Health and Technology

• https://prezi.com/3nzbo9-cj2js/uofm-cors-lightening-talks_lee/?utm_campaign=share&token=4878eb320eec84536956c1e84defad096dcf716daa9eed6b7de67a977d8c5a5e&utm_medium=copy
Data Science Cluster

Collaborative Cluster for Data Science Research and Education

Directors: David Kemme and Vasile Rus
{dmkemme,vrus}@memphis.edu

April 25, 2019
MISSION

• Provide advanced research opportunities and facilities for Data Science research scientists, University of Memphis faculty, advanced graduate students and community based researchers, in a collaborative environment.

https://www.memphis.edu/fedex/research/data_science/index.php
MISSION

• The Data Science Cluster provides leadership for the Data Science Research Initiative at the University of Memphis and the local community by creating a vibrant research environment and training future data scientists to build a Data Science community of practice that includes academia, government and industry in West Tennessee, the Mid-South and beyond.

https://www.memphis.edu/fedex/research/data_science/index.php
Focal Points

• **Research**: funded research, tight University-Corporate collaboration (see the Amazon – University of Washington model, *inter alia*)

• **Teaching and Instruction**: certificates, concentration, degrees, internships and fellowships, short-term intense workshops

• **Outreach Activities**: Seminar, 2-3 invited external speakers, Annual summit
Recent and Ongoing Activities

• Memphis DATA conference
  – well-attended (150+ attendees)
  – Two keynote speaker: Dr. Henry Kautz (NSF), and Dr. Bala Vaidyanathan (Fedex)
  – www.memphis-data.org
CALL FOR PARTICIPATION

Memphis DATA - A Data Science Conference

CLICK HERE TO REGISTER

March 29, 2019
Fedex Institute of Technology
www.memphis-data.org

Important Dates
Paper Submission Deadline: March 15, 2019
Early Registration Deadline: March 31, 2019
Late Registration Deadline: March 29, 2019

Organizing Committee

Memphis Data Science Conference (University of Memphis)

Program Chairs: Yingnan Zhang, Public Health & Rural Health (Computer Science)
Local Arrangements Chair: Nadeeb Ahmed (Computer Science) is now Chair.

Memphis Data is Sponsored by The University of Memphis

Goal

"The coming century is nearly the century of data" (Shoshitaish, 2006). Data Science is emerging as a new, transformative paradigm in science and technology. With large amounts of data being generated from various sources, such as social media, sensor networks, and digital products, the ability to manage, analyze, and interpret these data is becoming increasingly important. Data science involves the extraction of valuable insights and knowledge from data and the development of tools and methods to support decision-making and the creation of new products and services.

By the action of the Office of the Vice President for Research and Innovation, the Office of Sponsored Research, the University of Memphis has launched an ambitious multi-year effort to position data science leadership for the future in the state and region.

Memphis DATA’s conference is aimed to support the data science initiative and bring together the data science community from various disciplines, institutions, and sectors. The event will feature a variety of activities, including keynote speeches, panel discussions, workshops, and poster sessions. Attendees will have the opportunity to learn about the latest research and developments in data science, network with experts in the field, and participate in interactive discussions.

We invite submissions that address topics relevant to Data Science, broadly construed:

- Data Analysis and Interpretation
- Machine Learning
- Computer Vision
- Data Visualization
- Data Science and Engineering
- Data Science and Business
- Data Science and Education
- Data Science and Finance
- Data Science and Health
- Data Science and Social Influence
- Other relevant topics

Submissions Guidelines: Papers submitted should be in the form of an extended abstract (3 pages, including references). Papers will be reviewed by faculty. Accepted submissions will be in the form of an extended abstract (3 pages, including references). The deadline for paper submission is March 15, 2019.

