

**Joanne Sylvia Luciano, Ph.D.**

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**EDUCATION**

Ph.D. 1996 Cognitive and Neural Systems, Boston University, Boston, MA  
M.S. 1987 Computer Science, Boston University, Boston, MA  
B.S. 1982 Computer Science, *cum laude*, Boston University, Boston, MA

**PATENTS**

1. *Automated Treatment Selection Method*, US Patent Number 6,063,028. Issued 5/16/00
2. *Method for Predicting the Therapeutic Outcome of a Treatment*, US Patent Number 6,317,731. Issued 11/13/01.

**DOCTORAL DISSERTATION**

**Luciano Jr, J. S.** (1996). *Neural network modeling of unipolar depression: Patterns of recovery and prediction of outcome*. (Doctoral dissertation, ProQuest Information & Learning).

**BOOKS**

**Luciano, JS**, Cumming, GP, Kahana, E, Wilkinson, MD, Brooks, EH, Jarman, H, McGuinness, DL, Levine, MS. **Health Web Science**. Now Publishers Inc. *Foundations and Trends in Web Science*. Hanover, MA, USA. (2014).

**ACADEMIC AND ACADEMIC RESEARCH EXPERIENCE**

**Distinguished Professor of Data Science, 2018-2021**

University of the Virgin Islands, College of Science and Mathematics.

Designed and led the establishment of a cutting-edge undergraduate data science program. UVI offers a Minor (Fall 2020) and Certificate (Fall 2021) in Data Science and two innovative data science courses. These courses attract students from across the university and increase STEM education. The certificate, created with Virgin Islands stakeholders, targets the Virgin Islands residents and government employees. The mission: increase capacity within the Virgin Islands to capture, manage, analyze, data for decision making, and, as evidence in funding applications. The data science courses are cross listed to enable students across the university to access an introductory data science course. The introductory course, Data Science I, covers several core topics for data science literacy: ethics, governance, privacy, policy, access, FAIR data standards, basic statistics, mathematics, and python programming.

Assisted the Virgin Islands Established Program to Stimulate Competitive Research (VI-EPSCoR) program in exploring data science related projects; and provided seminars on data science for general and specialty audiences and served as Data Science Advisor to the UVI Hazard Mitigation and Resilience Plan for the territory with responsibility for the health sector assessment and recommendations for increased resilience.

Initiated activities in aviation. Aviation is important for the territory's resilience, the aviation industry's need for aircraft pilots, and career paths for Virgin Islanders. \$500,000 (pending) FAA proposal to train pilots, including a full-motion simulator for the VI. Encouraged and advised students to create UVI FLY, an aviation club at UVI led by students. Awarded \$5,000 in seed funding from the JetBlue Foundation. Provided 6 students the opportunity to obtain college credit for aviation studies and a FAA Student Certificate.

Initiated and led an effort to secure funding for a diabetes registry and repository for the territory. Won an Amazon Imagine Health Equities Initiative award for \$87,000 in Amazon Web Service Credits and secured a software company to complete a proof of concept for a registry App and initial implementation of the diabetes repository in collaboration with the VI Department of Health using data from the VIDOH Clinics.

**Visiting Associate Professor, 2016-2018**

Indiana University, School of Informatics, Computing, and Engineering. Data Science Program. The Data Science Program offers a rare combination of programs—including informatics, computer science, library science, information science, and intelligent systems engineering, making it one of the largest, broadest, and most accomplished of its kind. I developed the curriculum for graduate courses in data science (see teaching section) and continued my research in health web science and precision medicine. Courses taught: Data Science for Drug Discovery, Health and Translational Medicine (SP17, FA17); Applied Data Science (SU17, FA17, SP18), Real World Data Science (SP17, SP18).

**Visiting Research Scholar, 2014-2015**

Rensselaer Polytechnic Institute, Center for Cognition, Communication & Culture. Initiated a multidepartment collaboration to integrate state-of-the-art technologies to deliver a personalized response to depression, a major health burden. The focus of this project aimed to support the subpopulation of incoming students who suffer from depression. Through an unprecedented innovative multi-disciplinary approach, multimodal sensors adjust lighting and provide support through personalized agents to support students and reduce the negative side effects of medications.

**Visiting Semantic Scientist, 2014**

General Electric Global Research Center, Niskayuna, New York

Visiting Semantic Scientist, Knowledge Discovery Lab. KDL harnesses the power of Semantic and Big Data technologies to capture knowledge and deliver scalable solutions. In addition to being on site as a resource for the lab, my contributions included the development of KDL's external business strategy, a semantic approach to engineering data management modeling that facilitate the design of new turbine engines for Aviation, Power and Water, a semantic model for the integration of heterogeneous data for GE Healthcare, and semantic support for risk reporting for GE Capital.

**Visiting Research Associate, 2013-2014**

University of California, Irvine, Department of Electrical Engineering and Computer Science

Project: Semantic Computing (SC) is an emerging field that addresses technologies that allow users to search, create, and manipulate computational resources (data, documents, tools, devices, etc.) based on semantics ("meaning", "intention"). The Institute for Semantic Computing (ISC) is a National Science Foundation (NSF) I/UCRC (Industry University Collaborative Research Center) whose mission is to foster new technologies that may facilitate semantic, automatic problem solving and therefore new business models to stimulate, strengthen and grow the economy. The I/UCRC is initially established among three closely collaborating Southern California institutions (UCI, UCLA and UCSD). As it evolves, the Center would expand to include other institutions. My initial role as a participating faculty member is to help build the global Semantic Problem Solving Network (SPSN) into a geographically distributed resource that can be easily connected to solve problems based on semantics. The SPSN is open to the public.

**Dozor Visiting Scholar, 2013**

Faculty of Health Sciences, Ben Gurion University of the Negev, Be'er Sheva, Israel

Course: "Semantic eHealth: Getting More Out of Biomedical Data Using Semantic Technology," December 22-25, 2013. The course introduces the new field of data science, with an emphasis on its relationship to biomedical research. It introduces a set of advanced tools that can be used to integrate biomedical data to answer clinical questions and provides knowledge of the standards and best practices that enable integration across the web and data mining at web scale.

**Research Associate Professor and Deputy Director, Web Science Research Center, 2010-2013**  
Rensselaer Polytechnic Institute, Tetherless World Constellation, Troy, NY.

The WSRC is a founding lab within the Web Science Trust Network (WSTNet). Collectively, the WSTNet labs provide the only global resource for the field of Web Science. My responsibilities included being the point of contact for our lab, overseeing our website, and outreach and research activities that included representation and presentation of the lab's research at international WSTNet and Web Science meetings.

The Tetherless World Constellation (TWC) at Rensselaer Polytechnic Institute (RPI) is a constellation of multidisciplinary researchers who study the scientific and engineering principles that underlie the Web, to enhance the Web's reach beyond the desktop and laptop computer, and develops new technologies and languages that expand the capabilities of the Web under three themes: Future Web, Xinformatics, and Semantic Foundations. I taught graduate courses, advised students, led research projects, and participated in department and institute programs.

Research Interests: Health Web Science is a sub-discipline of Web Science that studies current and potential uses of the web in relation to health. I led the first three international workshops on Health Web Science, published journal articles, and led an international multidisciplinary collaboration to write a foundational monograph on Health Web Science, establishing it as a field of study. Current interests include how to construct a Web Observatory to enable the study of major depression from a Health Web Science perspective and how to use the study of depression to facilitate the creation of useful Web Observatories.

**Core Group Member and BioPathways Consortium Liaison, 2002-2011**

BioPAX/Memorial Sloan-Kettering Cancer Center, New York, NY

BioPAX is a global standard for the exchange of life science metadata, chiefly data about biological processes, aka *biopathways*. Lead role in the creation, advancement, and adoption of this community-based ontology development initiative. Identified sources of funding and adoption of BioPAX by technical presentations, outreach, fund raising, and related administrative activities.

- Acquired initial and subsequently doubled Department of Energy funding (total \$120,000).
- Selected Protégé as the critical tool for on-time delivery the initial release.
- Assembled a worldwide network of stakeholders and contributors to this emerging standard.

