Brent R. Shambaugh

brent.shambaugh@gmail.com

USA Citizen
http://bshambaugh.org

Twitter: @Brent_Shambaugh

Education

August 2011, Department of Chemical, Biological, and Materials Engineering, Norman, Oklahoma
MS – Chemical Engineering
Thesis: *An Advanced Model for Melt Blowing and Modification of Air Fields for Improvement of Melt Blowing*

August 2006, Department of Chemical, Biological, and Materials Engineering, Norman, Oklahoma
BS – Chemical Engineering

Senior Capstone

05/2006 : Technical Report – Membrane Separation of Air to Produce Oxygen (Justin Brady, Travis Spain, Brent Shambaugh)

"The objective of this project is to determine if the production of a ceramic oxide membrane unit for separating oxygen from air is a profitable alternative to the production of oxygen storage units. " (http://www.ou.edu/class/che-design/a-design/projects-2006/Final%20Membrane%20Report.pdf)

Personal Responsibilities: Finalizing Report, Working on Happiness Function, Performing Monte Carlo Simulations for Economic Analysis, Studying Microchannel Heat Exchangers, Coordinating to build the overall system.

Personal Project Abstracts

Blogs
More Formal: A Distributed Economy (http://adistributedeconomy.blogspot.com)
Less Formal: Raptorlicious (http://raptorlicious.blogspot.com)
Conceptual Development
Literature Search / Brainstorming: P2P World-OS: A Peer-to-Peer Enterprise Platform (http://bshambaugh.org/Master_17.html)
Literature Search / Brainstorming: MNDF Project (http://bshambaugh.org/MNDF_Project.html)
Wireframing / Prototyping: EISPP (http://bshambaugh.org/eispp/)
Experiments:
Connect the Dots (http://bshambaugh.org/experiments/connect_dots4.html)
Node ARC D3 (http://bshambaugh.org/node-arc-d3/),(https://github.com/bshambaugh/node-arc-d3)
Integrated Space Analytics - Linked Data (https://www.youtube.com/watch?v=JLqvnFRiP24),

(http://integratedspaceanalytics.com/staging/queryportalpage)
Conceptual Overview:
Software Interoperability
Device Interoperability
Value Networks
Peer-to-Peer Computing
Peer-to-Peer Monetary System
Data in a Peer-to-Peer Economy
Manipulation and Creation of Data
-- Access of Data
-- Provenance of Data
-- Feasibility of Merging Value Networks
-- Controlling, Accessing, and Securing Data
-- Provenance and Access Control
-- Messaging Data
-- Aggregation of Data
-- Querying of Data
-- Visualization of Data
-- Entering the Data Space
Love and the Real World
-- Moral Implications and Benefits of a Peer-to-Peer Economy
-- Cooperation Amongst Groups in a Distributed Toplogy
-- Cultural Inertia in Organizations
-- Intellectual Property
-- Possibilities for the Future
Subject Areas: SPARQL, SPARQL/Update, Natural Language Processing, Vendor Relationship Management, Object Process Methodology, ISO15926, Faceted Browsing, Web Payments, WebID, Linked Data Platform, Creative Commons Licenses, RDF, Internet of Things, Public - Private Key Crytography, Network Visualization (Human - Computer Interaction), Protege, Ontologies (Upper, Domain), Follow Your Nose Browsing, Linked Data

History:

http://bit.ly/1aKTo1f (November 2007), http://bit.ly/1a4GRVH (February 2011), http://bit.ly/1feMY7m (January 2014)

Academic Publication Abstracts

02/16/2012 (Published) – Brent Shambaugh et al., Modifying Air Fields To Improve Melt Blowing , Ind. Eng. Chem. Res. (https://pubs.acs.org/doi/abs/10.1021/ie202501u)

An advanced model for melt blowing was used to predict the effects of modified air fields on fiber formation. The model, which was developed previously, involves the simultaneous solution of the momentum, energy, and continuity equations. Crystallization effects were included. The model equations were solved numerically. Simulations were done for two classes of modified air fields. The first class of modified air field has a plateau of constant velocity and temperature. For wide plateaus placed near the die face, the effect of the plateau is substantial. Fiber diameters are reduced (by up to two times) versus diameters for when there is no plateau. The second class of modified air field has a quench (or a plateau-quench). Quenching was simulated as a step drop in air temperature. The simulation showed that quenching can enhance online crystallinity, though

fiber attenuation is reduced when quenching is used.

