-operative correction of clubfoot, including Ponseti's casting protocol. In addition, there will be exposure to the surgical intervention necessary for refractory or recurrent foot deformity.

- To learn the principles of the investigation and treatment of developmental foot deformities, such as cavus and pes planus.

Spinal Deformity

- To understand the nature, investigations, and treatment of idiopathic scoliosis. This will include clinical assessment, non-operative treatment (i.e. bracing), and indications for surgery. The fellow will have the opportunity to participate in posterior spinal fusion and instrumentation, as well as anterior techniques such as open thoracotomy, thoracoabdominal approaches, and thoracoscopic techniques.

- To learn the principles of early-onset scoliosis. An opportunity exists to be involved in the care of these patients. This includes, but is not limited to casting, traction, and surgical intervention (growing rods, VEPTR, Shilla, TROLLEY, MAGEC, vertebral body stapling, vertebral body tethering, ApiFix).

- The fellow will be exposed to neuromuscular spine deformities and will be able to participate in techniques of posterior spinal fusion and instrumentation, including Ponte osteotomies, and intra-operative traction techniques. An opportunity should arise to participate in kyphectomy for severe neuromuscular kyphotic deformities.

- To obtain an understanding of idiopathic sagittal-plane deformities, such as Scheurrmann's kyphosis, congenital kyphosis, and spondylolisthesis. This will include indications for bracing, posterior surgery, and combined anterior and posterior surgery. Opportunities may arise to learn specialized techniques shuch as pedicle subtraction osteotomy for focal kyphotic deformities and the Bohlman technique for spondyloptosis.

Neuromuscular Disease

- The fellow will obtain proficiency in the management of patients with neuromuscular disorder. This will include exposure to multi-disciplinary clinics, such as spina bifida and cerebral palsy. The indications and timing of surgery for these patients will be emphasised.

- The fellow should understand the uniqueness and importance of the surgical team's relationships with the neuromuscular patient, family, and affiliated health care professionals.

Infection

- To understand the etiology, pathophysiology, presentation, investigations, and treatment of musculoskeletal infection. This will include acute and chronic osteomyelitis, septic joints, and infectious diskitis / vertebral osteomyelitis.

Musculoskeletal Tumour

- The fellow should be able to recognize benign and malignant musculoskeletal tumours and to formulate a differential diagnosis.

- To be aware of the principles of biopsy of orthopaedic tumours.

- To be competent in the non-operative and operative treatment of benign tumours.

- To be able appropriately consult with a multi-disciplinary team the management of malignant musculoskeletal tumours.

Sports Medicine

- To be exposed to and diagnose common pediatric knee and sports medicine pathology.

- To recognize the differences in the anatomy of pediatric patients and how this affects the treatment of sports medicine injuries.

- To have appropriate training and exposure to arthroscopic techniques.

Clinical Responsibilities

Inpatient and Ambulatory Care

Inpatient and ambulatory care is provided to children who require, or may require, operative or non-operative orthopaedic intervention and follow-up. Offering specialist tertiary care as well as providing local referral, children are assessed on both an emergency and an elective basis. Long-term follow-up care is provided to children with many acute and chronic orthopaedic conditions. While some children are cared for as inpatients, many more are treated on an outpatient basis through the fracture, general orthopaedic, rehabilitation, scoliosis, specialy hip and partnership clinics.

Each of the orthopaedic surgeons has five ½ day clinic sessions per week.

Dr. El-Hawary – Scoliosis, fracture, general orthopaedic clinics.

Dr. Logan – Hip, fracture, general orthopaedic clinics.

Dr. Orlik – Scoliosis, fracture, rehab (1x per month), general orthopaedic clinics

Dr. Gauthier - Clubfoot, rehab, fracture, general orthopaedic clinics.

Dr. Coady – Fracture (including paediatric sport medicine)

The fellow will be expected to round on the in-patient unit with the resident team each week day morning.