For more information, visit www.memphis-data.org.
Recent and Ongoing Activities

• Training workshops
• Funded research
  – 11 projects funded for a total of $92k
• Data Science Speaker Series
  – Coming up
Data Science Cluster
Collaborative Cluster for Data Science
Research and Education

Directors: David Kemme and Vasile Rus
{dmkemme,vrus}@memphis.edu

April 25, 2019
The influence of neighborhood environment on health over aging process

- Neighborhood environment is associated with multiple health behaviors and outcomes
- Neighborhood environment may be more important for older adults
- Health ABC data, a longitudinal dataset
  - 1500+ older adults in Memphis
  - Cover a number of major health outcomes over 20 years
  - Household address / Neighborhood
- Goal: the impact of neighborhood environment on multiple diseases and health behaviors among older adults in Memphis
  - Major outcomes to be considered
    - Physical activity and diet
    - Obesity, hypertension
    - Depression, cognition
  - Research methods
    - Regression analysis, spatial analysis, structural equation analysis, and agent-based modelling

Yong Yang, School of Public Health, yyang15@Memphis.edu
Neighborhood environmental features
- Non-linear associations
- Variety of features
- Interactions among features
- Multiple features’ jointed affect

Older adults
- Aging process
- Heterogeneity within older adults
- Residential segregation

Direct pathways
- Stimulation (e.g., greenness, complexity)
- Exposures (e.g., air pollution, noise)

Indirect pathways
- Behaviors (e.g., physical activity, diet)
- Daily activities (e.g., travel, social activities)
- Health outcomes (e.g., Mobility, stress, depression)

Cognitive function

Yong Yang, School of Public Health, yyang15@Memphis.edu
Digital Humanities
Methods
CoRS

April 2019 Update
Convener: Dr. Melanie Conroy, World Langs + Lits (mrconroy@memphis.edu)

Presenter: Dr. Elizabeth T. Lane, English (etlane@memphis.edu)
Spring 2019 Achievements

14 members (faculty & graduate students)

Our website:
https://blogs.memphis.edu/dighum/

Active workshop series (partnered with the Marcus Orr Center for the Humanities)

Hired intern to post to social media and film events
(http://tinyurl.com/UMDHcors)

Hired research assistant to review grant opportunities
Fall 2019 Plans

Host THATCamp (informal conference) on digital humanities in the Midsouth

Grow membership and develop off-campus partners and partners on other campuses (Greater Memphis area DH Consortium)

Plot Fall 2019 workshop series

Create working groups and apply for funding identified this semester
Memphis Environmental Health Research Community (MEHRC)

- Overall Goal:
  Understand how exposures to chemicals and their interactions with non-chemical stressors and socioeconomic status cause environmental health disparities in vulnerable and/or disadvantaged populations at varying life stages.

Research Topics
1. Co-exposure to multiple environmental and social stressors
2. Environmental health disparities
3. Knowledge to action
MEHRC Scholars

Dr. Angela Antipova
Dr. Pratik Banerjee
Dr. Hoi Sing Chung
Dr. Cheryl Goudie
Dr. Wesley James
Dr. Chunrong Jia
Dr. Joyce Jiang
Dr. Maryam Salehi
Dr. Larry Smith
Progress

• Meetings
  – March 19, 2019. Seminar: Chemical and non-chemical stressors and health, by two Harvard professors
  – March 21, 2019. Environmental Health Poster Session with Harvard-JPB Environmental Health Fellows
  – April 16, 2019. MEHRC group meeting

• Projects
  – Characterizing Community Exposure to Polycyclic Aromatic Hydrocarbons (PAHs) in a Tri-State Area. Funded by EPA.
  – Antimicrobial Chemicals and Resistance Genes in Indoor Environments. Funded by JPB Foundation.
  – Environmental Exposure Reduction (REER) in a Multicomponent Asthma Intervention. Funded by MRC.
Progress

• Grant submissions:
  – Promoting Safe and Healthy Learning Environments in Early Childhood Learning Centers. Submitted to Urban Child Institute
  – Applications of statistical learning methods in studying profiles and health effects of co-exposures to complex environmental chemical mixtures. Submitted to FIT
  – Profiles of Chemical Contaminants and Antibiotic Resistance in Surface Soil of Urban Community Gardens. Submitted to FIT

• Manuscripts preparations:
  – Socioeconomic and environmental determinants of asthma prevalence in Shelby County schools
  – Built environment and school performance
  – Classification of volatile organic compound (VOC) profiles by microenvironment using machine learning methods
  – Aromatic compounds at gas stations represent a nontrivial outdoor exposure source
HIV Disparities Group

Dr. Lennon-Dearing (Social Work)
Dr. Hirschi (Social Work)
Dr. Marks (Counseling Psychology)
Dr. Thomann (Medical Anthropology)
Dr. Harrell (Nursing)
Dr. Ward (Public Health)
Dr. Pichon (Public Health)
Dr. Bartelli (Public Health)
Dr. Windsor (Institute for Intelligent Systems/Political Science)
Dr. Hailey Zettler (Criminology)
Jacqueline “Jay” Reid, Graduate Assistant

The definition of a health disparity is “a health difference that adversely affects defined disadvantaged populations, based on one or more health outcomes” (Duran & Perez-Stable, 2019, p. S10).