10/07/2011 (Published) - Next-Generation Modelling of Melt Blowing , *Ind. Eng. Chem. Res.* *(https://pubs.acs.org/doi/abs/10.1021/ie200836a?journalCode=iecred)*

An advanced model has been developed for predicting the behavior of a fiber as it is formed in the melt blowing process. The model involves the simultaneous solution of the momentum, energy, and continuity equations. Crystallization effects are included. The model equations are solved numerically. As a bottom boundary condition in this solution, a “stop point” is assumed. The stop point is the point where (a) the fiber stress is zero, and (b) the air velocity and fiber velocity are equal. Predicted parameters include fiber diameter, velocity, temperature, stress, and crystallinity. The predicted results show that very little online crystallization takes place under typical melt blowing conditions.

10/03/2007 (Publised) Beard et al., On-line Measurement of Fiber Motion During Melt-Blowing , Ind. Eng. Chem. Res.(https://pubs.acs.org/doi/abs/10.1021/ie070588j)

A high-speed camera was used to record the motion of a fiber below both a melt-blowing slot die and a melt-blowing swirl die. These recorded images were processed to determine the frequency and amplitude of fiber motion during melt blowing. The operating variables investigated included polymer flow rate, air flow rate, polymer temperature, and air temperature. A crossover counting method was developed to determine the frequency of fiber motion. The frequencies determined from this counting method favorably compared with frequencies determined by taking fast Fourier transforms of the fiber displacement data. Experimental results for frequency and amplitude were compared to predictions from a three-dimensional mathematical model for the melt-blowing process.

Computer Experience pulled from Resume

Microsoft Windows, Word, Excel, and PowerPoint; FORTRAN, g95, Microsoft Visual Studio with Visual Fortran, SPSS, PGPLOT, GNU/Linux, SigmaPlot, ProAnalyst, LaTeX, MathCad,ProAnalyst PHP, SQL, SPARQL, JavaScript, Linux Shell, Marmotta and SOLiD (Linked Data Platform) [See more: http://github.com/bshambaugh]

Additional Skills pulled from LinkedIN Profile

Chemical Engineering, Polymers, Research, Laboratory, Programming, Technical Writing, Flash, XML, InkScape, GAMS, High Speed Photography, Catalysis, Public Speaking, FTP, XLST, gEdit, Pro-II, Photography, Tissue Engineering, HTML, Photography, Computer Science, Gimp, Infrared Thermography, Image-J, Java, C

Work History

5/2018 – 8/2018: Robert Half – Office Team – Oklahoma City Metro

Temporary Employment making telephone calls.

10/2017 – 3/2018 : Researcher/Developer – Research Studios Austria – Vienna, Austria

Pair programmed to implement the agreement protocol for the web of needs [1] with Trig, JUnit, Maven, Eclipse, Jena using a Java based approach [2].