Surgical Experience

The fellow will have the opportunity to assist and perform surgical cases between two and four days per week. They are expected to pre-operatively plan for these cases and to take an active role in the pre-operative preparation of surgical patients.

An important part of the fellowship will consist of interacting with residents that are enrolled in the Dalhousie University Post-Graduate Programs. The goal will be to allow the fellow to act as a junior consultant and to help mentor our residents. They will share surgical cases according to the complexity of the surgery and the skill level of both the fellow and the resident. This will be pre-determined prior to the start of the operation. On-Call and Fracture Room surgical cases will be an opportunity for the fellow to teach surgical techniques to the residents with graduated responsibilities.

Fellows will keep a log of their surgical cases and submit a copy to the Administrative Assistants for timely surgical assist billing. This will include the attending staff, patient demographics, diagnoses and procedures.

At the fellow's request, a billing report can be accessed and made available to the fellow. The log will be reviewed by the fellowship director every quarter.

On Call Duties

Trauma and fracture management is of great importance to the pediatric orthopaedic surgeon. The fellow is expected to be on-call approximately every fourth night and weekend throughout the fellowship. An orthopaedic resident will take "first call" for issues on the orthopaedic ward and in the emergency department. The fellow is expected to be available to assist the resident in this capacity should the resident have any questions or need assistance.

One of the paediatric orthopaedic faculty members will also be on the "on-call" team and will be available for operative cases. Through the year, the fellow is expected to gain independence while on call.

Case Logs

Welcome to your pediatric orthopaedic fellowship training year! As part of the educational process, you are required to have a log of cases completed during your training. For those of you at programs that are ACGME accredited, you are required to log cases through the ACGME website/ADS system. For many of you, you will use the same login information as you used during residency training. If you cannot access the case log system through ACGME, please contact them directly for instructions.

For fellows training at POSNA accredited programs (i.e. the program is NOT ACGME accredited), you will log cases on the New Innovations website. Your login instructions will be sent to your program coordinator within the next 48 hours. Please take a few minutes to familiarize yourself with the site, and begin logging cases as soon as possible.

Attached to this message are guidelines to log cases, which applies to ALL fellows (at both ACGME and POSNA accredited programs). Please use this as a reference guide to allow consistent documentation of surgical cases performed. While the document "POSNA case log guidelines" is directed at fellows logging into New Innovations, the case examples can also be applied to logging cases into ACGME. The New Innovations Guide for Fellow Case logs ONLY applies to fellows at POSNA accredited programs.

At the end of your training year, your case logs will be reviewed and verified by POSNA. You will receive an anonymous program evaluation to complete as well. Once your case logs are completed, and the program evaluation form submitted, you will be sent your POSNA diploma certifying completion of pediatric orthopaedic fellowship training.

Any questions please let me know. I hope you all have an enjoyable year ahead!

Marcella Rae Woiczik, MD
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Pediatric Orthopaedic Fellowship Director

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Academic Rounds

Multidisciplinary Post-Operative Rounds: Tuesdays 12:00-12:45 pm. Hyndman Conference Room (3rd Floor OR). Power point presentation prepared by the residents, with occasional help from the fellows. Include all patients that had surgeries over the past week. Begin with the patients that are still in house. These rounds are multi-disciplinary and are intended as to be an important means of communication between the team. The power points that are prepared for rounds are an excellent repository for Grand Rounds presentations, teaching rounds, examinations, etc.

Pre-Operative Indication Rounds: Tuesdays 12:45-1:30 pm. Hyndman Conference Room (3rd Floor OR). Power point presentation prepared by the residents, with occasional help from the fellows. Include all patients with scheduled surgeries for the upcoming week (the following Monday included). These rounds are not multi-disciplinary and are only attended by the orthopaedic surgeons, fellows and residents. It allows a forum for more focused surgical teaching and frank discussions about surgical indications. The power points that are prepared for rounds are an excellent repository for Grand Rounds presentations, teaching rounds, examinations, etc. Approximately once per month, these rounds are cancelled in order for us to hold clinic staff meetings. During those weeks, we will only have the multidisciplinary post-operative rounds from 1:00-1:30 pm ("Speed Rounds").

