Joshua R. Wiens

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# Education

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| Bachelor of Science – Mechanical Engineering | *University of Oklahoma, Norman, OK, May 2017* |

* Minor: Electrical and Computer Engineering
* **Primary Focus**: Electromechanical Systems

# Skills

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| Hardware/Design | Programming/Scripting | Interpersonal |
| * Control of Electromechanical Devices * Electrical Troubleshooting w/ Tools * Extrusion 3D Printing * Fabrication/Installation of Cable & Wiring * CAD (Solidworks/Autodesk) * Finite Element Analysis | * C/C++ * Python 3 * MATLAB * LabVIEW (Former CLAD) * Embedded Digital Control * Data Acquisition & Processing | * Leadership * Team Communication * Information Presentation * Personnel Training * Customer Service |

# Professional Experience

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| Systems Engineering Internship | *Ion Beam Applications (IBA), Nov 2015 - Present* |

* Proton Therapy system maintenance involving various subsystem including:
  + High power distribution
  + Large scale cooling
  + Mechanical patient positioning and beam delivery
  + High vacuum particle acceleration and transport
* Troubleshooting and resolving day-to-day system failures using various software and measurement tools.
* Trained to work in hazardous environments including: at heights, high voltage, live electricity, and radiation.

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| Shift Manager | *Five Guys, Jan 2014 – Nov 2015* |

* Team Leader, coordinator, and personnel training specialist.
* Detail oriented inventory and money management.

# Academic Experience/Achievements

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| Capstone Team Leader |  |

* Managed simultaneous development of two modular electro-hydraulic subsystems including test systems.
* Fabricated control/power infrastructure for electrical and hydraulic power distribution.
* Developed plug-and-play control module capable of independently controlling each of our 3 subsystems.
  + Designed hierarchical control system for simultaneous sensor acquisition/processing and control.
  + Fabricated microcontroller network via the I2C serial communication protocol.
  + Capable of receiving 5 Hall effect sensor inputs and control 2 stepper or brushless DC motors using 2 cables.

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| Autonomous Design Competition |  |

* Proposed the successful use of hexagonal matrix for ideal strength-weight characteristics in 3D printed chassis.
* Manually machined aluminum for rigidity-sensitive components such as the axels and steering column.
* Designed, fabricated, and installed electrical control and power subsystems.
* Developed embedded control system applying digital signal processing to external sensor feedback.
* Achieved highest score out of 30+ 4-man-teams with an unmatched 2 flawless attempts.

# References

* Kevin Sturm – Director of Operations IBA, North America; (571) 250-5831; [Kevin.Sturm@iba-group.com](mailto:Kevin.Sturm@iba-group.com)
* Ruben Reyes – Site Technical Leader IBA, Oklahoma City, OK; (405) 773-6789; [Ruben.Reyes@iba-group.com](mailto:Ruben.Reyes@iba-group.com)
* Dr. Harold Stalford – Professor, OU AME, Norman, OK; (405) 325-1742; [stalford@ou.edu](mailto:stalford@ou.edu)