[1] (http://researchstudio-sat.github.io/webofneeds/)
[2] (http://ceur-ws.org/Vol-1934/contribution-07.pdf)
[3] (https://github.com/researchstudio-sat/webofneeds/tree/master/webofneeds/won-utils/won-utils-conversation)

11/2015 – 12/2016 : Semantic Web Consultant – Integrated Space Analytics – Douglas, MA

Worked on expressing Drupal 7 data using RDF in an ARC2 store and migrating this data to Marmotta (an ldp server) for view with LodLive. Also set up and developed Drupal modules in addition to annotate.js with Stanbol. I gave a presentation in Puerto Rico, which is on YouTube. Some of the migration scripts with SQL, SPARQL, and PHP are on Github.
(https://integratedspaceanalytics.com/)

Also, set up an experimental SOLiD (ldp with WebID and ACL) server. (http://crosscloud.org), (https://github.com/solid/node-solid-server)

Deliverables: (https://www.youtube.com/watch?v=JLqvnFRiP24), (http://integratedspaceanalytics.com/staging/queryportalpage), (https://integratedspaceanalytics.com/)

07/2015 – 11/2015 : Consultant to Nordsen Corporation (Duluth, GA [remote from Norman, OK])

Ran the modified melt blowing model from my graduate work to suggest improvements to an industrial process.

10/2014 – 11/2015 : Staff – Freddy's Frozen Custard and Steakburgers (Norman, OK)
(https://freddysusa.com/store/norman-ok/)

11/2013 – 12/2013 : Construction Worker – Home Construction Company (Los Angeles, CA)

11/2013 – 11/2013 : Tutor – Club Z! In-Home Tutoring Services (Los Angeles, CA)
(https://clubztutoring.com/)

Taught physics

01/2013 – 08/2013 : Adjunct Professor – Oklahoma City Community College (Oklahoma City, OK)
(http://www.occc.edu/)

Taught a lab for an introductory Chemistry Course

2012 : Drupal Website Designer – Home Consruction Company
(Los Angeles, CA [remote from Norman, OK])

05/2007 – 09/2011 : Laboratory Associate – University of Oklahoma (Norman, OK)

OU Center for Polymer and Fiber Research
100 East Boyd Street, Sarkeys Energy Center, Room T-335 Norman, OK 73019-1004, 405-325-6070
Graduate Student / Laboratory Associate

- Modified and worked with polymer processing models written in FORTRAN
- Worked with infrared, high-speed, and SLR cameras; specified and ordered equipment
- Operated complex melt blowing, spunbonding, and melt spinning equipment.
- Helped repair complex melt blowing, spunbonding, and melt spinning equipment
- Presented at National 2009 INDA Nonwovens Conference (Denver, CO); presented at two industrial

consortium meetings at University of Oklahoma
- Wrote polymer processing manual using Flash MX and Microsoft Word.
- Co-authored two papers in Industrial & Engineering Chemistry Research (two published, one pending).
  - Shambaugh, B. et al., Modifying Air Fields to Improve Melt Blowing, I & EC Research (2011)
  - Shambaugh, B. et al., Next-Generation Modelling of Melt Blowing, I & EC Research (2011)
- Mentored undergraduate researchers and taught experimental techniques.

Presentations:

11/24/2009 : On-line Measurement of Fiber Diameter and Temperature in the Melt Spinning and Melt Blowing Process – INDA Nonwovens Conference – Denver, CO (https://www.inda.org/)

08/2006 – 12/2006 : Graduate Research Assistant / Graduate Teaching Assistant – University of Kansas (Lawrence, KS)

KU Center for Environmentally Beneficial Catalysis (https://cebc.ku.edu/)
1501 Wakarusa Dr., LSRL Building A, Suite 110, *Lawrence, KS 66045, 785-864-4965*
Graduate Research Assistant. Gave PowerPoint presentations, read papers, ordered lab equipment

05/2005 – 05/2006 : Undergraduate Research Assistant – University of Oklahoma (Norman, OK)

OU Center for Polymer and Fiber Research
100 East Boyd Street, Sarkeys Energy Center, Room T-335 Norman, OK 73019-1004, 405-325-6070

Experimental Skills
- Operation of continuous, 20 lb/hr polymer processing equipment at high pressures and temperatures (e.g., 2000 psi and 350 C). The equipment includes a Brabender extruder, Zenith spin pumps, and Dynisco pressure transducers.
- Off-line analysis of polymers with polarizing microscope; stress/strain testing of specimens
- On-line analysis of fiber spinning with FLIR infrared camera and 150,000 frames/second Redlake camera.