Paediatric Orthopaedic Fellow Rounds: Wednesdays at 4:30 pm – Albert Sinclair Library (Orthopaedic Clinic). A schedule is available from Kristina Manuel and is sent to the Dalhousie Division on a weekly basis by Marlo Ferguson through This Week in Orthopaedics.

Paediatric Orthopaedic Gait Rounds: first Tuesday / month 7:30am - Hyndman OR Conference Room, 3rd floor.

Dalhousie University Division of Orthopaedics Grand Rounds: Three times per month, Wednesdays 7:30 – 8:30 a.m., New Halifax Infirmary. Expectation of the fellow is to present at least one topic. A schedule is sent to the Dalhousie Division of Orthopaedics on a weekly basis by Marlo Ferguson through This Week in Orthopaedics.

Dalhousie University Department of Surgery Grand Rounds: Second Wednesday per month, 7:30 – 8:30 a.m., New Halifax Infirmary, Royal Bank Theatre.

Dalhousie University Division of Orthopaedics Journal Club: Dalhousie University's Division of Orthopaedics meets monthly for journal club. Recent papers from both the adult and pediatric orthopaedic literature will be reviewed and critiqued.

Research

Research is an important aspect of this fellowship program. The fellow is expected to complete at least one clinical or basic science project during the year. This project should be of sufficient quality for presentation at the national or international level, and ideally for publication in a peer-reviewed journal.

The major strength of our approach to research stems from our many collaborations within the IWK, the entire Dalhousie Division of Orthopaedics, through several Departments within Dalhousie University and through multi-centre studies. See Appendix B for details of research team, collaborations, and current projects.

Administration

The fellow will be responsible for appropriate documentation in the patient record, including timely dictation of clinic notes, operative reports, and discharge summaries for patients directly under their care. This includes logging into the escription system frequently to correct and sign off on dictated reports.

Recommended Reading

The fellow will be expected to critically evaluate clinical literature during the weekly paediatric orthopaedic rounds and during the monthly journal club, and should be prepared to comment on relevant articles; to read the pertinent journals (such as JPO and JBJS); and be capable of performing computerized literature searches.

Salary

Annual salary of $60,000 will be paid in bi-weekly installments. These funds are paid from MSI billings generated as a surgical assistant. Accurate and timely submission of OR billings is essential. No additional benefits are included.

Conferences

Funding is available for the fellow to attend one to two conferences during their fellowship year, typically including the annual meeting of the Paediatric Orthopaedic Society of North America. Original conference registration, travel and accommodation receipts must be submitted to Kristina Manuel, who will organize for reimbursement from the Dalhousie Fellowship Fund.

Vacation

Four weeks of vacation time is permitted per year. This should be coordinated with the vacation schedule of the preceptor to minimize impact on educational opportunities. Vacation must be approved in advance by the fellowship director.

Assessment and Evaluation

Evaluation of the fellow will be ongoing throughout the fellowship year. Appropriate feedback is an important aspect of learning. This will include clinical skills as judged by the fellow's performance in the out-patient clinics, emergency department, operating rooms, and on the ward. Technical skills will be assessed in the operating room.

Every 3 months, the fellow will be formally assessed by the supervisor. Promotion and continuation of the training will depend on the ability to meet objectives. If the fellow demonstrates insufficient progress in any of the key areas, a period of 3 months remediation will be provided followed by reassessment of the candidate. If satisfactory progress is not demonstrated, the fellowship will be terminated. See Appendix C for a copy of the Evaluation Form.

The fellow will also have the opportunity to formally evaluate the fellowship experience to identify any areas of deficiency or concern.

Completion of Training

Upon successful completion of training, the fellow will receive a certificate of completion signed by the Fellowship supervisor, as well as the chiefs of the Division of Orthopaedic surgery, and the Department of Surgery.

