

# Women in Bioinformatics Forum

Ballroom D, Tuesday 12:15PM-1:15PM

ACM-BCB  
2013

Open to **EVERYONE!** Lunch Provided!

## Bioinformatics: Translation Catalyst, Enabler, Hub



## Career Path: Role, Challenge, and Action

### Panelists:



**Clare Bates Congdon, Ph.D.**  
**Debra S Goldberg, Ph.D.**  
**Louisa Raschid, Ph.D.**  
**Wei Wang, Ph.D.**

**Adriana Compagnoni, Ph.D.**  
**Vanja Paunić, Ph.D. Student**  
**Ellen M. Voorhees, Ph.D.**  
**Catie Welsh, Ph.D. Student**

Panel Chair: Dr. May D. Wang

## Prof. Clare Bates Congdon, PhD



**Title:** Associate Professor  
Dept. of Computer Science  
University of Southern Maine

**Email:** [congdon@usm.maine.edu](mailto:congdon@usm.maine.edu)

**Web:** <http://cs.usm.maine.edu/~congdon/>

**Steering Committee,** IEEE/ACM Transactions on Computational  
Biology and Bioinformatics

**Associate Editor,** IEEE Transactions on Evolutionary Computation

### Research Interests:

- Inference of candidate regulatory elements (DNA motif inference)
- Gene-environment interactions
- Phylogenetics
- Approaches: Data mining, agent-based models, evolutionary computation, complex adaptive systems

### Funding:

- NIH COBRE (Quantitative Biology, PI: Dr. Jason Moore, Dartmouth)
- NSF CAREER

# Prof. Adriana Compagnoni, PhD



Title: Associate Professor

Affiliation: Department of Computer Science, Stevens Institute of Technology

Contact: [adriana.compagnoni@stevens.edu](mailto:adriana.compagnoni@stevens.edu)

Weblink: [www.cs.stevens.edu/~](http://www.cs.stevens.edu/~)

## • Research Interests :

- Modeling Languages for Stochastic Simulation and Prediction of Complex Biological Systems.
- Biomedical and Health Informatics for Personalized Health
  - JAK-STAT Signal Transduction Modeling
  - Generation of Synthetic Data
  - Health Data Analytics (NICU)
- Intracellular Viral Traffic
- Bacteria-Materials interactions – Antibacterial Surfaces

# Prof. Debra S Goldberg, PhD



• Title: Assistant Professor

• Affiliation: Department of Computer Science, Department of Applied Mathematics, BioFrontiers Institute, University of Colorado Boulder; Computational Bioscience Program, University of Colorado Denver

• Contact: [debra@colorado.edu](mailto:debra@colorado.edu)

• Weblink: <http://www.cs.colorado.edu/~debra/>

## • Research Interests :

- Computational Molecular Biology
  - Gene and protein network analysis
  - Predictive topological measures
  - Evolutionary models of protein interaction networks
- Complex Network Analysis
  - Ecological Networks
  - Linguistic Networks
- Computer Science Education



## Vanja Paunić, PhD Student

- Title: PhD Candidate, Associate Bioinformatics Scientist
- Affiliation: Dept. of CS, University of Minnesota, National Marrow Donor Program
- Contact: [vpaunic@cs.umn.edu](mailto:vpaunic@cs.umn.edu)
- Weblink: <http://www-users.cs.umn.edu/~vpaunic/>

- **Research Interests :**

- Prediction of HLA genes from SNP data
- Resolving ambiguity in HLA typing
- Genetic ancestry
- Pattern mining in biomedical data
  - Disease associations
  - Genetic interactions

## Professor Louiqa Raschid, Ph.D.



- Title: Professor
- Affiliation: Smith School of Business, Institute for Advanced Computer Studies, Department of Computer Science  
University of Maryland
- Contact: [louiqa@umiacs.umd.edu](mailto:louiqa@umiacs.umd.edu)
- Weblink: <http://www.umiacs.umd.edu>

- **Research Interests :**

- Biomedical and Health Informatics.
  - Graph data mining in annotated datasets.
  - Pattern discovery using annotations and literature (sentence) imprint.
  - Graph summarization and structure learning.
  - Annotation quality improvement using the expertise of the experts.
- Data science for macro-modeling in finance.
- Social media modeling, prediction and recommendation.