Co-author (due to help with research):
- Beard, J. et al., On-line Measurement of Fiber Motion During Melt-Blowing, I & EC Research (2007)

Presentations (Industrial Consortium Meeting):
- Dejuan Frank, Brent Shambaugh – The Observation of Fiber Diameter and Motion – Center for Polymer and Fiber Research Meeting (Fall 2005)

Volunteer History

11/4/2016 – 11/6/2016 : Trump 2016 Campaign Door Knocking (Nashua, NH)

04/15/2015 : Volunteer – Junior Botball Challenge – Code Norman (Oklahoma City, OK)
(https://www.kipr.org/botball)

Watched kids compete as a judge

08/19/2015 : Software Carpentry Instructor – University of Oklahoma (Norman, OK)
(https://software-carpentry.org/)

Taught about working with the shell and git

08/06/2015 : Volunteer – BsidesLV (Las Vegas, NV)
(https://www.bsideslv.org/)

Watched the pool during a late night party

07/2015 – 09/2015 : Volunteer – AlphaCubeSat (Internet) (http://www.alphacubesat.com/wordpress/?page_id=9)

Sat in on meetings to build a cube sat for the NASA Cubequest Challenge

07/2015 – 07/2015 : Volunteer – Integrated Space Analytics (https://integratedspaceanalytics.com/)

Fixed links on the Drupal website

03/18/2014 – 11/2015 : Organizer and Founder – Code Norman (Norman, OK)

"This group is for people who like to code, who like to talk about code, or cannot seem to stop thinking about computers.

The objective is to provide an environment where people can learn from each other.

Come bring code to Norman! "

(https://www.meetup.com/CODE-Norman/)

03/2014 : Organizer and Founder – Norman Tech Talks Meetup (Norman, OK)

Meetup to allow the community give talks. Met at the Norman Public Library. Only one successful meeting.

05/2010 – 12/2013 : Choir Member – St. Mark's Catholic Church (Norman, OK)
(https://www.stmarkscatholicchurch.org/)

07/2012 – 05/2013 : *Principal Software Architect of Knowledge Management Group (while a member of Ohm Space) to Small Group at a Coffee Shop*

Led small informal group while at hackerspace.
Mission: Develop solutions to increase collaboration amongst creative spaces using the Semantic Web, Social Networks, Artificial Intelligence, Distributed Systems, and Product Lifecyle Management.

Talked about code at a coffee shop

2011 – 2013 : Volunteer - Norman Music Festival (Norman, OK) (http://normanmusicfestival.com/)

Attended meetings on behalf of the Cinematic Artists of Norman, Helped backstage and around the festival

05/2011 : Actor – Silver Maple – Produced by Scott Melgren

(https://www.facebook.com/silver.maple.movie/)

01/2007 – 05/2007 : Choir Member – St. Lawrence Catholic Campus Center (Lawrence, KS)
(https://kucatholic.org/)

05/2007 : Runner – Relay for Life – Team BMES (Lawrence, KS)

Fundraiser - Presence for a few hours at the University of Kansas

2006 – Volunteer : Special Olympics Oklahoma (Moore, OK) (https://www.sook.org/)

Presence for a few hours at a bowling alley

08/2005 – 12/2005 : WebMaster – University of Oklahoma Student Chapter of AIChE (Norman, OK)

- Created new position in organization to revive the old website
- Built site with HTML, Flash5, Flash MX, and JavaScript from Dynamic Drive
- Took pictures and posted pictures
- Participated in officer meetings and AIChE events
- Operated sound for the AIChE Banquet