HIV Disparities Group

Goals
• Build a network of HIV-focused researchers.
• Develop new interprofessional partnerships.
• Build capacity to apply for external research funding.
• Develop innovative and effective research approaches to understand HIV disparities.

Activities
To hire a graduate student assistant.
4 Group Meetings; 4 invited guests.
  – **Mary Earhart Brown**, Division of Research and Innovation and Division of Research and Innovation; **Rachel Arthur**, Pre-Award Coordinator for SUAPP.
  – **David Sweat**, Shelby County Health Department, Epidemiology & Infectious Diseases.
  – **Andrea Stubbs**, Manager of Community Prevention Programs, St. Jude Children’s Research Hospital.

1 Group Survey
HIV Disparities Group

What we have learned
• Research each member is doing or has done related to HIV disparities.
• Potential funding sources for HIV research.
• Started identifying the local HIV community.
• Found ways we might engage the community to identify priority issues.

Challenges
• One of our group members already works with several community partners on different grants and she continues to pursue funding with these organizations.
• One of our group members accepted a new position at another university.
• Another group member has had to take a year off due to his current responsibilities.
Current Project LGBTQ+ Archive
• Seed Collection from OUTMemphis
• Features archival film footage from 1969 Miss Gay Memphis Pageant
• Collaborating with other local LGBTQ+ Organizations to grow the archive
• Plans to enhance collection with oral histories (opportunities for graduate student research)

Fall Event (F 10/25)
• De-centering Stonewall
  • Keynote Speaker – Nikki Lane
  • Local LGBTQ+ History Panel
  • On-campus drag event commemorating the 1969 Miss Gay Memphis Pageant (collaborating with Stonewall Tigers)
  • Collect material from community for the archive

CoRS Members
• Brigitte Billeaudeaux – UofM Libraries
• Robby Byrd – Journalism & Strategic Media
• Michael Medcalf – Theatre & Dance
• Susan Nordstrom – Counseling, Ed Psych & Research
• Virginia Solomon – Art
• Craig Stewart – Communication & Film
• Matthew Thomann – Anthropology
• Cookie Woolner - History
The aim of the Poverty CoRS – henceforth called the UM Poverty Research Collaborative (UMPRC) – is to foster ongoing collaboration to create an incubator for innovative ideas and the development of projects on an annual basis. The UMPRC will operate on the basis of a sustained model with a very strategic system for papers that can be adapted based on faculty needs and availability.
The Author Agreement

• A fundamental feature of the UMPRC
• One per project
• Defines rights and responsibilities
<table>
<thead>
<tr>
<th>CoRS Member</th>
<th>Discipline</th>
<th>Related interests &amp; contributions</th>
</tr>
</thead>
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| Dr. Elena Delavega  | Social Work                   | • The demographics of poverty in Memphis. She is the author of the popular Memphis Poverty Fact Sheet, updated yearly.  
• Structural causes of poverty.  
• Attributions of poverty and their effect on social services. |
| Dr. Debra Bartelli  | Public Health                 | • Relationship of poverty to health across the lifespan as well as an interest in its effects on child brain development.  
• Strong relationships with community organizations that serve the poor & marginalized. |
| Dr. Bert Burraston  | Criminology                   | • Reentry through the lens of criminal sociology.  
• Advanced skills in research methodology and quantitative statistics.                        |
| Dr. Amy T. Campbell | Cecil C. Humphreys School of Law | • The intersection of structural economic inequity, racial inequity, and health inequity.  
• Utilization of data to inform a systemic (systems transformation) approach to address persistent poverty. |
| Dr. Ty Dooley       | Public and Nonprofit Administration | • Equity, community development, and social justice with a specific focus on at-risk populations.  
• Research expertise in quantitative and qualitative methods and archival data sources (e.g., census data) |
<table>
<thead>
<tr>
<th>CoRS Member</th>
<th>Discipline</th>
<th>Related interests &amp; contributions</th>
</tr>
</thead>
</table>
| Prof. Demetria Frank | School of Law | • Intersection between law and culture, prisoner rights, and bias in the youth and criminal justice systems.  
• Director of Project MI, a policy and research collaborative that aims to transform the youth and criminal justice systems through community engagement, and by providing strategic youth justice advocacy, policy advisement, and developing local youth supports. |
| Dr. Andrew Guthrie | City & Regional Planning | • Transit planning for social equity.  
• Research expertise in mixed and qualitative methods. |
| Dr. Hirschi | Social Work | • Understanding power, including the role of power in racism, oppression, and stigma.  
• Research expertise in quantitative and qualitative methods. |
| Dr. Danielle Vance-McMullen | Public and Nonprofit Administration | • Nonprofit organizations' fundraising and finances and donations by individuals.  
• Approaches to efficiently directing funds to nonprofits impacting equity and poverty-reduction goals. |
| Dr. Sharon Wrobel | Public and Nonprofit Administration | • Social policy program evaluation and analysis, with a specific interest in education and health policy and equity. More recently, she has expanded her focus to include comparative analyses of social and economic policy in the Latin Caribbean. |
Data Project

