



**Worcester Polytechnic Institute**

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**Title page for E-project-042413-160152**

<b>Project Type</b>	MQP
<b>Submission date</b>	2013-04-24
<b>Authors</b>	<ul style="list-style-type: none"> <li>• Alexandra V Fontaine, BE</li> <li>• Arben Koshi, BE</li> <li>• Danielle C Morabito, BE</li> <li>• Nicolas A Rodriguez, BE</li> </ul>
<b>URN</b>	E-project-042413-160152
<b>Title</b>	Reflectance-Based Pulse Oximetry for the Chest and Wrist
<b>Advisor</b>	<ul style="list-style-type: none"> <li>• Mendelson, Yitzhak, BE</li> </ul>
<b>Availability</b>	unrestricted
<b>Abstract</b>	
<p>Reflectance-based pulse oximetry is a technique used for noninvasively monitoring the oxygen saturation (SpO<sub>2</sub>) and pulse rate (PR). However, there is little supporting evidence that it can accurately collect measurements from the chest and wrist. In this project, a reflectance-based pulse oximeter was built and used to collect measurements while sitting, standing, during self-induced hypoxia, and during self-induced hyperventilation then compared to the measurements taken by a HOMEDIC Deluxe Pulse Oximeter. The prototype was able to accurately measure within an error of + 1% and ±3% for SpO<sub>2</sub> and PR respectively from the wrist while an error of ±1% and +4% for SpO<sub>2</sub> and PR respectively from the chest.</p>	
<b>Files</b>	<ul style="list-style-type: none"> <li>• <a href="#">Final_MQP_Report.pdf</a></li> </ul>

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Top