

# James Schlitt, MPH

Computational Epidemiologist at the Biocomplexity Institute of Virginia Tech

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## Summary

I graduated in 2007 from Old Dominion University with a Bachelor of Science in Chemistry, Biochemistry, and Biology. While studying at ODU, I developed a compartmental SEIR model in C++ to study multi-strain, multi-population HPV transmission and to evaluate the effectiveness of novel vaccine interventions with regards to student relationship dynamics and abiotic synergy cofactors. For this work I was awarded the Gene Newman Award for Excellence In Medical Modeling and Simulation Research at the 2007 VMASC Capstone Conference.

Following a couple years break in industry, I am currently pursuing a PhD in Genetics, Bioinformatics, and Computational Biology at the Network Dynamics and Simulation Science Laboratory of the Virginia Bioinformatics Institute. My research topics include the optimization of military pandemic response sequences via agent based stochastic modeling, the development of web enabled front and back ends for collaborative research, stochastic search optimization of geographic allocation problems, and the detection of emerging pandemics via social media surveillance.

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## Education

### **Virginia Polytechnic Institute and State University**

Doctor of Philosophy (Ph.D.), Genetics, Bioinformatics, and Computational Biology, 2014 - 2018

Grade: 3.95

Activities and Societies: Public Health Group of Virginia Tech NDSSL

### **Virginia-Maryland College of Veterinary Medicine**

Master of Public Health (M.P.H.), Infectious Disease, 2014 - 2016

Grade: 3.95

### **Old Dominion University**

Bachelor of Science, Chemistry, Biochemistry, and Biology, 2002 - 2007

Activities and Societies: Relay For Life, Sigma Nu

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## Experience

### **Computational Epidemiologist at Biocomplexity Institute of Virginia Tech**

April 2013 - Present (3 years 11 months)

\*Developed biologically inspired algorithms for geographic resource allocation during the 2014 West Africa Ebola outbreak.

\*Study design, implementation, analysis, and visualizations of outbreak mitigation strategies via agent based, stochastic models with the Network Dynamics and Simulation Science Laboratory.

\*Social media detection and surveillance of emergent epidemics with natural language processing via machine learning algorithms.

\*Coding web enabled front ends and analysis tools for scientific collaboration over massively parallel research systems.

\*Collaborating with & conducting research funded by the Virginia Department of Health, the Center for Disease Control, and the National Institutes of Health.

### **Regional Sales Representative at Matsutani America Inc**

August 2008 - June 2012 (3 years 11 months)

\*Sold specialty ingredients to food, beverage, cosmetic, and pharmaceutical clients with a territory spanning Northern New Jersey and New York State/Metro Area.

\*Researched, coordinated, and conducted technical sales calls both individually and in a scientific team environment.

\*Active member of the National IFT, four regional chapters, and the Northeast Dairy Association.

\*Managed national accounts, assisting with bids, innovation, troubleshooting, and regulatory compliance.

### **Programmer at Old Dominion University**

September 2007 - May 2008 (9 months)

\*Developed an advanced compartmental SEIR model of multi-strain, multi-population HPV transmission in C++ to evaluate the effectiveness of novel vaccine interventions with regards to multistrain synergy, periodic migration, and relationship dynamics.

\*Compiled datasets from behavioral surveys of Old Dominion University Students.

\*Won the Gene Newman award by achieving first in the Northrop Grumman Medical Modeling Track of the 2007 VMASC Capstone Conference.

### **Quality Assurance, Intern at Tidewater SKANSKA AB**

June 2006 - August 2006 (3 months)

\*Measured, analyzed, and cataloged precast concrete girders at contracted jobsites.

\*Created and documented official records of deviances.

\*Assessed the viability of cataloged girders for use in the repair of the Escambia Bay Bridge.