Teaching Faculty

Name	Fellowship Affiliation	University Appointment
Dr. R. El-Hawary	Chief Pediatric Orthopaedics, IWK	Professor
Dr. K. Logan	Attending Orthopaedic Surgeon, IWK	Assistant Professor
Dr. B. Orlik	Attending Orthopaedic Surgeon, IWK	Assistant Professor
Dr. L. Gauthier	Attending Orthopaedic Surgeon, IWK	Assistant Professor
Dr. C. Coady	Attending Pediatric Sports Medicine Surgeon, IWK/QEII	Associate Professor

Schedule of Rotations

The Orthopaedic Surgery Fellows will rotate through the Blue and Gold teams, with changes occurring on the 1st Monday of the month, every 3 months (Feb, May, Aug, Nov).

Blue Team – Dr. Ron El-Hawary, Dr. Luke Gauthier
Gold Team – Dr. Karl Logan, Dr. Ben Orlik

Fellows Schedule – July 2020										
		MONDAY		**TUESDAY**		**WEDNESDAY**		**THURSDAY**		**FRIDAY**
REH / LG	**AM**	Scoli (REH)		G.O. (LG)		# (REH)		O.R. (REH)		O.R. (LG)
	PM	Research		G.O. (REH)		CF (LG)		O.R. (REH)		O.R. (LG)
KL / BO	**AM**	O.R. (BO)		Fracture (BO)		O.R. (KL)		Hip (KL)		G.O. (KL)
	PM	O.R. (BO)		Scoli (BO)		O.R. (KL)		Hip (KL)		Research

Staff Surgeons

Dr. Ron El-Hawary Dr. El-Hawary is Chief of Orthopaedics at the IWK Health Centre and is Professor, Department of Surgery, Dalhousie University (Cross-appointments with the School of Biomedical Engineering and with the Division of Neurosurgery). He is currently President of the Canadian Pediatric Orthopaedic Group, President of the Children's Spine Foundation, and President of the Pediatric Spine Study Group. Dr. El-Hawary is also serving as a member of the Scoliosis Research Society's Education Resource Committee and Growing Spine Committee. He was a recent member of the Board of Directors of both Scoliosis Research Society and Pediatric Orthopedic Society of North America and has been Chair of the Royal College of Physicians and Surgeons of Canada Orthopaedic Examination Committee and was Founding President of the Canadian Pediatric Spine Society.

Dr. El-Hawary's education consisted of a Bachelor of Mechanical Engineering (1994), Bachelor of Science in Medicine (1998), and Medical Doctorate (1998) all from Dalhousie University in Halifax, Nova Scotia, Canada. He completed his Residency in Orthopaedic Surgery (2003) and his Master of Science in Medical Biophysics (2004) from the University of Western Ontario in London, Ontario, Canada. He received further education as an Edwards Fellow in Paediatric Orthopaedics and Scoliosis Surgery at the Texas Scottish Rite Hospital for Children in Dallas, Texas (2005). In 2006, he was chosen to be a Scoliosis Research Society Dawson Traveling Fellow and, in 2010, was selected to be a Paediatric Orthopaedic Society of North America European Traveling Fellow. His clinical interests are varied, with the main focus being the correction of spinal deformity. This includes the treatment of all forms of scoliosis, including early onset scoliosis (casting, growing rods, VEPTR, MAGEC, TROLLEY, posterior dynamic deformity correction - Apifix, vertebral body stapling - VBS, vertebral body tethering - VBT, and thoracoscopic techniques). His research interests include scoliosis, Paediatric trauma, and radiostereophotogrammetric analysis (RSA).

