

James C. Costello

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Education

Ph.D. Informatics, Indiana University, 2005-present
M.S. Bioinformatics, Indiana University, 2004
B.S. Biology, University of Iowa, 2002 B.S. Economics, University of Iowa, 2002

Professional Experience

Research Associate 12/06–present
Justen Andrews and Mehmet Dalkilic Indiana University
Design, develop, and implement integration methods to connect disparate sources of *Drosophila* data to better inform researchers of functional relationships between genes. This work is being funded by a grant from the Indiana University MetaCyt Initiative.

Assistant Staff Scientist 6/04–12/06
The Center for Genomics and Bioinformatics (CGB) Indiana University
Specifically worked under the *Drosophila* Genomics Resources Center (DGRC) grant in the microarray fabrication and research group. I was directly involved in production level microarray fabrication from running PCR to printing with the OmniGrid 300 to data analysis. I helped develop new software to pipeline microarray data analysis and also assisted with customer support.

Associate Instructor 8/03–6/04
School of Informatics Indiana University
Taught lab sections of both graduate (Bioinformatics I) and undergraduate classes (Introduction to Informatics). I lead a group of four Associate Instructors to organize, design, and grade lab assignments, homework, and exams for a class of 187 students. I directly interacted with students to assist them in learning Informatics related concepts and applications.

Student Technology Centers Consultant 1/03–6/04
University Information Technology Services Indiana University
Provided direct support to customers in the Indiana University Technology Centers. I was required to help and educate customers on troubleshooting issues related to software, hardware, and University related systems. I was selected as the “Consultant of the Month” for 9/03.

Software Engineer 1/03–6/04
Mehmet Dalkilic Indiana University
Helped develop a Java-based application for protein sequence curation and analysis (CATPA - <http://www.catpa.org>). I worked with a small group of programmers and biologists to design and implement functions for protein sequence analysis.

Publications

Refereed

- **James C. Costello**, Daniel Schrider, Jeff R. Gehlhausen, and Mehmet M. Dalkilic. “Data-Driven Ontologies.” *The Pacific Symposium on Biocomputing* (Submitted).
- **James C. Costello**, Mehmet M. Dalkilic, Scott M. Beason, Jeff R. Gehlhausen, Rupali Patwardhan, Sumit Middha, Brian D. Eads, and Justen Andrews. “Gene Networks in *Drosophila melanogaster*:

Integrating Experimental Data to Predict Gene Function.” *PLoS Genetic* (In Review).

- **James C Costello**, Mira V. Han, and Matthew W. Hahn. “Limitations of pseudogenes in identifying gene losses.” *Recomb-CG 2008* (Accepted).
- Teiya Kijimoto, Debra J Rose, **James C Costello**, Zuojian Tang, Armin P Moczek, and Justen R Andrews. “From gene discovery to functional analysis in horned beetles, an emerging model system in evolutionary developmental biology.” *BMC Genomics* (In Review).
- Yong Li, **James C Costello**, Alish K. Holloway, and Matthew W. Hahn. “Reverse ecology and the power of population genomics.” *Evolution* (In Press).
- **James C Costello**, Amy Cash, Mehmet M Dalkilic, and Justen R Andrews. “Data Pushing: a Fly-centric guide to Bioinformatics tools.” *Fly* 2(1):1-18. 2008.
- *Drosophila* 12 Genomes Consortium “Evolution of genes and genomes on the *Drosophila* phylogeny” *Nature*. 450(7167):203-218. 2007.
- **James C Costello**, Jade Buchannan-Carter, Mehmet M Dalkilic, and Justen R Andrews. “Integrating *Drosophila* data to discover disease-related protein interactions in human” *IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology* Honolulu, HI. 2007.
- **James C Costello**, Mehmet M Dalkilic, Rupali Patwardhan, Sumit Middha, Brian Eads, John Colbourne, Junguk Hur, Keval Mehta, and Justen Andrews. “Network Properties of a Gene Network Built from *Drosophila melanogaster* Data” *NetSci*. Bloomington, IN. 2006.
- Mehmet M Dalkilic, Wyatt Clark, **James C Costello**, and Predrag Radivojac. “Using compression to identify classes of inauthentic texts” *In Proceedings SIAM Conference on Data Mining*. Bethesda, MD. 603-607. 2006.
- Mehmet M Dalkilic and **James C Costello**. “BioKnOT: Biological Knowledge through Ontologies and TFIDF” *In Proceedings ACM SIGIR Workshop: Search and Discovery in Bioinformatics*. Sheffield, UK. 2004.
- Mehmet M Dalkilic, **James C Costello**, and Arjrit Sengupta. “Semantic Thumbnails: A novel method for summarizing document collections” *In Proceedings ACM SIGDOC*. Memphis, TN. 2004.
- Kazuhiro Seki, **James C Costello**, Vasanth Singhan, and Javed Mostafa. “TREC 2004 Genomic Track Experiments.” *In Proceedings of TREC 2004; Genomics Track*. 2004.