# Ellen M. Voorhees, PhD



- Title: Computer Scientist
- Affiliation: National Institute of Standards and Technology (NIST)
- Contact: [ellen.voorhees@nist.gov](mailto:ellen.voorhees@nist.gov)
- Weblink: [trec.nist.gov](http://trec.nist.gov) (TREC web site)

- Research Interests :

- Information Retrieval
  - specifically, evaluation methodologies and infrastructural support for research
- Natural Language Processing
- Automatic analysis of clinical text

# Prof. May D Wang, PhD



- Title: Associate Professor, Georgia Cancer Coalition Distinguished Cancer Scholar
- Affiliation: Departments of Biomedical Engineering, Biomedical Informatics, Winship Cancer Institute, Institute for Bioengineering and Bioscience, Institute for People and Technology  
Georgia Institute of Technology and Emory University
- Contact: [maywang@bme.gatech.edu](mailto:maywang@bme.gatech.edu)
- Web: [www.bme.gatech.edu/facultystaff/faculty\\_record.php?id=41](http://www.bme.gatech.edu/facultystaff/faculty_record.php?id=41)
- Steering Committee Member: ACM/IEEE TCBB

- Research Interests :

- Biomedical and Health Informatics for Personalized Health
  - Bioinformatics Algorithm Development for Next Generation Sequencing, Proteomics, Lipidomics, and Metabolomics Data Analysis
  - Imaging Informatics for Next Generation Pathology
  - Health Data Analytics for Chronic and Acute Condition Monitoring
- Dynamic Systems Modeling for Prediction
- Biomedical Image Analysis for Clinical Decision Support System

# Prof. Wei Wang, PhD



- Title: Professor
- Affiliation: Department of Computer Science, University of California, Los Angeles
- Contact: [weiwang@cs.ucla.edu](mailto:weiwang@cs.ucla.edu)
- Weblink: [www.cs.ucla.edu/~weiwang](http://www.cs.ucla.edu/~weiwang)

- Research Interests :

- Big data analytics
- Scalable methods for genotype-phenotype association study
- Network analysis
- Computational structural biology
- High throughput sequence analysis

# Catie Welsh, PhD Student



- PhD Student, UNC-Chapel Hill
- Instructor, Rhodes College
- Contact: [welshc@rhodes.edu](mailto:welshc@rhodes.edu)
- Weblink: <http://cs.rhodes.edu/~welshc/>

- Research Interests :

- Bioinformatics & Computational Genetics
  - Analyzing underlying genomic structure of genetic reference populations
  - Maximally informative genotyping array design
  - High-Throughput Sequencing Data Analysis

# Women in Bioinformatics Blog



## Funding Opportunities

### Scholarships and Fellowships

#### ACM-W Scholarships for Attendance at Research Conferences

- About: <http://women.acm.org/participate/scholarship/index.cfm>
- Application deadline: varies by travel dates
- For: both graduate and undergraduate students

#### National Science Foundation Graduate Research Fellowship

- About: <http://www.nsfgrfp.org/>
- Application deadline: to be announced for 2013 submissions
- For: graduate studies, but senior undergraduates can also apply

#### The Google Anita Born Memorial Scholarship

- About: <http://www.google.com/anitaborn/>
- Application deadline: February 28, 2013
- For: both graduate and undergraduate students

#### Grace Hopper Celebration Scholarships

- About: <http://gracehopper.org/2013/participate/ghc-scholarships/>
- Application deadline: in spring, exact dates to be announced
- For: both graduate and undergraduate students

#### PEO Philanthropic Awards

- About: <http://www.peointernational.org/peo-projects/philanthropies>
- Application deadline: varies by award; contact local PEO chapter for details
- For: both graduate and undergraduate students

## Grants

#### NSF ADVANCE Program: Increase the Participation and Advancement of Women in Science and Engineering Careers

- About: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pid=5383](http://www.nsf.gov/funding/pgm_summ.jsp?pid=5383)



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## Popular Posts



## Conferences and Events

### Upcoming Scientific Conferences and Symposiums

#### ACM Bioinformatics and Computational Biology (BCB)

- Date: September 22-25, 2013
- Venue: Washington D. C., USA
- Link: <http://www.cse.buffalo.edu/ACM-BCB2013/>
- Submission deadline: ~~April 23-2013~~ May 15, 2013 US
- Register: <http://www.cse.buffalo.edu/ACM-BCB2013reg>

#### IEEE Bioinformatics and Biomedicine (BIBM)

- Date: December 18-21, 2013
- Venue: Shanghai, China
- Link: <http://bibi2013.tongji.edu.cn/cvical%20for%20paper>
- Submission deadline: ~~August 16, 2013~~ October 04, 2013

#### IEEE Bioinformatics and Bioengineering (BIBE)

- Date: November 11-13, 2013
- Venue: Chania, Greece
- Link: <http://bibi2013.tongji.edu.cn/cvical%20for%20paper>
- Submission deadline: ~~July 4, 2013~~ July 30, 2013 (Sub)
- Register: <http://medlab.cs.uoi.gr/bibe2013/index.php>