Dr. Karl J. Logan is a Paediatric Orthopaedic Surgeon at the IWK Health Centre and Assistant Professor of Surgery at Dalhousie University. He was born in Newcastle-Upon-Tyne a border city between England and Scotland. He schooled in Newcastle. His undergraduate education was at the University of Liverpool Medical School from which he graduated with commendation in 1999. He did his house jobs at the Royal Liverpool University Hospital. Always interested in surgery he intended to be a cardiac surgeon that was until he experienced the enthusiasm and dynamism of the Orthopaedic Division at the Norfolk and Norwich Hospital. This was one of the sites in the UK of pioneering surgery in the treatment of tuberculosis of the hip and the design and implantation of some of the first successful hip replacements in the world. He did his basic surgical training at the Norfolk and Norwich Hospital and was admitted to the Royal College of Surgeons as a member in 2002. He was appointed as the Smith and Nephew trauma fellow at the Norfolk and Norwich Hospital in 2003 and gained a huge

amount of operative experience during this time. It was during his basic surgical training that he assisted in an open reduction and innominate osteotomy of the hip, to treat a dislocated hip in a child, surgery pioneered by Dr Robert Salter from the Hospital for Sick Children in Toronto. This was a catalyst in Dr Logan wanting to pursue a career in paediatric orthopaedic surgery.

Dr Logan began higher surgical training on the prestigious Percival Pott training program in 2004. He rotated over 6 years through hospitals in Chelmsford, Harlow, Norwich, Great Ormond Street in London, The Royal National Orthopaedic Hospital in London and the Royal London Hospital. Based on his desire to pursue a career in paediatric orthopaedics and the particular operation that sparked this interest he applied to the Hospital for Sick Children in Toronto and was accepted as a fellow in 2008. He passed the final part of his post graduate exams in trauma and orthopaedics in 2008 to be admitted as a fellow to the Royal College of Surgeons of England. Dr Logan was lucky enough to get to know Dr Robert Salter and to work under the instruction of his prodigy Dr John Wedge during his fellowship. He took up post at the IWK in Halifax in March of 2010. His subspeciality interest is the treatment of paediatric, adolescent and young adult hip disease, although he maintains a general paediatric orthopaedic and trauma practice. He had been married to Joanne for 15 years and has three children, all boys, Evan, Jem and Zac.

Dr. Ben Orlik is a paediatric orthopaedic surgeon who graduated with a with a Bachelor of Science in Chemistry from The University of King's College in 1997 and with a Bachelors of Science in Kinesiology (2005), a Bachelor of Medical Science (2005), and a Medical Doctorate (2005), all from Dalhousie University. In 2010 he completed his Residency in Orthopaedic Surgery from Dalhousie University. Dr. Orlik completed a fellowship in Paediatric Orthopaedic Surgery from the University of California Los Angeles (UCLA) Orthopaedic Hospital in 2011. Currently Dr. Orlik is studying to complete his Masters in Science in Community Health and Epidemiology. Dr. Orlik is an Assistant Professor of Surgery at Dalhousie University. He is the Director of the Limb Deficiency Clinic and also works with the Cerebral Palsy and Spina Bifida Clinics. His areas of interest are scoliosis, club foot and limb deficiency correction. Dr. Orlik lives in Halifax with his wife Cheryl and 3 boys – Jakob, Everett and Wilhem.

Dr. Luke Gauthier is the newest member of the pediatric orthopaedic department at IWK Health Centre. Dr. Gauthier received his Bachelor of Science in Biochemistry at Mount Allison University in 2003 MD from the Memorial University of Newfoundland in 2007. He completed his Residency in Orthopaedic Surgery at the University of Ottawa in 2012. Dr Gauthier began his pediatric orthopaedic fellowship at IWK Health Centre in 2012, which was completed just prior to accepting a full-time staff position in conjunction with appointment to assistant professor at Dalhousie University. His major clinical interests are neuromuscular orthopaedics as well as clubfoot. He is a member of the Canadian Orthopaedic Association, as well as the Pediatric Orthopedic Society of North America, and the American Academy of Cerebral Palsy and Developmental

Medicine. He is Director of the Neuro-Orthopaedic Clinics, the Clubfoot Clinic, as well as Director of Research in Pediatric Orthopaedics. Dr.Gauthier and his wife are from New Brunswick. They are the proud parents of three children, they are very excited to be in the Maritimes, close to family and friends.

