



BIOINFORMATICS 2014 FALL SEMINAR SERIES

Hosted by: Department of Computer and Information Sciences,
Department of Electrical and Computer Engineering &
Center for Bioinformatics and Computational Biology
<http://bioinformatics.udel.edu/seminars>

MONDAY, November 17, 2014

3:30pm

DBI Room 102

**Regulatory Bioinformatics –
Assessments Supporting Worldwide GMO Submissions**

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ABSTRACT: Prior to approval, geography-specific bioinformatic assessments of transgenic events are required as part of the "weight of evidence" used to determine safety. Generally, intended proteins within these events are assessed for homologies to allergens and toxins that might suggest the potential for these proteins to cross-react allergenically or to induce toxicity. Additionally, various "frames" (i.e., either start-codon to stop-codon or stop-codon to stop-codon) are translated *in silico* and also are assessed for potential allergenicity or toxicity. The presentation includes a discussion of the dubious value of current bioinformatic methods to assess for allergenicity and means for improvement. Beyond these safety concerns, the flanking regions at either end of the insertion site are compared to the genomic assemblies of the host crop to determine the insertion location within the host genome. The talk concludes with a high-level discussion of the internal screening tool developed by DuPont Pioneer to screen possible products early in the product pipeline.