**Multidisciplinary Systems Engineering Lead, Bio-Ontology Expert, 2007-2009**

The MITRE Corporation, Bedford, MA

- Lead development of FLU, an influenza ontology development collaboration with BioHealthBase and Gemina to support US Influenza research, surveillance, and monitoring.
- *Principal Investigator* Founded an Ontology Evaluation research program that led to the Generalized Ontology Evaluation Framework (GOEF) approach and support from NIST.

**Lecturer in Genetics, 2005-2009**

Harvard Medical School/Massachusetts General Hospital, Boston, MA

Principal Investigator, EMPWR project, NSF-funded ontology based biopathway research.

**Visiting Scholar, 2005-2008**

University of Manchester, School of Computer Science, Manchester, UK

PI: EMPWR NSF Funded Project (<http://empwr.org>)

**Computer Science Instructor, 2005**  
Boston University, Metropolitan College

**Fellowships, 1996-2005**

Harvard Medical School and Massachusetts General Hospital

- Research in Outcome Prediction, Modeling Depression Recovery and Pharmacogenomics
- Research Fellow – Psychiatry Department Joint Appointment  
Neural Systems Group, 1996-1999  
Depression Research Program, 1999-2005  
Faculty, Institute of Cybermedicine, 2000-2002

**Director of Business Development, 2001-2002**

Molecular Mining Corporation, Boston, MA

Directed business initiatives for life science data mining company.

- Initiated and supported collaborations with pharmaceutical and biotechnology industry and academic clientele.
- Spearheaded company drive for involvement in high-throughput analysis and pharma-biotech integration projects while expanding client offerings. Developed broad strategic concept for pharmaceutical partners.

**Senior Scientist, BioPathways, 2000-2001**

3<sup>rd</sup> Millennium, Incorporated, Boston, MA

Senior Scientist on NIST grant to develop next generation integrated information infrastructure for pharmaceutical and biotech research.

- Expertly developed demo of hypothesis-driven visualization system using Huntington's disease as model.
- Effectively researched and captured information for display of disease mechanisms and manifestations that served as research planning tool for biopathways.

**INDUSTRY AND GOVERNMENT EXPERIENCE**

**Consultant, 1988-present** project-based consulting freelance work for hire.

Predictive Medicine, Inc. (formerly Orchard St. Software)

Provide advanced technology, intellectual property, and business solutions with prominence in semantic web methodology, data science, and analytics. Manage up to six personnel or subcontracts in completing projects for selected clients:

- ***IO-Informatics*** –*Consultant Data Scientist/Biostatistician*. Matched Treated and Control patient groups from total N = 388 (194 Treated Patients compared to 194 Untreated patients) using Coarsened Exact Matching technique for Parkinson's Institute and Clinical Center (PICC). This effort supports PICC's mission to deliver personalized and precision treatments and cures for individuals afflicted with neurodegenerative disease. (2017)
- ***Deep Blue Communications, Inc.*** –*Consultant Data Scientist*. Created and presented visualizations of data for client reports. The visualizations contained interactive graphics to analyze the details about usage and system performance by locations for DBC's client. (2016)
- ***Elsevier Science*** –*Consultant Data Scientist*. Elsevier a world-leading provider of scientific, technical, and medical information products. *Sherpath™* is the first nursing educational platform to integrate content, assessment, and simulations, personalized to each program, course, and student. My contributions included analytics of the pilot data, a white paper on the hybrid recommender system, analysis of the initial data model, and an analysis and recommendations for enhancements to the recommender, analytics, and personalization engines that would maximize student performance outcomes. (2014-2015)
- ***Emergent Network Defense Security, Inc.*** – *Consultant* END Security is a cyber security startup. My primary role was to identify and or develop algorithms for different aspects of

the ANTS system. I created and ran simulations of the ANTS theory using the NetLogo platform to analyze network behavior and emergent properties. In addition, where necessary, I educated the team on emergent network behavior concepts. I participated in SCRUM and Agile development processes. (2014)

- **DataBotz** – *Health Application Consultant* to HealtBotz a healthcare startup of DataBotz. Subject Matter Expert on Semantics in Health Care, for a project to develop a Diabetes and Readmission Prevention Apps. (2010-2012)
- **Selventa (formerly Genstruct)** – *Patent Infringement Analyst, BioPAX Consultant*
- **Advanced Biological Laboratories SA** – *Intellectual Property Consultant.*
- **Siderean Software, Inc.** – *Life Science Consultant.* Demonstrated the impact of Seamark semantic integration and navigation capabilities on the discovery phase of the drug development pipeline as well as in the business/IP sphere. Published in *J. Web Semantics*. This demonstration was picked up by Sir Tim-Berners-Lee, he used the graphic form the presentation in his presentations for two years to communicate to his audiences the concept and application of linked data. This was the original linked-data diagram using database IDs before databases utilized URIs. [https://www.w3.org/2005/Talks/1110-iswc-tbl/#\(14\)](https://www.w3.org/2005/Talks/1110-iswc-tbl/#(14))
- **Pfizer, Inc.** – *Knowledge Management Consultant.* Assisted and advised Pfizer in the area of biological pathways and ontologies in order to identify the best synergies among biological pathway models, knowledge structures, text mining technologies, kinase science, and Pfizer's drug discovery process to develop the Pfizer Kinase Knowledge Base.
- **Beyond Genomics, Incorporated** – *Knowledge Management Consultant.* Identified synergies between biological pathway models and knowledge structures for scientific and intellectual property goals. Created methodology to facilitate and expedite scientific discovery and identify new areas for Intellectual Property development.
- **Viveca, Incorporated** – *Information Architect consultant.* Designed solutions to streamline Viveca's design process from initial customer contact and webpage content extraction through to final delivery to customer. Examined process details that led to effective technical strategies while decreasing turnaround time and reducing errors.
- **Pharmacia & Upjohn** – Analyzed Medicare claims data for evidence to support new market. Saved the client the substantial cost and risk associated with initiating clinical trials in new therapeutic area.
- **Genome Therapeutics Corporation** – Adapted linkage analysis software for internal use and developed Web-based demonstration version of PathoGenome that allowed viewing on client's system.
- **Eli Lilly & Company** – Biostatistics Consultant and SAS Programmer for long-term Prozac study.
- **Millennium Pharmaceuticals, Incorporated** – Researched and developed computational methods in sequence and disease analysis that included UI and database design, project management, HTML, PERL and OPS5 programming. Enabled superior access to disease information by researchers, and ability to identify secreted proteins of interest that served as most viable drug candidates.

#### **Assistant Director, Bioinformatics, 1999-2000**

Genome Therapeutics Corporation Waltham, MA

- Created vision and standards that drove bioinformatics operation and set up academic research alliance to utilize and develop novel approaches to drug target screening for pathological genetics, functional genomics and pharmacogenomics.
- Established and led 16-person multidisciplinary team that successfully completed GTC's corporate-wide Y2K Readiness Program two months ahead of aggressive schedule.

#### **Research Associate, 1991-1992**

Boston University, Behavioral Pharmacology

#### **President and Owner, 1982-1988**

Luciano and Hillier, Incorporated

- Served consultancy serving Greater Boston's technology and business systems marketplace, by leading strategic testing effort for Metro personal information manager product. Developed automated regression compatibility test for Metro Kernel.

**Software Engineer, 1979-1982**

Gould, Inc., Modicon Division

Initially involved in "Futures," the research and advanced development group. Participated in the designs for MODWAY, MODVIEW, and the P200. Responsible for the design and implementation of several prototypes illustrating the concept of process control systems using a menu driven graphics programming panel (P200) and a touch sensitive screen. Designed and implemented the graphics, menu processor, and all necessary communications and interface software. Wrote the Software Functional and Detailed Design Specifications for the J346 MODBUS Slave Interface implementing a portion of the software. Later completed the detailed software design specification for the MICRO-84 Controller, implementing a portion of that design.

**Staff Consultant, 1979**

TE Corporation, Boston, MA

At this small consulting firm, I was a staff member working with 5 others developing the Nihongo Word Processor for NEC. This word processor was designed to work with Kanji (Japanese) characters. Contributed to the overall design and wrote the paging, software disk buffer management, and page/editor interface software. This was written in Pascal on Motorola and Future Data development systems.