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## Certifications

### **Amateur Radio Technician Class License**

Federal Communications Commission License KK4QZZ May 2013

### **Emergency Medical Technician**

National Registry of Emergency Medical Technicians License E3111678 December 2013 to March 2016

### **Emergency Medical Technician**

Virginia Department of Health License B201303330 December 2013 to December 2017

### **Emergency Vehicle Operator Class 3**

Virginia Association of Volunteer Rescue Squads November 2013 to November 2018

## **Call Out Qualified**

South West Virginia Mountain Rescue Group    March 2014

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### Volunteer Experience

#### **Recruitment and Retention Sergeant - BVRS Special Operations Division at South West Virginia Mountain Rescue Group**

March 2014 - Present

Assisting with technical Search And Rescue operations across adverse terrain. Trained in land navigation, first aid/ CPR, rope & knot work, tracking, and wilderness survival techniques.

As recruitment and retention Sergeant, exploring analytics to quantify and track search team member stress to improve retention following critical incidents.

#### **Kickass Civilian at Team Rubicon USA**

December 2016 - Present

Civilian volunteer in veteran-centric disaster relief organization, seeking to leverage first responder, public health, and computational experience for rapid response disaster relief efforts.

#### **Probate EMT at Blacksburg Volunteer Rescue Squad**

August 2013 - September 2014

Following completion of EMT Academy and NREMT certification, enrolled as a probationary member, assisting in EMT calls & operations and engaged in continuing education courses.

#### **Course Graduate at Virginia Master Naturalists**

September 2012 - September 2014

Trained in the protection, management, assessment, and utilization of diverse natural habitats. Volunteering for woodland cleanup, invasive plant removal, and educational media illustration.

#### **Volunteer Searcher at Appalachian Long Distance Hikers Association - Search and Rescue**

December 2016 - Present

Search and rescue volunteer in a novel organization specializing in long term search operations on the Appalachian Trail.

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### Languages

**Spanish**

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### Skills & Expertise

**Microbiology**

**Science**

**R&D**

**Data Analysis**

**Laboratory**  
**Food Science**  
**Epidemiology**  
**Biochemistry**  
**Python**  
**Bioinformatics**  
**Computational Biology**  
**Modelling and Simulation**  
**R**  
**NLP**  
**Visual C++**  
**Unix**  
**Linux**  
**Excel**  
**Matplotlib**  
**Emergency Medicine**  
**NREMT**  
**EMT**  
**EMS**  
**Microsoft Excel**  
**PowerPoint**  
**Research and Development (R&D)**  
**Laboratory Skills**  
**Research**  
**Data Mining**

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## Interests

Food science, hiking, naturalist illustration, acrylic painting, genetic algorithms, data mining, web scraping, artificial intelligence, stochastic search optimization

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## Organizations

**Biocomplexity Institute of Virginia Tech**

April 2013 to Present

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## Publications

**ChatterGrabber: A Lightweight Easy to Use Social Media Surveillance Toolkit**

Online Journal of Public Health Informatics 2015

Authors: James Schlitt, MPH, Dr. Bryan Lewis, Dr. Stephen Eubank

To formally introduce ChatterGrabber, an open source, natural language processing based toolset for public health social media surveillance. ChatterGrabber is designed to collect and categorize a high volume of content at a low cost, providing a readily deployable solution for Epidemiologists to track emergent outbreaks in the field

and a signal for syndromic surveillance.

## **Social Media in disease surveillance and epidemiology research using Chatter Grabber (Workshop)**

American College of Epidemiology September 2015

Authors: James Schlitt, MPH, Dr. Bryan Lewis, Dr. Stephen Eubank

The workshop included the first true, open source release of ChatterGrabber as a portable, prebuilt virtual machine complete with tutorials and sample studies. Along with the software, a series of presentations and resources was collected to provide a four hour, zero to hero ChatterGrabber tutorial for Public Health research.

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## Test Scores

### **GRE - Verbal Reasoning**

January 2013 Score:168 - 98%

### **GRE - Quantitative Reasoning**

January 2013 Score:157 - 68%

### **GRE - Analytical Writing**

January 2013 Score:5.0 - 93%

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[Contact James on LinkedIn](#)