• Spearheaded by the Cecil C. Humphreys School of Law
• Author Agreement in progress
• Funding
• Three meetings to date
Blame Index

• Collaborative project between Social Work and Public Administration
• Author Agreement in progress
• Two meetings to date
• Shovel-ready project
Center for social justice & Healing

Convener: Idia Thurston, PhD
Assistant Professor
Department of Psychology
TEAM OF SCHOLARS

Beverly Bond
History

Shelby Crosby
English

Sylverna Ford
University Libraries

Andre Johnson
Communication

Brian Kwoba
History

Artina McCain
Music

Ladrica Menson-Furr
African & Af Am Studies

Steven Nelson
Education

Idia Thurston
Psychology

Terrance Tucker
English
Vision & GOALS

• The Center for Social Justice & Healing is a research affinity group exploring social, environmental, economic, and physical influences that determine the health and well-being of people and communities in the MidSouth
• We focus on exploring, discussing, and creating innovative, collaborative, interdisciplinary, resilience-focused solutions for complex community problems related to healing from social injustice
• By linking artists, educators, historians, psychologists, religious leaders, and more, we are learning from diverse experiences while sharing interests in understanding and developing solutions to solve important problems of social injustice in our community from a strength-based perspective of healing
• We aim to engage community partners, graduate students, and thought leaders in interdisciplinary discourse via panel discussions, workshops, and scholarship on several healing themes
• By exploring these concepts in bimonthly meeting in interdisciplinary spaces, opportunities for creating community, future scholarship, research papers, and grants are being formed
PLANNED ACTIVITIES

- **Allyship (Shelby, Idia, & Full Team)**
  - Exploring the who, what, how, and why of being an ally

- **Truth & Reconciliation as a tool for social justice & healing (Beverly & Andre)**
  - Exploring places and spaces where T & R has and has not occurred, does it work, and the cyclical nature of social injustice

- **Black Liberatory Practices and Education as healing (Steven, Terrance, & Brian)**
  - The role of critical race theory, liberative education, and black feminist movements in alternative patterns of healing

- **Black Religion as Trauma and Healing (Andre & Terrance)**
  - Black liberation theology and ways to redefine theology that leads to liberation of people of all faiths

- **Slavery and Sounds (Artina, Beverly, & Shelby)**
  - The role of history, collective memory, arts and music in healing from social injustice

- **Research as healing (Ladrica, Steven, & Sylverna)**
  - Exploring the process of research engagement at multiple levels as a source of meaning making and healing from social injustice

- **Faculty Retreat (Full team)**
  - Practice what we preach – engaging in a healing conference
THANK YOU
Development of Online Course for High Performance Computing Best Practices

Prof. Nathan J. DeYonker
Department of Chemistry

ndyonker@memphis.edu / 678-2029

April 25th, 2019
CoRS funding

• 1-credit online course at 4000/6000 level
  – Ease the burden of training new students/faculty/staff to use HPC
  – Standardize practices of using resources on the HPC
  – More efficiently use HPC to collaborate and answer research questions

• 11 members of Community
  – Staff & Faculty in CAS/Engineering/Public Health/ITS
Outcomes