**Systems Programmer, 1978-1979**

WANG Laboratories, Research and Development Department, Lowell, MA

I worked in the sub-group responsible for the word processing software for the Wang Word Processor that runs on the CRT. This included the editing software, the keyboard, screen management routines, system calls, and the user interface. Wrote the auto-hyphenation function, maintained Word Processing software, re-hosted the PL/M cross-compiled Word Processing system to run under the Wang OIS operating system with native Intel compilers, and wrote file conversion routines to allow word processing files to be edited by the OIS text editor and OIS text files to be word processed.

**Computer Operator, 1976-1979**

Smithsonian Astrophysical Observatory, Cambridge, MA

Ran the computing center operations on weekends part-time while in college.

**Computer Operator, Terminal Consultant, Teaching Assistant, 1976-1979**

Boston University, Boston, MA

Worked part-time while in college in the academic computer center as a computer operator, in the computing center terminal room at the help desk, and as a teaching assistant for over a dozen computer science courses.

**TEACHING EXPERIENCE****University of the Virgin Islands, St. Thomas USVI**

- CSC 117 Introduction to Programming in Java Spring 2019 (undergraduate, 13 students)
- **CSC 230 Data Science I Fall 2020, Spring 2021, Summer 2021, Fall 2021 (undergraduate, 9 students, 7 students, 14 students, 18 students)**
- CSC 239 Scientific Computer Applications, Fall 2018 (undergraduate, 14 students)
- **CSC 230 Data Science II (Fall 2021) (undergraduate, 6 students)**
- CSC 465 Special topics in Computer Science – Introduction to the Data Science Workflow Spring 2019 (undergraduate, 11 students) St. Thomas, St. Croix remote by video Fall 2019 (undergraduate, 3 students)
- CSC 495 Directed Independent Research in Comp Sci, Spring 2019 (undergraduate, 1 student)

- CSC X97 Junior and Senior Science Seminar I (CSC 397, CSC 497, respectively)  
Fall 2018 (undergraduate, 16 students) St. Thomas, St. Croix remote by video  
Fall 2019 (undergraduate, 10 students) St. Thomas, St. Croix remote by video
- CSC X98 Junior and Senior Science Seminar II (CSC 398, CSC 498, respectively)  
(undergraduate, 17 students) St. Thomas, St. Croix remote by video

### **Indiana University Bloomington**

- Data Science for Drug Discovery, Health and Translational Medicine, Spring 2017 (graduate, 38 students), Fall 2017 (graduate, 22 students)
- Real World Data Science, Spring 2017 (graduate, 22 students)
- Applied Data Science, Summer 2017 (graduate, 43 students), Fall 2017 (graduate, 71 students)
- Independent Study INFO-I 699 LEC 14075 Graduate student (Zachariah Meador) project to create an inventory repository, assimilate, review and rewrite multiple works into a single paper fit for publication. Subject matter is decades of research focused on major depressive disorder treatment outcome-prediction that is the work of Luciano et al.

### **Ben-Gurion University of the Negev**

- Semantic eHealth: getting more out of biomedical data using Semantic Technology. December 22-25, 2013. Faculty of Health Sciences, 1-credit course. Co-taught with Eitan Rubin. (graduate, 10 students).

### **Rensselaer Polytechnic Institute**

- Semantic eScience, CSCI 4962/6962 (advanced undergraduate/graduate, 9 students), Fall 2010, Co-instructor. Reviewed and updated course content, developed learning outcomes, co-taught lectures, mentored students on projects, graded homework assignments and projects. Instructor evaluation: 4.2/5.
- Advanced Semantic Technologies, CSCI 6965 (graduate, 5 students), Spring 2011, Co-instructor. Reviewed and updated course content, developed learning outcomes, co-taught lectures, mentored students on projects, graded homework assignments and projects.

### **Boston University, Metropolitan College**

- Introduction to Telecommunications, CS535 (graduate, 11 students), Spring 2005. Instructor. This was a required core course for the MS in computer science. I was responsible for all aspects of the course (lectures, grading, office hours, assignments, and projects). A syllabus was provided, with room for additional topics. I added commercial wireless off-the-shelf communication systems.

### **Boston University, College of Arts and Sciences**

- Teaching Assistant for over a dozen computer science courses, 1976-1979.

## **MENTORING**

### **Undergraduate Students**

#### **UVI:**

1. **Ayishih Bellew** – Graduated UVI in 2004 with a BS in Computer Science and served as Research Analyst at the Eastern Caribbean Center for 14 years under the direction of Dr. Frank Mills who has led the Virgin Islands Census Data Center since 1988. In 2019 she earned a master's in data analytics from Georgia Tech. In 2020, I hired Ms. Bellew to assist in the development of the Data Science Program. I brought her into all aspects, gave her a seat at the table and the opportunity to directly voice and contribute to the program and curriculum.

2. **Travis Hamlin** – Travis is a marine sciences major who took the Data Science I course in Fall 2020. Travis became the TA for Data Science I in the three subsequent semesters that I taught the course, became the TA for Data Science II, was the first to earn the new Certificate in Data Science, and was hired immediately after graduation by the University to assist with the redesign and development of the university's data infrastructure.
3. **Christopher Murphy** – Chris is a physics major who took my special topics course introduction to the data science workflow. Chris was interested in pursuing a career in data science and sought my advice on many occasions. In Fall 2020, Chris served as the TA for the new Data Science I course and as President for the Data Science Club. Chris had two offers from large stateside companies for a position as a data scientist that starting upon graduation (May 2021).
4. **Kenique Liburd** – Kenique, a computer science major shared an interest and passion for aviation. Kenique was exposed to aviation through a program for high school students offered by the Organization for Black Aerospace Professionals (OBAP). I learned from him there was interest and a need for aviation opportunities and together we created the aviation club. Funds were secured from Jet Blue and in Spring 2020. I offered an aviation studies course. Kenique continues with his aviation studies after graduating.
5. **Jarod Power** – Jarod is an atypical undergraduate student, at 39 years old and with a full-time job as an application developer at the University of California at San Francisco. Jarod is interested in the intersection of life sciences and computer science, and particularly those using machine or deep learning and artificial intelligence. (2/24/21 – senior seminar presentation)

#### RPI:

1. **Lindsay Poirier**-undergraduate researcher. Lindsay is interested in technologies to promote health science. She was motivated to participate in the SMART App Challenge and took the initiative to organize the effort, scheduling logistics and meeting. She created a mash-up demonstration to explore the impact of physical education and nutrition policies on obesity. She blogged for TWC, her DC internship, and writes a personal blog ([www.lindsayrepository.wordpress.com](http://www.lindsayrepository.wordpress.com)).
2. **David Molik** – Health Web Science. Recent graduate (BS). David did an excellent job assisting me in reviewing proposals for the 2<sup>nd</sup> Health Web Science Workshop, held at Northwestern (Evanston, IL) in June in conjunction with the ACM Web Science Conference. He also assisted with project management, editing and internal co-author revision of the Health Web Science manuscript. I continue to mentor and guide him in his career and research interests. David is a bioinformatics specialist at Cold Spring Harbor Lab and will be going to graduate school for a PhD at Notre Dame fall 2016.
3. **Brendan Ashby**- Following initial meetings regarding research topics, Brian signed up for the Undergraduate Research Program for Spring 2012, and began to become familiar with Semantic Technologies (SADI Framework Tutorial).
4. **Zachary Jablons** – Zachary learned of my depression research in an undergraduate mathematics courses and approached me with interest. He converted and enhanced the simulation software and completed an implementation of the Luciano Model using additional data from Dr. Greg Siegle (University of Pittsburg Medical Center). Zach created visualizations that impressed Greg because they showed him patterns and irregularities in his data he had not seen before.

#### Harvard:

1. **Natasha Schiller**, Natasha was a summer student who worked with me as an executive assistant during the summer of 2005 and assisted with the preparation of the administrative components of an NSF grant proposal that was subsequently funded. As a result of her experience working with me, she changed her major from Art History to Biology. She is currently working towards a master's in public health at Boston University and is a Research Assistant at Clinical Addiction and Research Education Unit, Boston Medical Center.



