

INSTRUCTIONS FOR COMPLETION OF THE COMPUTERIZED FORM FOR APPLICATION TO THE UAMS GRADUATE FACULTY

1. Please read the form carefully and answer all questions. The form begins on the next page.
2. The form has been designed with fields for your responses, and these are indicated in blue and gray shading. Use the “tab” key to move between fields. The form will automatically expand to accommodate your entries. **IF YOU NEED HELP IN ANY OF THE FIELDS, PRESS THE F1 KEY AND A HELP WINDOW WILL OPEN.**
3. When you have completed the form, save it as a document on your own disk for future reference.
4. Print the document, and then obtain the appropriate signatures before submitting the form to the Graduate Office.

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
GRADUATE FACULTY APPLICATION

1. Name: Melody L. Penning
2. UAMS Graduate Program Sponsor: DBMI Major field: Informatics
3. Present UAMS academic title or administrative position: Assistant Professor
- Date appointed this rank/position: 2/2017 Employed by: UAMS
4. Comments of Department Chair/Head or Program Director including: evidence of scholarly development, effectiveness as a teacher, quality of publications and reallocation of duties if this application is approved.



Digitally signed by Fred Prior
Date: 2017.05.01 20:04:57
-05'00'

5/1/17

Department Chair/Head or Program Director

Date

Graduate Council Representative

I have read the comments of my Department Chair/Head or Program Director and I do, do not (circle one) wish to supply additional information in support of my application.

Applicant's Signature

Date

Approvals

Chair, Graduate Faculty Committee

Date

Chair, Graduate Council

Date

Dean of the Graduate School

Date

5. **List your planned involvement in graduate education (courses, theses, dissertations):**

I will be teaching Fundamentals of Managing Research Data and Health Information Systems. I also plan to continue mentoring students focusing on informatics.

6. **Briefly summarize your experience in graduate-level classroom teaching:**

My classroom teaching experience is limited to giving visiting lectures and assisting students with lab projects in Information Quality classes.

7. **Briefly summarize your experience in research and student research mentoring:**

Before joining UAMS my research has been focused on Information Quality (IQ) in academic, industry and government studies. In my PhD program my research focused on how to apply inferred precision techniques developed for information retrieval to the domain of entity resolution. In my dissertation "Inferred Error Rates for Entity Resolution" I demonstrated that statistical inference with samples from entity resolution result sets can be effectively used to estimate precision. Currently I am working in the areas of Medical Decision Making (MDM), Clinical Decision Support (CDS), and Research Reproducibility as well as with IQ. Along with my own research I have mentored multiple students with their Masters level research and recently provided assistance to a PhD level researcher.

8. **Attach Curriculum Vita** showing educational background (including institutions attended, degrees awarded and dates), honors or awards received, scholarly or professional organization affiliations, teaching experience (give school, dates and advanced and graduate subjects taught), including student theses and/or dissertations supervised. Cite publications and research in progress.

MELODY PENNING

PO Box 7694, Little Rock AR 72217
 501.626.9322
melodypenning@gmail.edu
www.linkedin.com/in/melodypenning/

EDUCATION

University of Arkansas at Little Rock
Ph.D. **2016**
 Dissertation: "Inferred Error Rates for Entity Resolution"
 Doctoral Adviser: Dr. John R. Talburt, Professor of Information Science & Axiom Chair of Information Quality

University of Arkansas at Little Rock
G.C., Applied Statistics **2013**

University of Arkansas at Little Rock
M.S., Information Quality **2012**
 Thesis: "Advancing Information Quality"

University of the State of New York
B.S., General Studies, Science **1993**
 Area of Concentration: Applied Engineering
 Minor: Mathematics

AWARDS AND HONORS

Outstanding Academic Achievement **2015 – 2016**
 International Association of Information and Data Quality Chapter President **2012 – 2013**
 Best MSIQ Project and Outstanding Academic Achievement **2011 – 2012**

CERTIFICATIONS

OpenClinica Super User – Version 3.12
 OpenClinica **2017 – Present**

Clarity Data Model - Resolute Professional Billing Certification - Epic 2015
 Epic **2016 – Present**

Clarity Data Model - Resolute Hospital Billing Certification - Epic 2015
 Epic **2016 – Present**

ISO 8000-110:2009 Data Quality Standards for Master Data, L1
 Institute for Certification and Training of Information Professionals **2012 – Present**

RESEARCH EXPERIENCE

Length of Stay Predictors **2016**
 A study to determine which variables are most closely related to LOS in collaboration with a Six Sigma SME
 The strength of the relationship of each of these variables with LOS

Analysis of Financial Data Providers **2015**
 Experimental study of the data accuracy of credit reporting agencies
 Analysis of the quality of data products produced and provided for profit by data vendors