Invited

- Mehmet M Dalkilic, **James C Costello**, Wyatt Clark, and Predrag Radivojac. “From protein-disease associations to disease informatics” *Frontiers in Bioscience*. 13:3391-3407. 2008.
- Brian Eads, Amy Cash, Kevin Bogart, **James C Costello**, and Justen R Andrews. “Troubleshooting microarray hybridizations” *Methods in Enzymology*. 411:34-49. 2006.

Technical Reports

- Kevin Bogart, **James C Costello**, Brian Eads, Elizabeth Bohuski, and Justen R Andrews. “Amino Alkyl labeling and hybridization protocol” *CGB Technical Report 2006-06*. The Center for Genomics and Bioinformatics, Indiana University, Bloomington, Indiana.
- **James C Costello** and Justen R Andrews. “Re-Annotation of DGRC-1 amplicon microarrays from *Drosophila melanogaster* annotation version 3.1 to version 4.1.” *CGB Technical Report 2006-07*. The Center for Genomics and Bioinformatics, Indiana University, Bloomington, Indiana.
- **James C Costello** and Monica Sentmanat, and Kevin Bogart. “DGRC hybridization troubleshooting guide” *CGB Technical Report 2006-12*. The Center for Genomics and Bioinformatics, Indiana University, Bloomington, Indiana.

Posters

- **James C. Costello**, Jeff R. Gehlhausen, Daniel R. Schrider, and Mehmet M. Dalkilic. “Data-Driven Ontologies: A Tool to Discover Relationships Between Biological Processes from Genomic Data” *ISMB/ISCB Student Conference*. Toronto, Canada. 2008.
- **James C Costello**, Meng Li, and Martin Stone. “Automated identification of protein scaffold structures” *3rd Annual Indiana Bioinformatics Conference*. Indianapolis, IN. 2006.
- **James C Costello**, Mehmet M Dalkilic, Rupali Patwardhan, Sumit Middha, Junguk Hur, Keval Mehta, Amit Saple, John Colbourne, Brian Eads, and Justen R Andrews. “InGeNE: Integrated Gene Network Explorer.” *i-Conference..* University Park, PA. 2005.

Computer Skills

OS - Unix/Linux, Windows, Macintosh

Languages - Perl, Java, C, C++, C#, Javascript, SQL, R

Expert Level - Unix/Linux, Windows, Java, Perl, CGI, PHP, JSP, ASP, MySQL, Oracle, R

Networking, XML, HTML, Web Design, Databases, Server Administration, MPI, CGI, PHP, ASP, JSP, \LaTeX , Statistical Software, Visual Studio

Honors and Awards

IU School of Informatics Outstanding Teaching Award	2003–2004
IU School of Informatics Outstanding Achievement Award	2003–2004
IU GPSO Outstanding Graduate Student	2003–2004
Indiana University (UIITS) Consultant of the Month	9/03
Two-time Track and Field Athletics All-American	2002
Big Ten Conference Track and Field Hammer Champion	2002
Two-time Big Ten Conference Athlete of the Week	2001, 2002
Dean’s List	8/99–6/02
Academic All-Big Ten Conference Selection	8/99–6/02
Conference USA Commissioner’s Honor Roll	8/98–6/99

Grants

NSF-IGERT Fellow in Evolution, Genomics, and Deveopment for 2008-2009
 Student Travel Grant for CIBCB 2007, IEEE
 Student Travel Grant for SDM 2006, Lawrence Livermore National Laboratory

Professional Experience and Service

Reviewer: ISMB, PSB
 Member: IEEE, ACM

Volunteer Experience

Jim Holland Summer Enrichment Program in Biology	2005, 2007
DGC conference volunteer	2005, 2007
Assistant Track and Field Coach, Indiana University	8/02–6/03
Community Youth Leader, Cedar Rapids, IA	8/00–6/02

Leadership

IU Academic Fairness Committee Member	8/02–present
IU Graduate Curriculum Committee Member	8/02–1/04, 8/05–6/06
Undergraduate Capstone Group Leader	2004
Lead Associate Instructor	8/03–6/04
Graduate Informatics Student Association Vice President	1/03–1/04
University of Iowa Track and Field Captain	8/01–6/02