#### Pacific Symposium on Biocomputing (PSB)

- Date: January 3-7, 2014
- Venue: Big Island of Hawaii, USA
- Link: <http://psb.stanford.edu/welcome.html>
- Submission deadline: July 31, 2013 (Submission Close)
- Register: <http://psb.stanford.edu/registration.html>

#### IEEE Symposium on Computational Intelligence in Bioinformatics (CBIB)

- Date: May 21-24, 2014 Venue: Honolulu, Hawaii, USA
- Link: <http://cbib.org/>
- Submission deadline: November 15, 2013

#### World Congress in Computer Science, Computer Engineering (WORLDCCOMP)

- Past Venue: Las Vegas, USA
- Link: <http://www.world-academy-of-science.org/worldccomp>

#### International Congress on Image and Signal Processing Conference on BioMedical Engineering and Informatics

- Date: December 10-10, 2013
- Venue: Hangzhou, China
- Link: <http://icispbme2013.tnu.edu.cn/index.php>
- Submission deadline: September 30, 2013



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## Popular Posts



Thursday, April 4, 2013

## Feature Publication

The feature publication this week is

**Historical image classification using biologically interpretable shape-based features**  
Sonal Kothari, John H Phan, Andrew N Young and May D Wang

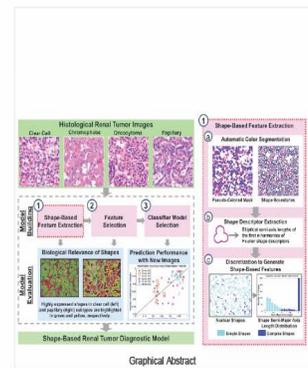
Sonal is a PhD candidate at the Georgia Institute of Technology and is currently a graduate researcher in the Biomedical Informatics and Bio-Imaging Laboratory.

The paper discusses biologically interpretable shape-based features for automatic histological image classification.

### Notably:

- Automatic color segmentation with color normalization, to overcome color variations in tissue samples
- Shape-based features using Fourier shape descriptors
- The case examined renal tumor histological subtype (4 subtypes) classification. It was found that:
  - Shape-based features complement or outperform other traditional features
  - Emerging patterns are easily interpretable

To read the full publication go to <http://www.biomedcentral.com/1471-2324/13/616abstract>



## Topics for WiB – Education & Research

- 1) What are the strengths and weaknesses of the current bioinformatics courses and how can they be improved?
- 2) What do you think are the growing areas of research in bioinformatics?
- 3) What are the benefits of finding a mentor and how do I form that relationship?
- 4) How to stay motivated and excited about your research in grad school?
- 5) What are some challenges women are facing in bioinformatics? How can we convince more women to enter bioinformatics?
- 6) How does working with professionals in other fields changes your research overview?
- 7) What are the benefits of working with natural scientists and engineers?
- 8) What do you think about open vs. closed source research? Additionally, open vs. closed validation and data sharing?

# Topics for WiB – Career & Family

- 1) What are the essential skills students should acquire if they want to pursue research in bioinformatics?
- 2) What particular skills do faculty look for in hiring PhD students or Post-Doc?
- 3) How to build relevant professional connections while in grad school?
- 4) Does industry require a different set of skills for bioinformatics in comparing to academia?
- 5) What are the pros and cons of working in academia versus in industry?
- 6) What are the types of industry jobs that someone in bioinformatics would be qualified for?
- 7) How to balance career versus family?
- 8) What are your tips for solving the two-body problem when applying for jobs upon graduation?

## Women in Bioinformatics Panelists



Clare Bates Congdon  
Assoc. Prof.  
U. of Southern Maine



Adriana Compagnoni  
Assoc. Prof  
Stevens Institute of  
Technology



Debra S Goldberg  
Assist. Prof.  
U. of Colorado Boulder



Vanja Paunić  
Ph.D. Student  
U. Of Minnesota



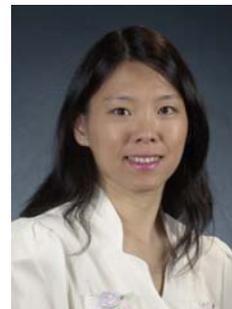
Louiqa Raschid  
Prof.  
U. Of Maryland



Ellen M. Voorhees  
Nat. Institute of  
Standards and Technology



Catie Welsh,  
Ph.D. Student  
UNC-Chapel Hill



Wei Wang  
Prof.  
U. of Cal. Los Angeles