## Graduate Students

### Indiana University

1. **Jeremy Joseph Yang**, graduate student, Senior Research Scientist, University of New Mexico School of Medicine, Dept. of Internal Medicine, Translational Informatics Division. Concurrently, Jeremy is an Informatics PhD candidate (Cheminformatics Track with Data Science Minor) in the School of Informatics, Computing and Engineering, in the Integrative Data Science Lab (Wild Group) at Indiana University. I serve on Jeremy's Ph.D. research committee (Ph.D. defense 3/7/2022)
2. **Arjun Sathiyarayanan Rao** – graduate student. Research Assistant. I mentored Arjun in data science using Tableau Public and industry job interviewing skills. Arjun served as my research assistant and teaching assistant post-graduation. He provided teaching and tutoring to the students at UVI remotely.
3. **Salon Sharma**, graduate student in Data Science at Indiana University. Mentored.
4. **Khushboo Sah**, graduate student in Data Science, Vice President of the Data Science Club.

### RPI

1. **Amruta Akut** – Research Assistant. I guided Amruta to do initial work on Ontology Evaluation. She built a user-interface and created a PowerPoint presentation of the Generalized Framework for Ontology Evaluation (GOEF). (Spring 2012)
2. **Brendan Ashby** – MS Thesis – topic to be determined. One credit summer 2012, 3 credits Fall 2012. Development of SeeSaw - A semantically enabled visual computational platform for blog sentiment analysis (<http://tw.rpi.edu/web/project/SeeSaw>) with co-PI, Vivien Marx (Nature Publishing). Brendan is currently helping with the porting of Yuezhang's SEMMDD master's thesis and converting the data to RDF. He is a co-author of the CSHALS poster.
3. **Yuezhang (George) Xiao**, MS, Industrial Engineering, Master's thesis advisor (Mark Embrechts, ISE faculty sponsor). Master's thesis: *Semantically Enabled Neural Network Modeling of Major Depressive Disorder*. Conference and journal paper submitted to Semantic Web Applications for Health and Life Science (Nov 2012). I will present the poster
4. **Ping Wang, BS/MS**. Ping was a student in both courses I co-taught with Professor McGuinness and she was a summer research assistant. I co-advised her research on the Semantic Water Quality Portal and guided her through acquisition of environmental data from EPA, and her presentation and write-up of her research with Professor McGuinness.
5. **Peter Ragone, BS/MS**. Peter was my student in the Advanced Semantic Technologies course during his last semester at RPI as a combined BS/MS student. Peter is deeply interested in medicine and was an Emergency Medical Technician for RPI and in the surrounding community. Peter's background included software engineering and molecular biology. He quickly saw the potential impact of semantic technologies and continued to keep contact after graduation, which resulted in his joining the Nightingale collaboration on Major Depressive Disorder. Peter is now in medical school class of 2019 at Lake Erie College of Osteopathic Medicine.

### High School Students

1. **Jill Stone** – Jill worked for me as an administrative assistant at Predictive Medicine, Inc., my consulting practice. She was a high school junior, interested in English. I mentored her in science as part of her on-the-job training. Jill graduated Framingham State College (2007) with a Bachelor of Arts, Corporate Communications and a minor in psychology. She is currently a Team Manager at SunTrust Banks.
2. **Jordana Jacobs** – Jordana came to live with me for her last year of high school. She had been at a therapeutic boarding school recovering and rebuilding her self-esteem that resulted from the traumatizing divorce of her parents. I mentored, tutored, coached, counseled, consoled, and celebrated in many aspects of school, work and life. She took a gap year to complete and prepare for school taking classes and working part-time. She was accepted to Indiana University School of Global and International Studies with a scholarship, Fall 2019.

## GRANTS

### Completed

NIST: GOEF Generalized Framework for Ontology Evaluation Methods and Metrics.

9/1/12-8/31-15. Award No. 60NANB12D201 \$214,002 (\$154,002 cut in 2013 Sequester yrs. 2&3).

Role: PI (subcontract from SUNY Albany Center for Technology in Government). The goal of the project is to advance the state of the art in ontology evaluation methods and metrics by explicitly adding support for evaluation with respect to an application context, develop the infrastructure to support iterative evaluation framework development, and identify areas of further ontology metrics research.

NSF-I-CHOOSE: PI: Theresa Pardo (SUNY Albany, CTG), 7/1/13-3/31/14.

Role: PI of RPI subcontract from SUNY Albany, Center for Technology in Government. NSF INTEROP Program.

Summer, \$19,000.

I led the ontology model and semantic methodology that implemented the prototype proof of concept. Lead a team of three PhD students from SUNY Albany. I guided them on a summer project in which they learned about semantic web development methodology and the technology necessary to implement the proof-of concept into a working prototype at the end of the summer.

NSF-I-CHOOSE: PI: Theresa Pardo (SUNY Albany, CTG), 9/1/12-3/31/13. NSF INTEROP Program.

Role: PI of RPI subcontract from SUNY Albany, Center for Technology in Government, \$12,000

Consulted on the use of ontology semantic methodology. Defined scope of proof-of-concept and research plan to accomplish a working prototype proof-of-concept. I ran a hackathon at RPI as part of the ontology Summit 2013 for which I-Choose was a use case for the NIST funded Generalized Framework for Ontology Evaluation. By having one NSF project serve as a Use Case for a second, we leveraged two independently funded multiple-agency awards to benefit both projects and the greater community through the Ontology Summit. It provided an enhanced learning experience for the students and enabled them to present in a global on-line professional community.

IARPA: Foresight and Understanding from Scientific Exposition (FUSE). Awarded: Phase 1 8/11/11-1/31/13.

Role PI for RPI, subcontract to BAE Systems.

The goal of this project was to identify emerging topics in science and then to explain emergence findings. I was part of the team, taking a senior advisory role, with particular expertise in test and evaluation components of the explanation capability.

NSF Semantic eScience Framework – Facilitating Next Generation Data Intensive Science.

Role: Ontology Evaluation consultant, 7/10-8/12.

The goal of the project was to create a next generation tool suite for supporting eScience. I built upon prior work in an ontology evaluation framework and co-taught a class on semantic eScience with Professor McGuinness.

NSF SGER: EMPWR: Computational Exploration of Molecules in the Context of Biological Pathway Networks [Grant No. 0601931](#)

Role: PI for Harvard Medical School.

Total costs: \$195,038

Getting data into a common framework and format is only part of the solution. Given biology's complexity, this project sought to identify ways to systematically and automatically explore data *in*

*silico*, and demonstrate the utility by allowing researchers in other disciplines to reuse these data, in new ways, to ask new and different questions. *Project Web Site maintained courtesy of the Internet Archive*: <http://web.archive.org/web/20150926044252/http://empwr.org/>

**BioPAX Department of Energy Workshop Grant #DE-FG02-04ER63931**

1<sup>st</sup> round, \$60,000; 2<sup>nd</sup> round, \$80,000.

Roles: Community Liaison, Consultant, developer and co-author.

The BioPAX group's goal was to develop a common exchange format for biological pathways data.

## **HONORS AND AWARDS**

**University of the Virgin Islands – WOW Awards** – “This professor has stood by each of her students in their time of need. When we were stressing about other professors not being fair she showed us different. This young lady has change [sic] my view on life and school. I have never met a professor quite like her.” May 2020

**Indiana University Women in Technology Awards** – “Being a mentor.” Spring 2018.

**Robert Wood Johnson Foundation *Health Policy Fellow Finalist 2014-2015***

**Dozor Visiting Scholar** at the Faculty of Health Sciences, Ben Gurion University of the Negev, Be'er-Sheva, Israel, 12/17-13-12/31/13. This award includes all associated travel expenses and a per diem.

Keynote speaker, Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine, November 11, 2012, “Understanding Recovery as a Mechanism for Individualized Treatment Selection in Major Depressive Disorder: A case study.” The Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine. Workshop of 11th International Semantic Web Conference.