Honors

Fall 2004 – Spring 2005 : Chevron-Phillips Scholar – Mentor (University of Oklahoma, Norman, OK) (http://www.ou.edu/coe/cbme)
2002 - National Society of Collegiate Scholars (University of Oklahoma, Norman, OK) (https://nscs.org/)
2002 - Alpha Lambda Delta Honor Society (University of Oklahoma, Norman, OK) (https://www.nationalald.org/)

Other Activities

11/2010 – 02/2014 : Distinguished Toastmasters and Boomer Nooners (Norman, OK) (https://www.toastmasters.org/Find-a-Club/01036139-distinguished-toastmasters)
Member of Tripoli Rocketry Association #18284, September 2018, L1 October (Sayre, OK)
Member of South Canadian Amateur Radio Society , https://w5nor.org/ HAM Radio Technician License - KI5CWB - January 31st, 2019

Recommendations

Manu Sporny - Founder and CEO of Digital Bazaar - payments, identity, blockchain (December 2014) (https://digitalbazaar.com/),(http://manu.sporny.org/about/)

I've worked with Brent for a number of years now. He has an great knack for synthesizing information from a sea of knowledge. Brent is my go-to-guy when we need to distill the best path forward for a technology vertical. He is capable of studying hundreds of sources of information and providing succinct insight into what he has found. If I'm ever wondering "What other initiatives/projects do X, Y and Z?", I ask Brent; chances are, he knows.

Cassandra Ketrick – Chair – Cinematic Artists of Norman (December 7, 2011) (https://www.linkedin.com/in/cassandrabizzaro/)

Brent Shambaugh is a hard worker and very dedicated to the success of the Cinematic Artists of Norman. He is always happy to help in any capacity, and is friendly to work with! Brent also brings valuable ideas to the table to improve the organization and overall he really is a team player. We are very lucky to have Brent as a part of our filmmaking group!

Outside Short Courses

01/2019 – 04/2019 : Basic Machining – Moore Norman Technology Center, Norman, OK (https://www.mntc.edu)

02/2017 – 10/2017 : Free Code Camp OKC – StarSpace 46 – Oklahoma City, OK (http://www.fccokc.com/)

09/2014 – 12/2014 : Teaching Software Carpentry - Instructor : Greg Wilson
(https://swcarpentry.github.io/instructor-training/)

06/2014 – 07/2014 : Knowledge Engineering and Semantic Web Technologies - OpenHPI - Dr. Harald Sack
(https://open.hpi.de/)

06/30/2014 – 07/2/2014 : VSCSE Data Intensive Summer School - University of Oklahoma - Norman, OK
(http://www.vscse.org/summerschool/2010/index.html)

06/2014 – 08/2014 : OKCoders -- Tailwind Office – Instructor: Phil Dow – Oklahoma City, OK
(https://github.com/okcoders/ok-coders-summer-2014)

03/2013 – (not completed) Web Intelligence and Big Data - Coursera - Dr. Gautam Shroff

Spring 2012 : Acting for Camera - The Actor Factory - Norman, OK (https://www.theactorfactory.com/)

11/2011 – 08/2012 : Private Voice - Sounder Music - Instructor: Angela Adragna - Norman, OK
(http://www.sondermusic.com/)

Presentations outside of Academia

04/10/2017 - Gremlin - Using Graph Database Thinking to Make Database Queries Functional – Oklahoma City Java User Group (https://www.youtube.com/watch?v=RkMYZcQEXOk)

04/22/2017 : An Overview of D3.js - CODE Norman Meeting - Norman Public Library - Norman, OK
(http://bshambaugh.org/presentations_two/d3presentation.pdf)

04/2017 - FreeCodeCampOKC – Introduction to P5.js “Processing Times JavaScript Power” – StarSpace46, Oklahoma City, OK
(http://bshambaugh.org/presentations_two/fccokcmarchtalk.pdf)

05/19/2016 : Demo with Integrated Space Analytics – International Space and Development Conference – San Juan, PR
(https://www.youtube.com/watch?v=JLqvnFRiP24)

10/16/2015 : New Worlds 2015 - Crowdsourced Space Development workshop - Austin, TX

(http://bshambaugh.org/presentations_two/overview_ld_sw_work.pdf)

10/9/2015 : Talk about EISPP and the Integrated Space Plan - Hacker Dojo - Mountain View, CA

Special guest: Frank the R.O.U.S.