Predictive Modeling of Credit Data **2015**
 Ongoing study of predictive personal and financial characteristics
 Relating these characteristics to choices in product purchases and loan performance
 Comparing the performance of models used by competing banks in these marketing campaigns

Entity Resolution in Hadoop	2015
Ongoing research in Hadoop designs for Entity Resolution	
Creating Linux virtual environments suitable for Entity Resolution	
Testing large scale resolution using Hadoop on Amazon Web Services	
Identifying Fit: Variables that Predict Best Outcomes in Online Teaching	2014
Longitudinal study to provide continuing information on general learning success factors	
Using the Practice Based Evidence research technique to discover key features in learning success	
Working in collaboration with a multi-disciplinary team as a statistical and data expert	
Generating Synthetic Data for Data Matching Systems Testing and Error Propagation Study	2014
Provided requirements and system design of synthetic data generator software	
Assisted and managed graduate students in seed data collection as well as code generation	
Ensemble Methods in Statistics to Identify Features for Data Integration	2013
Developed strategy for isolating features relevant in data integration	
Generated code in R, SAS and SQL for performing data extraction and statistical processing	
Validated results and established statistical significance	
Chancellor's Quality Initiative	2013
Worked with a multi-disciplinary group to discover measurable variables for student outcomes	
UALR Data Integrity Project	2012
Ran Entity Resolution on university data for monitoring and improvement	
Collected resolution and quality errors in an error tracking database	
Provided result to university staff for error correction	
Entity Resolution and Information Quality team member	2011
Ongoing research in Entity Resolution	
Provide input into Entity Resolution requirements	
Worked on metadata capture for tracking data provenance	
Instrumental in adding a trace tracking feature to Entity Resolution software	

PROFESSIONAL EXPERIENCE

University of Arkansas for Medical Sciences, Little Rock, AR

Assistant Professor, UAMS College of Medicine Biomedical Informatics

February 2017 – Present

Translational Bioinformatic Research

Teaching

Student mentoring and support

Skills:

Research tools: OpenClinica

Data base tools: Epic Clarity, McKesson HPM, SQL in MSSQL, SSIS

Analytic / Visualization Tools: R, Tableau

University of Arkansas for Medical Sciences, Little Rock, AR

Clinical Informaticist

2015 – 2017

Adjunct Assistant Professor, UAMS College of Medicine Biomedical Informatics

2016 – 2017

Analytic and Statistical project design

Revenue Cycle Support

Research support

Clinical Descriptive and Predictive Analytics

Entity Resolution

Reporting and visualization

Student mentoring and support

Skills:

Statistical tools: R, SAS

Data base tools: Epic Clarity, McKesson HPM, SQL in MSSQL, SSIS

BI Visualization Tools: Tableau, BO, R, Crystal Reports

Project Lead

Black Oak Partners, Little Rock, AR

Data Scientist

2013 – 2015

Provide design and support for parallel environments

Statistical modeling

Data quality analysis and tracking

Entity Resolution

Reporting and visualization

Student mentoring and support

Skills:

Statistical tools: R, SAS

Data base tools: SQL in MSSQL, MySQL, SAS, R, Hive

BI Visualization Tools: Tableau, R

Team Lead / Project Management

University of Arkansas at Little Rock, AR

Business Intelligence Reporting Manager

2011 – 2013

Provided pre-built and on-demand reports

Campus Data Integrity team member

Descriptive Statistics

Student mentoring and support

Skills:

Data base tools: SQL in Oracle

BI Visualization Tools: Tableau, E-Visions

Team Lead / Project Management

API, Little Rock, AR

Financial Data Management

2003 – 2011

Financial data collection and reporting for business planning, payroll and tax tracking

State of Arkansas - Highway and Information Systems, Little Rock, AR

Lead Analyst

1997 – 2003

Provided statistical reports for state and federal government agencies

Supervised software design project teams

Planned and conducted software training for co-workers

SQL and Access database design and maintenance

Skills:

Data base tools: SQL in MSSQL

Team Lead / Project Management

PUBLICATIONS AND PAPERS

"Using Machine Learning to Automate Data Integration"

Speaker at the Information and Data Quality Conference, Little Rock, Arkansas

<http://iaidq.org/iaidq2013/program-abstracts.shtml#tuesday-1350-3>

2013

"Data and Information Quality: Are We Advancing Fast Enough"

Webinar presented with a panel for the International Association for Information and Data Quality

<http://iaidq.org/webinars/2012-11-08.shtml>

2012

"Information Quality Assessment and Improvement"

Paper presented at the International Conference of Information and Knowledge Engineering in Las Vegas, Nevada

2012

MEMBERSHIPS

American Statistical Association

International Association of Information and Data Quality