For a New Social Science, Coral Springs Florida. (\$7,500) Dr. Sam Leven, Director, provided initial funding, supplied books, contacted on my behalf, and introduced me to Dr. Jacqueline A. Samson of Harvard's McLean Hospital, Belmont MA. Dr. Samson became my PhD dissertation advisor in clinical research and providing the clinical data that was used and analyzed in my dissertation.

Boston University Medical School, Pharmacology Department Graduate Student Research Assistantship. Trained in electrophysiology under Dr. David Farb and in behavioral pharmacology under Dr. Conan Kornetsky. [1993-1994]

## **PRESENTATIONS**

### **Selected Webinars**

1. [Unlocking the Value in Data. What Government Employees Need to Know about Data](#) UVI's Data Science Program hosted a webinar for government employees who want to know more about data and how it's used across the territory. Participants learned how to increase their agency's understanding by partnering with UVI's new data science program. This webinar increased their value because they learned how data: affects their budget, gets their agency more money, and is used to evaluate success of their agency programs.
2. [UVI HackFest 2020 - Emerging Trends in Data Science, Dr. Joanne Luciano](#) Oct 28, 2020

3. [Triple Helix Conference, Brazil](#) 6/23/2021 [Food Security in the Virgin Islands - Joanne Luciano and Travis Hamlin \(student\)](#)
4. The Emerald Archipelago project at the University of the Virgin Islands (US) studied the feasibility of blockchain technology to create a marketplace for the farming industry of the US Virgin Islands that would drive crop production by aggregation to meet demand. Funding awarded by Morgan State University FinTech Center 2020 Educational Research Grant (\$10,000). The presentation at the HBCU Blockchain Summit: [Implementation of Supply Chain Smart Contracts in the VI](#) November 12, 2020.
5. UBRI [All About Blockchain Podcast with Lauren Weymouth interviews Joanne Luciano about Achieving Food Security With Smart Contracts "The Emerald Archipelago Supply Chain Use Case"](#) February 24, 2021

### **Invited Lectures**

1. UVI Hackfest
2. Semantic eHealth: getting more out of biomedical data using Semantic Technology. December 29, 2013. Ben Gurion University of the Negev, Beer-Sheva, Israel.
3. Translational Medicine: Patterns in Response to Antidepressant Treatment and their Implications. IEEE Schenectady Section, May 17, 2013. Engineering in Medicine & Biology Society (EBMS), Schenectady, NY.
4. How Data Science, the Web, and Linked Data are Changing Medicine Wolfram Data Summit, Washington DC, Sept 6-7, 2012.
5. Tom Munnecke interviews Joanne S. Luciano on Data-Driven Medicine, June 4, 2012. Cambridge MA, USA <http://munnecke.com/blog/?p=1690>.
6. American Medical Informatics Association, Joint Summits on Translational Science: TBI/CRI 2011, March 2011, San Francisco, CA.
7. Lessons Learnt in Ontology Construction, Hunter Lab, University of Colorado Health Sciences Center, Denver, CO. January 14, 2008.
8. BioPAX - Biological Pathway Exchange Language, Pasteur Institute, Paris France, July 2005.
9. DARPA Workshop on Computable Semantics for Systems Biology, Arlington, VA, March 3-4, 2005.
10. Systems Biology Summit, Boston MA, September 22, 2004.

### **Conference Platform Presentations, Workshops, and Tutorials**

1. *Introduction to Data Science for High School Students*. Commissioned by Operation Inspire and Junior Achievement, held two two-hour workshops with High School Students across the USVI territory, December 1 & 2, 2021.
2. *Data Science Introduction and Curriculum for High School Students – Teacher’s Workshop*. January 15, 2022.
3. *Why are some websites successful (at behavioral change)?* Joanne S. Luciano, Grant Cumming, David Molik, Eva Kahana. INFORMS International 2016, June 12 2016 -June 15 2016, Hilton Waikoloa Village, Waikoloa Village, Hawaii USA <http://meetings2.informs.org/wordpress/2016international/>
4. *Health Web Observatories: Creating Preferable Health Outcomes through Health Web Science*. INFORMS Healthcare Conference 2015, Nashville, TN July 29-30, 2015. Joanne S. Luciano, Healthcare Conference 2015 Nashville, Tennessee, USA

5. *Semantic Computing in Healthcare Industry*. Tutorial. Seventh IEEE International Conference on Semantic Computing (ICSC), September 16-18, 2013. Irvine, California. <http://iee-icsc.org/icsc2013>
6. An RDF/OWL Knowledge Base for Query Answering and Decision Support in Clinical Pharmacogenetics Presentation given by Matthias Samwald. Distinguished Paper Award. <http://www.medinfo2013.dk/program/distinguished-paper-and-poster-awards>
7. Keynote: Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine November 11, 2012 *Understanding Recovery as a Mechanism for Individualized Treatment Selection in Major Depressive Disorder: A case study. The Joint Workshop on Semantic Technologies Applied to Biomedical Informatics and Individualized Medicine*. Workshop of 11th International Semantic Web Conference.
8. Data Driven Medicine; Data, not Programs, Sharing, not Hoarding, Personal, not Population UAB Innovation Forum BIG DATA Forum / June 5, 2012.
9. Life Web Science Workshop 2013. May 5, 2013, Paris France. <http://www.websci13.org/workshops/wk9-life-web-science-workshop/>
10. Building Semantically-Enriched Web Observatories. First International Workshop on Building Web Observatories. Web Science 2013 Workshop. May 1, 2013, Paris, France. <https://sites.google.com/site/bwebobs13/>
11. OntologySummit2013 Hackathon Clinics GOEF IChoose. (HC-02) The General Ontology Evaluation Framework (GOEF) & the I-Choose Use Case. Project Champions: Joanne Luciano, James Michaelis, Nicolau DePaula, Djoko Sigit Sayogo, April 4-6, 2013. [http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2013 Hackathon Clinics GOEF IChoose](http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2013+Hackathon+Clinics+GOEF+IChoose)
12. Webscience 2012, Second Health Web Science Workshop, June 21, 2012. Evanston, Illinois. <http://www.websci12.org/workshops/health-web-science-workshop>.
13. Web Science 2011, Health Web Science Workshop, June 15, 2011. Koblenz, Germany <http://www.websci11.org/workshops/health-web-science-workshop/>
14. American Medical Informatics Association (AMIA) Summit on Translational Bioinformatics. San Francisco, California, March 10-12, 2010. Personalized Medicine Session. *Translational Medicine: Using Systems of Differential Equations to Identify Patterns in Symptom Remission in Response to Treatment and the Underlying Dynamics of the Interactions*. J. Luciano, Predictive Medicine, Inc.; M. Cohen, Boston University; J. Samson, Harvard Medical School and McLean Hospital.
15. American Medical Informatics Association (AMIA) Summit on Translational Bioinformatics. San Francisco, California, March 10-12, 2010. *The Translational Medicine Ontology and Knowledge Base: Using Semantic Web Technology in Personalized Medicine for Data Integration*, Joanne S. Luciano, Rensselaer Polytechnic Institute and Predictive Medicine Inc.
16. 23rd IEEE Annual Computer Communications Workshop, October 18-21, 2009, Lenox, Massachusetts, Invited special topic: W3C: Semantic Web for Healthcare and Life Science (HCLSIG). Workshop Co-Chairs: Bulent Yener, Rensselaer Polytechnic Institute, Troy, NY, USA and Sahin Albayrak, Technische Universitaet Berlin, Germany.
17. The Tenth Annual BioPathways Meeting, Jointly organized with EMERGENCE by Vítor Martins dos Santos, Vincent Danos, Joanne Luciano, Vincent Schachter, Aviv Regev, Eric Neumann, June 27-28, 2009, as a Special Interest Group Meeting within the ISMB / ECCB 2009 Stockholm, Sweden. Session on **Computational Methods in Translational Medicine** The talk: A NAIVE NOTION TO APPLY COMPUTATIONAL METHODS TO MEDICINE: A CASE STUDY MODELING UNIPOLAR DEPRESSION, THE FIRST 15 YEARS. Joanne S. Luciano, PhD., Tenth Annual BioPathways Meeting Program.