• Identified two graduate students who will lead construction of modules *(Need one more!)*
• Learning objectives are outlined
• Dialog started with Roy Bowery and Kate Sharpe at UM Global
  – Separating proprietary materials for students from staff/faculty training
  – eCourseware setup and instructional design assistance
• Piloting in Spring or Summer 2020
Team-Based Healthcare

CoRS Lightning Talks
Naomi Eichom, PhD, CCC-SLP
April 26, 2019
Broad Goal
Develop, implement and assess a framework for team-based healthcare and interprofessional education
Audiology
Debbie Moncrieff, PhD, CCC-A
School of CSD, UM

Education
Beverly Cross, PhD
College of Education, UM

Music
Jason Caplan
The Bridge Institute

Nursing
Shirleatha Lee, PhD., RN, CNE
LCON, UM

Optometry
Melissa Zarn, O.D.
Southern College of Optometry

Theater
Caroline Sposto
Savvy Civility

Public Health
Marian Levy, DrPH, RD, FAND
School of Public Health, UM

Speech-Language Pathology
Naomi Eichorn, PhD, CCC-SLP
School of CSD, UM
Progress: Pilot IPE Course

- Summer 2019
- Team-based activities
- Experiential learning
- “About, with, from” other professions
- Online and in-person activities
- Engagement with community
- Innovative application of Performing Arts
- Flexible framework, scalable
- Multiple assessments
- Multiple perspectives
- Pilot data for larger proposals
Thank you!
neichom@memphis.edu
Memphis Film and Music Collective

Bringing together filmmakers, musicians, and historians

Joel Roberts
Music Librarian
University of Memphis
• Website (www.memfilmmusic.org)
• **Promo video**
  – Produced by the Corporate/Promotional Video Production class (COMM 4222)
• Commissioned composer for promo video
• Upcoming film competition will encourage pairing filmmakers, student composers, and researchers by awarding small monetary prizes to be used for film production
University Schools
Research Consortium
Convener : Remy Debes, Philosophy
PEOPLE

• Sally Gates Parish – Associate Vice President Educational Initiatives
• Remy Debes (Philosophy)
• Stephanie Ivey (Engineering)
• Alfred Hall (College of Education)
• Ken Ward (Public Health)
• Deb Tollefsen (Philosophy)
• Jason Braasch (Psychology)
• Sarah Petschonek (Volunteer Odyssey)
• Brain Ruggaber (Theater and Dance)
• Lawrence Blackwell (Hattiloo Theater)
• Carolyn Kaldon (CREP)
• Chip Morrison (IIS)
• Wilson Waller (Building Box)
Sally Gates Parish (Educational Initiatives)

- Lipman Early Education
- Campus Elementary
- University Middle
- University High
University Schools: Home to the
UofM's Youngest Tigers

Laboratory Schools of the University of Memphis
University Middle School

Conducting Research within the Middle School

Thank you for your interest in conducting research at University Schools. To schedule an observation or visit to a University School, a service learning partnership, a course-based partnership, or an internship/volunteer experience, please contact the school directly. For research purposes, please adhere to the following procedural guidelines:

**Step 1: Register with the University Schools Research Consortium**

Complete the form below before proceeding to next steps.
What Next?

First
• Organize with school leadership (May)
• Brainstorm Grant Sources

Second
• Plan Major Networking Event for the Fall - To Grow Membership and Connect with Funding
• Begin Basic Data Collection
Water Safety Community

Dr. Maryam Salehi, Civil Eng.
Dr. Chunrong Jia Public Health
Dr. Larry Moore Civil Eng.
Dr. Paul Simone Chemistry Dep.
Dr. Shawn Brown Biological Sciences
Dr. Gary Emmert Chemistry Dep.
Dr. Larry Moore Civil Eng.
Zack Daniel, CDM Smith.

Microbiology
Risk Assessment
Water Quality
Industry
Analytical Chemistry
Analytical Chemistry
Wastewater
Mission: Create an interdisciplinary community and pursue novel engineering and scientific research related to the water chemical and microbial dynamics.

Aim to enhance water quality and protect the public health.

Proposals submitted:

(1) Salehi M, Brown S, Exploring Coupled Physical, Biological and Chemical Processes that Control Heavy Metals Fate and Transport through Plastic Plumbing Materials, Submitted to (NSF-CBET), March 2019