Dr. Catherine M. Coady is a full time Associate Professor of Orthopaedic Surgery at Dalhousie University. She completed her medical training at Dalhousie University School of Medicine in 1990 and completed specialty training in orthopaedic surgery in 1995. Dr. Coady completed a 6-month sports medicine fellowship with Dr. WD Stanish at Dalhousie University followed by a one year pediatric and adult sports medicine fellowship with Dr. Lyle Micheli in Boston, Massachusetts. Dr Coady joined staff at the QEII Health Sciences Centre and IWK Health Centre in 1997. Her main area of interests includes knee and shoulder problems with a special interest in arthroscopic surgery. She also treats children and adolescents with sports related injuries and fractures. She is a member of Canadian Orthopaedic Association, Arthroscopy Association of North America, Canadian Academy of Sports Medicine as well as Canadian University Surgeons Education Committee and the Association for Surgical Educators. In her free time, Cathy enjoys family life with her husband, Blair, and their seven children.

Recent Publications from IWK Orthopaedics

The IWK Paediatric Orthopaedic Research Team includes Steve Van Iderstine (Manager), Jennifer Hurry (Engineer), Mandy Bouchard (Coordinator), Dr. Susan Morris (Neurophysiology).

Several national and international collaborations can be found in the following list of recent publications from IWK Ortho:

The Effect of Spinopelvic Parameters on the Development of Proximal Junctional Kyphosis in Early Onset: Mean 4.5-Year Follow-up.
Gomez JA, Kubat O, Tovar Castro MA, Hanstein R, Flynn T, Lafage V, Hurry JK, Soroceanu A, Schwab F, Skaggs DL, El-Hawary R; Pediatric Spine Study Group (PSSG).
J Pediatr Orthop. 2020 Feb 6.

Idiopathic Early-onset Scoliosis: Growing Rods Versus Vertically Expandable Prosthetic Titanium Ribs at 5-year Follow-up.
Bachabi M, McClung A, Pawelek JB, El Hawary R, Thompson GH, Smith JT, Vitale MG, Akbarnia BA, Sponseller PD; Children's Spine Study Group, Growing Spine Study Group.
J Pediatr Orthop. 2020 Mar; 40(3):142-148.

Distraction-based surgeries increase thoracic sagittal spine length after ten lengthening surgeries for patients with idiopathic early-onset scoliosis.
El-Hawary R, Chukwunyerenwa CK, Gauthier LE, Spurway AJ, Hilaire TS, McClung AM, El-Bromboly Y, Johnston CE; Children's Spine Study Group.
Spine Deform. 2020 Apr; 8(2):303-309

Surgical management of moderate adolescent idiopathic scoliosis with a fusionless posterior dynamic deformity correction device: interim results with bridging 5-6 disc levels at 2 or more years of follow-up.
Floman Y, El-Hawary R, Millgram MA, Lonner BS, Betz RR.
J Neurosurg Spine. 2020 Jan 10:1-7.

Development of a perioperative venous thromboembolism prophylaxis algorithm for pediatric orthopedic surgical patients.
Padhye K, El-Hawary R, Price V, Stevens S, Branchford B, Kulkarni K.
Pediatr Hematol Oncol. 2020 Mar; 37(2):109-118.

CORR Insights: Does Kyphectomy Improve the Quality of Life of Patients With Myelomeningocele?
El-Hawary R.
Clin Orthop Relat Res. 2020 Jan; 478(1):112-113.

VEPTR Treatment of Early Onset Scoliosis in Children without Rib Abnormalities: Long-term Results of a Prospective, Multicenter Study.
El-Hawary R, Morash K, Kadhim M, Vitale M, Smith J, Samdani A, Flynn J; Children's Spine Study Group.
J Pediatr Orthop. 2019 Sep 20.

