

CURRICULUM VITAE

NAME:

APRIL LYN MCPHERSON

EMPLOYMENT ADDRESS:

University of Cincinnati
2600 Clifton Ave.
Cincinnati, Ohio 45220
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EDUCATION:

Expected April 2016 B.S.

Biomedical Engineering, University of Cincinnati, Cincinnati, Ohio
Certificate of Cooperative Education Excellence
GPA: 3.828 / 4.000

PROFESSIONAL EXPERIENCE:

Aug 2013 – Dec 2013 Packaging Development Co-op, Ethicon Endo-Surgery

- Designed sterile barrier packaging systems for medical devices
- Executed performance testing protocols and recorded results
- Supported Center of Excellence (COE) to meet critical business objectives and industry requirements
- Built endoscopic stapling device shafts for biocompatibility study
- Evaluated burst pressure of vessels sealed with an Energy device using a burst pressure tester
- Designed prototype samples on ArtiosCAD software and executed on Kongsberg plotter/cutter table
- Contributed to developing testing methodology to evaluate seal integrity of sterile barrier packaging
- Wrote engineering studies and protocols for sample creation, testing procedures, and item analysis
- Analyzed test data utilizing Minitab Statistical software to establish product requirements
- Executed research to complete actions items necessary to resolve various audit findings regarding test method discrepancies, product issues, and customer complaints
- Co-op Volunteer Committee Leader

June 2013 – Apr 2014 Biodynamics Research Intern, Cincinnati Children's Hospital Medical Center.

- Worked with OpenSim Biomechanics software to develop human motion simulations
- Focused on muscle and joint reactions during drop vertical jump motion
- Observed research and testing using Kuka Robot, 3D motion capture
- Assisted with human cadaver limb dissection and robotic simulation preparation
- Wrote programming code to retrieve and analyze Nationwide Inpatient Sample (NIS) data for epidemiological study

May 2014 – Aug 2014 Sports Biomechanics Intern, Motus Global.

- Developed biomechanical analyses that provide invaluable feedback to athletes and coaches using 3D motion capture
- Wrote custom MATLAB software for track and field, football analytic reports
- Utilized literature research resources to develop specific reporting models for track and field
- Administered motion capture protocols, assisting with technology set-up and calibration and marker placement on athletes

Jan 2015 – Aug 2015 Biomechanics Engineer, Motus Global.

- Developed new lab-based physics engines and innovative IMU wearable technology systems

- Used proprietary software to create professional reports to give athletes, coaches, and trainers critical feedback regarding an athlete's mechanics
- Worked with professional athletes to perform biomechanical assessments of sport-specific movements, with the goals of improving performance and decreasing injury risk
- Analyzed data for biomechanical research studies
- Hands-on product manufacturing and package assembly, and preparation for customer shipments

PUBLICATIONS:

2015 Bates, N.A., **McPherson, A.L.**, Rao, M.B., Myer, G.D., Hewett, T.E. "*Characteristics of inpatient anterior cruciate ligament reconstructions and concomitant injuries.*" *Knee Surgery Sports Traumatology and Arthroscopy, in-press.*

ABSTRACTS:

Aug 2015 Bates, N.A., **McPherson, A.L.**, Nesbitt, R.J., Shearn, J.T., Myer, G.D., Hewett, T.E. "*Robotic Simulation of In Vivo Kinematics on Cadaveric Limbs Exhibit Minimal Mechanical Differences Between Contralateral Pairs.*" American Society of Biomechanics; Columbus, Ohio, Aug 5-8.

POSTER PRESENTATIONS:

Aug 2015 39th Annual Meeting of the American Society of Biomechanics, The Ohio State University, Columbus, Ohio, "*Robotic Simulation of In Vivo Kinematics on Cadaveric Limbs Exhibit Minimal Mechanical Differences Between Contralateral Pairs*"

TEACHING:

Fall 2014 ENED 1020, Engineering Foundations, Undergraduate Teaching Assistant, Engineering Department, University of Cincinnati

Fall 2014 ENED 1090, Engineering Models, Undergraduate Teaching Assistant, Engineering Department, University of Cincinnati

Fall 2015 ENED 1020, Engineering Foundations, Undergraduate Teaching Assistant, Engineering Department, University of Cincinnati

Spring 2016 ENED 1090, Engineering Models, Undergraduate Teaching Assistant, Engineering Department, University of Cincinnati

AWARDS AND HONORS:

Aug 2012 Discus Award Winner

Aug 2012 Freshman Biomedical Engineering Scholarship

Aug 2012 – Aug 2015 John G. and Betty J. Mick Scholarship

Aug 2012 – Apr 2016 Cincinnati Scholarship Award, University of Cincinnati

Aug 2012 – Dec 2015 Dean's List, University of Cincinnati

Aug 2013 Big East All-Academic Team

Aug 2013 Bearcats Strong, University of Cincinnati Athletic Department

Nov 2013 Johnson & Johnson Encore Award

June 2014 American Athletic Conference All-Academic Team

Aug 2014 Bearcats Strong, University of Cincinnati Athletic Department

June 2015 American Athletic Conference All-Academic Team

SOCIETAL MEMBERSHIPS:

2015-present American Society of Biomechanics

2015-present

Tau Beta Pi Engineering Honor Society

RELEVANT COURSEWORK:

Undergraduate:

BME2000 Introduction to Biomedical Engineering in the Clinical Environment

BME2010 Research Methods

BME3010 Research Design I

BME4010 Research Design II

BME3020 Sensing and Measurements

BME3071 Basic Electrical Circuits

BME4020 Control of Dynamical Systems

BME4021 Tissue Biomechanics

BME4051 Biomaterials in Medical Devices

BME4061 Biostatistics Research

BME5001-2 Senior Capstone

BME5099 Special Topics BME

BME6024 Joint Biomechanics and Measurement Methods

ENED1020 Engineering Foundations

ENED1090-91 Engineering Models

ENED3066 Engineering Statistics

ENGR6010 Effectiveness in Technical Organizations

MATH1062 Calculus

MATH2073 Differential Equations

PHYS2001 College Physics (Calculus-based)

BIOL1081-82 Biology

BIOL2001 Anatomy and Physiology

HNRS2081 Exploring Biomedical Research

AEEM1001 Statics and Basic Strength of Materials

HLSC2012 Medical Terminology

HLSC3031 General Exercise Physiology

SERVICE:

Dec 2008 – May 2012	Youth Running Club Volunteer Coach, Paul and Carol David YMCA
Aug 2010 – May 2012	Student Representative to World Language Community Advisory Board
Nov 2012 – June 2013	Child Life Activity Center Volunteer, Cincinnati Children's Hospital Medical Center
Jan 2014 – Apr 2014	Reading Volunteer, Faces Without Places
Jan 2015 – Aug 2015	Dog Volunteer, Last Hope Animal Rescue
Aug 2015 – Present	Student Representative to University Honors Program Engineering Development Committee
Aug 2015 – Present	University Honors Program Ambassador