18. Infectious Disease Ontology Workshop September 16-17, 2008, Buffalo, N.Y. Influenza Ontology (presented by Burke Squires) and Ontology Evaluation (presented by Joanne Luciano). Presentations available on IDO website.
19. EBI Industry Programme Disease Ontology Workshop. June 19-20, 2008. Presentation available from [jluciano] if not on EBI website.
20. Luciano, Joanne S. and Stevens, Robert D. *OWL: PAX of mind or the AX? Experiences of Using OWL in the Development of BioPAX* For the workshop OWL: Experiences and Directions, Gaithersburg, MD, April 1-2, 2008. <http://www.EMPWR.org/OWL-ED-2008-Luciano.pdf>
21. W3C Semantic web health care and life science F2F, Boston, MA Jan 25, 2006
22. Experience Using OWL DL for the Exchange of Biological Pathway Information For the workshop 2005 OWL: Experiences and Directions, Galway, Ireland, Nov. 11-12, 2005
23. BioPAX Technical Workshop, Tokyo Japan, November 17, 2005: Review of the BioPAX Ontology: <http://tinyurl.com/go94r> (presented by Matthew Horridge)
24. Drug Discovery Technology Technical Scientific Workshop Series. Workshop 10: Systems Biology: Can it Deliver the Magic Bullet? Boston, MA, August 10, 2005
25. BioPathways Semantic Aggregation, Integration and Inference, Tutorial, ISMB Detroit, MI, June 2005 <http://slideplayer.com/slide/7890070/>
26. Oracle Life Science Users Group (BioIT), Boston, MA, May 2005  
[http://www.olsug.org/Presentations/May\\_2005/Workshops/RDF\\_Workshop05.pdf](http://www.olsug.org/Presentations/May_2005/Workshops/RDF_Workshop05.pdf)
27. W3C Life Science Meeting, BioIT, Boston, MA, May 2005
28. W3C Workshop on Semantic Web for Life Sciences, Cambridge, MA, October 27-28 2004  
Session VII: Semantic Aggregation, Integration and Inference Report Luciano Presentation
29. Standards and Ontologies for Functional Genomics 2004 Presentation, Philadelphia PA
30. BioPathways Consortium 2004, Intelligent Systems for Molecular Biology 2004, Glasgow, Scotland 2004 Presentation
31. Bio-ontologies 2004, Intelligent Systems for Molecular Biology 2004 Glasgow, Scotland 2004 Presentation
32. Pacific Symposium on Biocomputing 2004 Presentation, Kohala Coast, HI.
33. Intelligent Systems for Molecular Biology 2003 BioPathways Consortium SIG, Brisbane, Australia
34. Intelligent Systems for Molecular Biology 2003 BioOntologies SIG, Brisbane, Australia
35. The Interoperable Informatics Infrastructure Consortium (I3C) Presentation, Cambridge, MA, USA, May 7, 2003
36. Pacific Symposium on Biocomputing 2003, January, 2003, Lihue, HI.
37. Neural Modeling of Cognitive and Brain Disorders, sponsored by NIH, Maryland, June 1995. *Neural modeling of Major Depressive Disorder*. (cited in Neural Modeling of Psychiatric Disorders, Eytan Ruppín, March 25, 1995. <http://www.cs.tau.ac.il/~ruppin/review.pdf>).

### **Conference Poster Presentations**

1. Samwald, M., Freimuth, R., Powers, R., **Luciano, J.**, Prud'hommeaux, E., Boyce, R., Marshall, M., Dumontier, M. An Ontology-based Formalism, Knowledge Base and Reasoning System for Clinical Genetics. *2013 AMIA Summit on Translational Bioinformatics*. San Francisco, March, 2013.
2. Matthias Samwald, Jun Zhao, Michel Dumontier, M. Scott Marshall, Kei Cheung, **Joanne S. Luciano**. "Translating ethnopharmacological findings into novel drug leads: the potential roles of linked open data and ontologies" In *Proceedings of the AMIA Summit on Translational Bioinformatics*, San Francisco, CA, March 7, 2011. (poster) Conference proceedings.
3. Patricia L. Whetzel, Colin Batchelor, Elgar Pichler, Bosse Andersson, Olivier Bodenreider, Tim Clark, Christopher Domarew, Michel Dumontier, Anja Jentzsch, Vipul Kashyap, Julia

- Kozlovsky, **Joanne Luciano**, Chimezie Ogbuji, Matthias Samwald, Jun Zhao, Susie Stephens. "Translational Medicine Ontology: A Patient-Centric Ontology for Drug Development and Clinical Practice" *Proceedings of the Summit on Translational Bioinformatics 2010*, San Francisco, USA.
4. Christine Denney, Bosse Andersson, Colin Batchelor, Olivier Bodenreider, Sam Cheng, John Hart, John Hill, **Joanne Luciano**, John Madden, Mark Musen, Elgar Pichler, Matthias Samwald, Sándor Szalma, Lynn Schriml, David Sedlock, Larisa Soldatova, Koji Sonoda, David Statham, Holger Stenzhorn, Trish Whetzel, Elizabeth Wu, Susie Stephens. „Creating a Translational Medicine Ontology" The Sixth International Workshop of Data Integration in the Life Sciences (Poster & Demo), Manchester, UK, 2009 (poster)
  5. *Utilizing the Ontology of Biomedical Investigations (OBI) for Influenza Sequence and Surveillance Analysis*. Richard Squires- UT Southwestern Medical Center at Dallas, Richard Scheuermann (UT Southwestern, Pathology); Lynn Schriml (University of Maryland School of Medicine, Institute for Genome Sciences); Eric Bortz (Mount Sinai School of Medicine, Microbiology); Torsten Staab (Los Alamos National Laboratory, Applied Engineering and Technology); Marc Colosimo (Mitre Corporation, Information Technology); Joanne Luciano (The MITRE Corporation, Information Technology); July 2008, Poster T13
  6. BioOntologies [Poster 3] **Joanne Luciano**, Lynn Schriml, Burke Squires and Richard Scheuermann, *The Influenza Infectious Disease Ontology (I-IDO)*. (<http://bio-ontologies.org.uk/2008/download/Bio-Ontologies2008.pdf>). The 11th Annual Bio-Ontologies Meeting Organized by: Phillip Lord, Newcastle University, Nigam Shah, Stanford University, Susanna-Assunta Sansone, EMBL-EBI and Matthew Cockerill, BioMed Central, July 20, 2008, Co-located with ISMB 2008, Toronto, Canada
  7. Molecular Medicine Tri Conference, San Francisco, CA April 2005
  8. [ISMB 2008 Conference, Toronto, Canada, Birds of a Feather](#)
  9. Pacific Symposium on Biocomputing, 2006, Maui, Hawaii. Poster (late arrival)
  10. NIST 2003 Presentation (remote presentation)
  11. Bio-Ontologies, Intelligent Systems for Molecular Biology 2003, Brisbane, Australia
  12. [Intelligent Systems for Molecular Biology 2003](#), Birds-of-a-Feather
  13. Several presentations and posters at various conferences including International Neural Networks Conference, Intelligent Systems for Molecular Biology, Neurosciences, Pacific Symposium on Biocomputing, 1995-2003.

## **PROFESSIONAL SERVICE**

Dean's Advisory Board, Metropolitan College, 2003-2010

Editor of the series, "Semantic Technologies in Healthcare and Life Sciences", Journal of Biomedical Semantics. BioMed Central. <http://www.jbiomedsem.com/series/SWAT4LSCSHALS>.

Session Moderator: Geo-Data Informatics 2011 Workshop, Boulder, CO, 2011

Co-Organizer/Steering Committee, BioPathways Consortium, 2001-2010.

BioPathways Consortium is an international organization fostering scientific development through understanding of biological pathways.

- Grant proposal writing for funding various activities of the Consortium.
- Maintained website facilitating worldwide communications among life sciences community. Negotiated with Web design firm that led to \$6,000 savings
- Co-development of pathway genome databases for *Prochlorococcus marinus*, a marine photosynthetic bacterium in George Church's lab at Harvard Medical School.