Outcomes of Primary and Conversion Magnetically Controlled Growth Rods Are Different at Two-Year Follow-up: Results of North American Release.
Hung CW, Vitale MG, Samdani A, Matsumoto H, Smith JT, Sturm PF, Sponseller PD, Luhmann SJ, St Hilaire T, El-Hawary R, Sawyer JR.
Spine Deform. 2019 Sep; 7(5):829-835

Distraction-Based Surgeries Increase Spine Length for Patients with Nonidiopathic Early-Onset Scoliosis-5-Year Follow-up.
ElBromboly Y, Hurry J, Padhye K, Johnston C, McClung A, Samdani A, Glotzbecker M, Attia A, St Hilaire T, El-Hawary R; Children's Spine Study Group; Growing Spine Study Group.
Spine Deform. 2019 Sep; 7(5):822-828.

Growth Friendly Surgery and Serial Cast Correction in the Treatment of Early-onset Scoliosis for Patients with Prader-Willi Syndrome.
Oore J, Connell B, Yaszay B, Samdani A, Hilaire TS, Flynn T, El-Hawary R; Children's Spine Study Group; Growing Spine Study Group.
J Pediatr Orthop. 2019 Sep; 39(8):e597-e601

Relationship of muscle morphology to hip displacement in cerebral palsy: a pilot study investigating changes intrinsic to the sarcomere.
Larkin-Kaiser KA, Howard JJ, Leonard T, Joumaa V, Gauthier L, Logan K, Orlik B, El-Hawary R, Herzog W.
J Orthop Surg Res. 2019 Jun 21; 14(1):187.

The creation of a national coalition to target adolescent idiopathic scoliosis: a meeting report.
Cioana M, Peterson D, Missiuna P, El-Hawary R, Carey T, Potter MA, Banfield L, Thabane L, Samaan MC.
Adolesc Health Med Ther. 2019 Feb 22; 10: 15-19.

Stiffness of hip adductor myofibrils is decreased in children with spastic cerebral palsy.
Leonard TR, Howard JJ, Larkin-Kaiser K, Joumaa V, Logan K, Orlik B, El-Hawary R, Gauthier L, Herzog W.
J Biomech. 2019 Apr 18; 87: 100-106.

Pre-Clinical Bench Testing on a Novel Posterior Dynamic Deformity Correction Device for Scoliosis
Arnin U, El-Hawary R, Betz RR, Lonner BS, Floman Y
Spine Deform. 2019 Mar; 7(2):203-212

Superior Extension of Upper Instrumented Vertebrae in Distraction Based Surgery: A Surrogate for Clinically Significant Proximal Junctional Kyphosis
Nadim Joukhadar, Ozren Kubat, John Heflin, Mohamad S. Yasin, Anna McClung, Tara Flynn, Megan Sheppard, David Skaggs, Ron El-Hawary, Growing Spine Study Group, Children's Spine Study Group
Spine Deform. 2019 Mar; 7(2):371-375

Brace treatment in adolescent idiopathic scoliosis: risk factors for failure—a literature review
R El Hawary, D Zaaroor-Regev, Y Floman, BS Lonner, YI Alkhalife, RR Betz
The Spine Journal. 2019 Vol. 19, Issue 12, p1917–1925.

New Technologies in Pediatric Spine Surgery.
Alkhalife YI, Padhye KP, El-Hawary R.
Orthop Clin North Am. 2019 Jan; 50(1):57-76

Jennifer K. Hurry, Saad Rehan, Alan J. Spurway, Elise K. Laende, Janie L. Astephen Wilson, Karl J. Logan, Michael J. Dunbar, Ron El-Hawary
The Reliability of Radiostereometric Analysis in Determining Physeal Motion in Slipped Capital Femoral Epiphysis in Standard Uniplanar and Low-Dose EOS Biplanar Radiography: A Phantom Model Study
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Fellows have played a major role in our research program and have presented at conferences including International Congress of Early Onset Scoliosis, International Meeting for Advanced Spine Techniques, and the Canadian Spine Society. Fellows have published manuscripts and book chapters. Several opportunities exist for fellows in our program to participate in active or in new research projects.