04/21/2015 : Presentation - Linked Data 2015 - San Francisco, CA
(https://www.w3.org/wiki/Linked_Data_2015_Final_Report)

10/25/2014 – Introduction to Linked Data and Web Payments – Code Norman Meetup at Prototek OKC – Oklahoma City, OK
(https://www.meetup.com/CODE-Norman/events/213954302/),
(http://bshambaugh.org/presentations_two/intro_linked_data_and_web_payments_unfinished.pdf)

05/06/2014 – 05/08/2014 : Various Topics at Unconference - Internet Identity Workshop #18 - Mountain View, CA
(https://github.com/windley/IIW_homepage/raw/gh-pages/assets/proceedings/IIWXVIII_Book_of_Proceedings.pdf)

Likely similar submitted Presentation: (http://bshambaugh.org/presentations_two/payments_identity2.pdf)

04/03/2012 : A Distributed Economy at Ohm Space - Oklahoma City, OK
(http://wiki.ohmspace.org/images/7/7b/April-2012-5mof-BrentShambaugh.pdf)

02/07/2012 : The Evolving Social Web at Ohm Space - Oklahoma City, OK (Feburary 7th, 2012)
(http://bshambaugh.org/presentations/The_Evolving_Social_Web.pdf)

Selected Conferences/Events Attended

9/16/2018 – L1 Tripoli Certification - Sayre, OK (http://tripolioklahoma.org/)

9/1/2018 – 9/2/2018 – AirFest 24 – Argonia, KS (http://kloudbusters.org/)

8/25/2018 **–** Tulsa Mini-MakerFaire – Tulsa, OK (https://tulsa.makerfaire.com/)

7/23/2018 – New York Entreprenuers Meetup – New York, NY - (https://www.meetup.com/nycentrepreneurs/)

7/20/2018 – 7/22/2018 – Hope Conference – New York, NY (https://www.hope.net/index.html)

11/23/2017 – 11/24/2017 – DevFest Vienna – Vienna, Austria (https://devfest.at/)

11/14/2017-11/17/2017 – DeepSec -Vienna, Austria (https://deepsec.net/)

10/18/2017-10/21/2017: International Semantic Web Conference – Vienna, Austria
(https://iswc2017.semanticweb.org/)

07/24/2017 – 07/30/2017 – DEFCON 25

07/11/2016 – 07/13/2016 : Dataverse Community Meeting and Privacy Workshop - Harvard Medical School - Boston, MA (https://dataverse.harvard.edu/)

08/06/2015 – 08/09/2015 : DEFCON 23 (https://defcon.org)

11/03/2015 –ThunderPlains Conference - Cox Convention Center - Oklahoma City, OK
(http://thunderplainsconf.com/)

07/23/2014 – 07/24/2014 : OK SuperComputing Symposium - University of Oklahoma - Norman, OK
(http://www.oscer.ou.edu/Symposium2018/overview.html)

04/22/2007 : AIChE Annual Meeting – Houston, TX (https://www.aiche.org/)

11/2004 : AIChE Annual Meeting – Austin, TX

Selected Present and Previous Memberships:

National Space Society, Tripoli, American Institute of Chemical Engineers

Ohm Space – ~December 2011 – ~December 2012: (https://wiki.hackerspaces.org/OHM)
Cspace – ~January 2013 – ~June 2013 - Oklahoma City
Prototek OKC : ~June 2013 – ~October 2015 (http://prototekokc.com/)