## **Manuscript Reviewer**

BioPathways Consortium

BMC Bioinformatics  
Briefings in Bioinformatics  
Drug Discovery Today  
Intelligent Systems for Molecular Biology  
International Neural Network Society  
International Semantic Web Conference (ISWC)  
Journal of Bioinformatics  
Journal of Biomedical Informatics  
Journal of Biomedical Semantics  
Journal of Web Semantics  
OWL-ED  
Pacific Symposium on Biocomputing (PSB)  
PLoS One

### **Grant Proposal Reviewer**

American Heart Association, 2019  
NIH Clinical Translational Science Award Reviewer X02, 2011  
NIH NCRR P41 Biomedical Technology Research Centers Review Pane, 2011  
NSF MERIT Review Survey, 2011  
NSF Review Panels, April 2005, November 2007

### **UNIVERSITY/DEPARTMENTAL SERVICE**

University of the Virgin Islands: Faculty Advisor to student-led Data Science, Analytics, and Blockchain Club (Fall 2019). The purpose of the Data Science, Analytics, and Blockchain Club is to inspire and expose the next generation of computer scientists and engineers in the academic behind data science, analytics, and blockchain while presenting career opportunities that come from having knowledge in such areas.

University of the Virgin Islands: Faculty Advisor to student-led Aviation Club (Fall 2019). The purpose of the Aviation Club is to inspire and expose the next generation of aviators to the fields of aviation which include air traffic, control, airport security, aerospace engineering, and flight planning and training.

Indiana University: Faculty Advisor to the Data Science Club (Fall 2018)  
Host visitors to the university to meet with students about academic and industry opportunities.  
Build partnerships with industry and community to advance students through internship and / or research opportunities.

Indiana University: Initiated and facilitated the Data Science and Health Policy Club students in an Indiana University Opioid Data Wrangling Challenge held in April 2018. Faculty from School of Public and Environmental Affairs (SPEA), School of Informatics, Computing, and Engineering (SICE) and the School of Public Health (SPH) collaborated with the clubs. Prizes and certificates were awarded to the top three teams.

Organized and led RPI tutorial at the Conference on Health Care and Life Science, Cambridge, MA Feb 23-25, 2011. <http://www.iscb.org/archive/conferences/iscb/cshals2011-program/cshals2011-tutorial.html#rpi>



Organized and led RPI tutorial at the Conference on Health Care and Life Science, Cambridge, MA Feb 22-24, 2012. <http://www.iscb.org/cshals2012-program/cshals2012-tutorial>

## DEPARTMENTAL SERVICE

### The University of The Virgin Islands

Search Committee – Computer Science

### Indiana University

Data Science Curriculum Committee

Honor Students Selection Committee

Pro-health Health Journeys Lab

### Rensselaer Polytechnic Institute

CS Undergraduate Recruiting – volunteered to meet and greet students (Fall 2012)

CS Undergraduate Women – meet regularly, advise, discuss, and provide guidance to female undergraduate computer science students

CS Department – RPI Spring Open house

Deputy Director, Web Science Research Center, Tetherless World Constellation

RPI/TWC Web Science Observatory representative

Co-organized Elsevier / Tetherless Health and Life Science Hackathon, June 27-28, 2011. Pat's Barn, RPI, Troy NY, USA

## PROFESSIONAL SOCIETIES

### Societies

American Association for the Advancement of Science

Association for Computing Machinery

International Society for Computational Biology: Finance Committee, 2002-2005; Publications Committee, 2007-2008;

C-SHALS ISCB Scientific Advisor, Organizing Committee, 2007-2011;

CSHALS Conference Chair, 2012

### Organizing Committees

- 2018 Program co-chair (Biomedicine). First IEEE International Conference on Artificial Intelligence for Industries (ai4i 2018), September 26-28, 2018, The Hills Hotel, Laguna Hills, California, USA <http://www.ai4i.org>  
<https://ieeexplore.ieee.org/xpl/conhome/8656626/proceeding>  
<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8665718>
- 2016 INFORMS International Session Chair
- 2013 Ontology Summit 2013; Hackathon Clinics. HC-02. The General Ontology Evaluation Framework (GOEF) & the I-Choose Use Case. April 6, 2013.
- 2012 Chair C-SHALS Clinical Semantics for Healthcare and Life Sciences (C-SHALS)
- 2012 Chair ACM Web Science 2012 Workshops (ACM Web Sci 2012), June 22-24, Evanston, Illinois <http://www.websci12.org/organization>
- 2012 2<sup>nd</sup> Health Web Science Workshop. June 22, 2012. Evanston, Illinois.  
<http://www.websci12.org/workshops/health-web-science-workshop>
- 2011 Elsevier/Tetherless World Health and Life Sciences Hackathon (27-28 June 2011)
- 2011 C-SHALS Clinical Semantics for Healthcare and Life Sciences (C-SHALS)

- BioPathways Consortium (2002-2009)
- 2010 C-SHALS Clinical Semantics for Healthcare and Life Sciences (C-SHALS) Feb 24-26  
2010 <http://www.iscb.org/cshals2010-home/>
- 2009 ISWC Semantic Web Applications in Scientific Discourse (SWASD)  
<http://esw.w3.org/topic/HCLS/ISWC2009/Workshop>
- 2009 C-SHALS Clinical Semantics for Healthcare and Life Sciences (C-SHALS) Feb 25-27  
2009 <http://www.iscb.org/cshals2009/>
- 2007 BioPAX (2002-2007)
- 2007 WWW Health Care and Life Sciences Data Integration (Banff, Canada)
- 2006 BioPAX-Manchester OWL Workshop April 4-8, U Manchester, School of Computer Science
- 2006 ISWC First International Semantic Web in Health Care and the Life Sciences

### Program Committees

- 2010 OWLED OWL Experiences and Directions
- 2009 International Semantic Web Conference, (ISWC) In Use Track  
([http://iswc2009.semanticweb.org/wiki/index.php/ISWC\\_2009\\_Semantic\\_Web\\_In\\_Use\\_Track/Program\\_Committee](http://iswc2009.semanticweb.org/wiki/index.php/ISWC_2009_Semantic_Web_In_Use_Track/Program_Committee))
- 2009 ESWC The 6th European Semantic Web Conference Program Committee  
<http://eswc2009.org/>
- 2008 SWAT4LS International Workshop on Semantic Web Applications and Tools for Life Sciences 28th November 2008, Edinburgh, UK <http://www.swat4ls.org>
- 2008 LDOW Linked Data on the Web <http://events.linkedata.org/ldow2008/>
- 2008 ESWC The 5th European Semantic Web Conference Demo  
<http://www.eswc2008.org/calldemos.html>
- 2008 ESWC The 5th European Semantic Web Conference <http://www.eswc2008.org/>
- 2007 OWL-ED OWL Experiences and Directions
- 2006 ISWC Use Track
- 2006 ISWC Research Track
- 2006 OWL-ED OWL Experiences and Directions
- 2006 BioPAX-Manchester OWL Workshop
- 2005 OWL-ED OWL Experiences and Directions

### PUBLICATIONS

#### Patents

1. *Automated Treatment Selection Method*, US Patent Number 6,063,028. Issued 5/16/00
2. *Method for Predicting the Therapeutic Outcome of a Treatment*, US Patent Number 6,317,731. Issued 11/13/01.

