### Technology Management Seminar Series

**Graduate Seminars - Fall 2008**

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<th>Seminar Topic:</th>
<th>Retail Inventory Management when Records Are Inaccurate</th>
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<td><strong>Abstract:</strong></td>
<td>Inventory record inaccuracy is a significant problem for retailers using automated inventory management systems. In this seminar DeHoratius will share the research findings of the study she and her colleagues conducted.</td>
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<td>In their study DeHoratius et al. consider an intelligent inventory management tool that accounts for record inaccuracy using a Bayesian belief of the physical inventory level. They assume that excess demands are lost and unobserved, in which case sales data reveal information about physical inventory level and show that a probability distribution on physical inventory levels is a sufficient summary of past sales and replenishment observations, and that this probability distribution can be efficiently updated in a Bayesian fashion as observations are accumulated.</td>
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<td>They also demonstrate the use of this distribution as the basis for practical replenishment and inventory audit policies and illustrate how the needed parameters can be estimated using data from a large national retailer. The replenishment policies avoid the problem of &quot;freezing,&quot; in which a physical inventory position persists at zero while the corresponding record is positive. In addition, simulation studies show that our replenishment policies recoup much of the cost of inventory record inaccuracy, and that our audit policy significantly outperforms the popular &quot;zero balance walk&quot; audit policy.</td>
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**Nicole DeHoratius**  
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**Education:**
- **DBA.** Harvard Business School  
- **M.S.** University of Sussex  
- **B.A.** Harvard University

**Day:** October 30, 2008  
**Time:** Noon – 1 pm  
**Room:** Unitus Bldg. 507  
2121 SW 4th Avenue  
Portland, OR 97201