#### Books

1. **Luciano, JS**, Cumming, GP, Kahana, E, Wilkinson, MD, Brooks, EH, Jarman, H, McGuinness, DL, Levine, MS. Health Web Science. In *Foundations and Trends in Web Science*. Now Publishers Inc. Hanover, MA, USA (2014)

#### Peer-Reviewed Research Articles

1. **Luciano, Joanne S.**, Sayogo, Djoko, DePaula, Nic, Jarman, Holly, Tayi, Giri, Zhang, Jing, Hrdinova, Jana, Pardo, Theresa, Andersen, Deborah L., Andersen, David F., Luna-Reyes, Luis. Building a Certification and Inspection Data Infrastructure to Promote Transparent

- Markets. *Int. J. Electron. Gov. Res.* 13, 4 (October 2017), 53-75. DOI: <https://doi.org/10.4018/IJEGR.2017100104>.
2. Djoko S. Sayogo, Weijia Ran, Giri K. Tayi, **Joanne S. Luciano**, Luis Luna-Reyes, Nicolau Depaula, Holly Jarman, Jing Zhang, Graduate School of Management, Jana Hrdinova, Deborah Lines Andersen, David F. Andersen, Theresa Pardo. "Ontological Modeling of Certification and Inspection Process to Support Smart Disclosure of Product Information." *International Journal of Public Administration in the Digital Age* Volume 3 • Issue 2 • April-June 2016.
  3. Grant P Cumming, Edward Morris, Paul Simpson, Tara French, Eva Kahana, **Joanne S Luciano** and David Molik. "The future of post-reproductive health - the role of the Internet, the Web, information provision and access." *Post Reproductive Health* Vol. 22(3) 123-130 (2016). DOI: 10.1177/2053369116647858
  4. **Luciano, JS**, Cumming, GP, Wilkinson, MD., and Kahana, E. The Emergent Discipline of Health Web Science: *J Medical Internet Research, J Med Internet Res* 2013 (Aug 22); 15(8):e166 <http://www.jmir.org/2013/8/e166/>
  5. Boyce, RD, Horn, JR, Hassanzadeh, O, de Waard, A, Schneider, J, **Luciano, JS**, Rastegar-Mojarad, M, Liakata, M. Dynamic Enhancement of Drug Product Labels to Support Drug Safety, Efficacy, and Effectiveness. *Journal for Biomedical Semantics*. 2013, 4:5 (26 January 2013). <http://www.jbiomedsem.com/content/4/1/5>
  6. Matthias Samwald, Adrien Coulet, Iker Huerga, Robert L Powers, **Joanne S Luciano**, Robert R Freimuth, Frederick Whipple, Elgar Pichler, Eric Prud'hommeaux, Michel Dumontier, and M Scott Marshall, "Semantically enabling pharmacogenomic data for the realization of personalized medicine" *Pharmacogenomics*, January 2012, Vol. 13, No. 2, Pages 201-212 (doi: 10.2217/pgs.11.179)
  7. **Luciano, Joanne S.**, Bosse Andersson, Colin Batchelor, Olivier Bodenreider, Tim Clark, Christine K. Denney, Christopher Domarew et al. "The Translational Medicine Ontology and Knowledge Base: driving personalized medicine by bridging the gap between bench and bedside." *J Biomed Semantics* 2, no. Suppl 2 (2011): S1.
  8. Sriram, R. D.; Bock, C. E.; Neuhaus, F. M.; Wallace, E. K.; Brady, M. C.; **Luciano, J.**; Musen, M.; *NIST Workshop on Ontology Evaluation* (NISTIR 7774) Published: April 01, 2011.
  9. Dr. Emek Demir, Mr. Michael Cary, Ms. Suzanne Paley, Dr. Ken Fukuda, Dr. Christian Lemer, Dr. Imre Vastrik, Dr. Guanming Wu, Dr. Peter D'Eustachio, Carl Schaefer, **Dr. Joanne Luciano**, Dr. Frank Schacherer, Dr. Irma Martinez-Flores, Dr. Zhenjun Hu, Dr. Veronica Jimenez-Jacinto, Dr. Geeta Joshi-Tope, Kumaran Kandasamy, Dr. Alejandra Lopez-Fuentes, Dr. Huaiyu Mi, Dr. Elgar Pichler, Dr. Igor Rodchenkov, Dr. Andrea Splendiani, Dr. Sasha Tkachev, Dr. Jeremy Zucker, Dr. Gopal Gopinath, Dr. Harsha Rajasimha, Ms. Ranjani Ramakrishnan, Dr. Imran Shah, Dr. Mustafa Syed, Dr. Nadia Anwar, Dr. Özgün Babur, Prof. Michael Blinov, Dr. Erik Brauner, Dr. Dan Corwin, Dr. Sylva Donaldson, Dr. Frank Gibbons, Dr. Robert Goldberg, Dr. Peter Hornbeck, Augustin Luna, Dr. Peter Murray-Rust, Dr. Eric Neumann, Mr. Oliver Ruebenacker, Dr. Matthias Samwald, Mr. Martijn van Iersel, Mrs. Sarala Wimalaratne, Dr. Keith Allen, Mr. Burk Braun, Dr. Michelle Whirl-Carrillo, Dr. Kam Dahlquist, Andrew Finney, Dr. Marc Gillespie, Dr. Elizabeth Glass, Dr. Li Gong, Dr. Robin Haw, Dr. Michael Honig, Mr. Olivier Hubaut, Mr. David Kane, Dr. Shiva Krupa, Miss Martina Kutmon, Miss Julie Leonard, Dr. Debora Marks, Mr. David Merberg, Dr. Victoria Petri, Dr. Alexander Pico, Mr. Dean Ravenscroft, Miss Liya Ren, Nigam Shah, Miss Margot Sunshine, Miss Rebecca Tang, Mr. Ryan Whaley, Dr. Stanley Letovsky, Dr. Kenneth Buetow, Dr. Andrey Rzhetsky, Dr. Vincent Schachter, Dr. Bruno Sobral, Dr. Ugur Dogrusoz, Dr. Mirit Aladjem, Dr. Shannon Mcweeney, Dr. Ewan Birney, Dr. Julio Collado-Vides, Susumu Goto, Dr. Michael Hucka, Dr. Nicolas Le Novere, Dr. Natalia Maltsev, Dr. Akhilesh Pandey, Dr. Paul Thomas, Dr. Edgar Wingender, Dr. Peter Karp, Dr. Chris Sander, Dr. Gary Bader. "The BioPAX community

- standard for pathway data sharing" *Nature Biotechnology*, Volume 28, Number 9, September 2010. <http://www.nature.com/nbt/journal/v28/n9/pdf/nbt.1666.pdf>
10. Matthias Samwald, Michel Dumontier, Jun Zhao, **Joanne Luciano**, M. Scott Marshall, Kei Cheung. "Integrating findings from traditional medicine into modern pharmaceutical research: the potential role of linked open data. *Chinese Medicine* 5:43 (2010). <http://www.cmjournal.org/content/pdf/1749-8546-5-43.pdf>  
<http://www.cmjournal.org/content/5/1/43>
  11. Christopher Brewster, Simon Jupp, **Joanne Luciano**, David Shotton, Robert D Stevens and Ziqi Zhang. "Issues in learning an ontology from text." *Proceedings of the Bio-Ontologies Special Interest Group Workshop 2008: Knowledge in Biology*. S1doi:10.1186/1471-2105-10-S5-S1 <http://www.biomedcentral.com/1471-2105/10/S5/S1>. Published: 6 May 2009.
  12. Kei-Hoi Cheung, Huajun Chen, Yimin Wang, Susie Stephens, **Joanne Luciano**, Vipul Kashyap, Special Issue Editors, 2008 Special Issue of the Journal of Biomedical Informatics: Semantic BioMed Mashup. Volume 41, Issue 5, October 2008. Semantic mashup of biomedical data. Science Direct.
  13. Vipul Kashyap, Kei-Hoi Cheung, Donald Doherty, Matthias Samwald, M. Scott Marshall, **Joanne Luciano**, Susie Stephens, Ivan Herman and Raymond Hookway (2008). Ontology based data integration for biomedical research. *The Semantic Web*, 97-122.
  14. Lynette Hirschman, Cheryl Clark, K. Bretonnel Cohen, Scott Mardis, **Joanne Luciano**, Renzo Kottmann, James Cole, Victor Markowitz, Nikos Kyrpides, Norman Morrison, Lynn M. Schriml, Dawn Field, and the Novo Project. 2008 Habitat-Lite: A GSC Case Study Based on Free Text Terms for Environmental Metadata. *OMICS: A Journal of Integrative Biology*. June 2008, 12(2): 129-136. <http://www.liebertonline.com/doi/pdfplus/10.1089/omi.2008.0016>
  15. **Luciano, Joanne S.** and Stevens, Robert D. 2007. *e-Science and biological pathway semantics*. *BMC Bioinformatics* 2007, 8(Suppl 3): S3 <http://www.biomedcentral.com/1471-2105/8/S3/S3>
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