




DR. ABHIK ROY





EDUCATION

- 2016 • Western Michigan University
Ph.D. in Program Evaluation  Kalamazoo, MI
- Dissertation.* Building an Evaluation Model of Academic Advising's Impact on Progression, Persistence, and Retention Within University Settings
- 2007 • Michigan Technological University
M.S. in Mathematics  Houghton, MI
- Thesis.* Quotient Rings of the Eisenstein Integers
- 2001 • West Virginia Wesleyan College
B.S. in Mathematics  Buckhannon, WV
- Terminal Study.* 4-Cell Embedding on a n -genus Torus








PROFESSIONAL EXPERIENCE

- Current | 2016 • Assistant Professor
West Virginia University  Morgantown, WV
- Advising masters and doctoral level students. building Shiny apps and APIs within the R/RStudio environment.
 - Authoring and submitting papers to peer reviewed publications. • Developing enhanced and interactive surveys in Qualtrics using HTML, CSS, & Javascript.
 - Pulling data from multiple remote sources, constructing static, active, and interactive visualizations for production and/or embedding within reports, and • Evaluating various programs, projects, and grants.
 - Teaching evaluation and methods based classes with a focus on data science.
- 2016 | 2014 • Data Analyst
University of Kansas  Lawrence, KS
- Created web apps in Shiny and Tableau to pull, summarize, and visualize data from the organization's Oracle database. • Prepared evaluation reports for various stakeholders.
 - Led and presented findings from small and large scale qualitative, quantitative, and mixed-methods studies. • Researched and implemented predictive statistical models for student retention and graduation efforts.



WWW 

CONTACT INFORMATION

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-  iam.adasocialscientist.com
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-  0000-0002-7085-8964

EXPERTISE

Data visualization


Content, cluster, and social network analysis

Modeling using statistics and machine learning

Text mining

Planning and conducting program evaluations

Designing and administering small- and large-scale surveys

Programming and analysis in  with markup using *L^AT_EX*

App development and dynamic reporting using





SELECT PUBLICATIONS

- 2022 ● Thinking Processes in Code.org: A Relational Analysis Approach to Computational Thinking Computer Science Education
Computer Science Education
Kale, U., Yuan, J., & **Roy, A.** <https://doi.org/10.1080/08993408.2022.2145549>
- 2021 ● There's So Much to Do and Not Enough Time to Do It! A Case for Sentiment Analysis to Derive Meaning From Open Text Using Student Reflections of Engineering Activities.
American Journal of Evaluation, 42 (4), 559–576.
Roy, A., & Rambo-Hernandez, K.E. <https://doi.org/10.1177/1098214020962576>
- 2020 ● To design or to integrate? Instructional design versus technology integration in developing learning interventions.
Education Tech Research Dev 68, 2473–2504.
Kale, U., **Roy, A.** & Yuan, J. <https://doi.org/10.1007/s11423-020-09771-8>
- 2020 ● Using Interactive Theater to Promote Inclusive Behaviors in Teams for First-year Engineering Students: A Sustainable Approach.
Development of A Holistic Cross-Disciplinary Project Course Experience as a Research Platform for the Professional Formation of Engineers.
Dey, K.C., & Rahman, M.T., & Pyrialakou, V.D., & Martinelli, D., & Rambo-Hernandez, K.E., & Fraustino, J.D., & Deskins, J., & Plein, L.C., & **Roy, A.R.** <https://doi.org/10.18260/1-2--34446>
- 2018 ● General chemistry student attitudes and success with use of online homework: Traditional-Responsive versus Adaptive-Responsive.
Journal of Chemical Education, 95 (5), 691-699.
Richard-Babb, M., Curtis, R., Ratcliff, B., **Roy, A.R.**, & Mikalik, T. <https://doi.org/10.1021/acs.jchemed.7b00829>
- 2018 ● To go virtual or not to go virtual, that is the question: A comparative study of face-to-face versus virtual laboratories in a physical science course.
Journal of College Science Teaching, 48 (2), 59-67.
Miller, T.A., Carver, J.S., & **Roy, A.R.** <https://www.jstor.org/stable/26616271>
- 2014 ● Reasoning-and-proving in algebra: The case of two reform-oriented U.S. textbooks.
International Journal of Educational Research 64., 92-106
Davis, J.D., Smith, D.O., **Roy, A.R.**, & Bilgic, Y. K. <https://doi.org/10.1016/j.ijer.2013.06.012>
- 2012 ● What's in a Scriven number?
Journal of MultiDisciplinary Evaluation, 8 (19), 41-45.
Roy, A.R., Hobson, K.A., & Coryn, C.L.S. https://journals.sfu.ca/jmde/index.php/jmde_1/article/view/372/358



BOOK CHAPTERS

- 2014 ● Social network analysis: Finding meaning in connections.
Nova Science Publishers, Inc.
Roy, A.R. 978-1-53612-734-8



INVITED CONTRIBUTIONS


2012

- What is a Scriven number?
The American Evaluation Association Newsletter
Roy, A.R., Hobson, K.A., & Coryn, C.L.S.



ACTIVE GRANTS


2022

- ICU Compute for West Virginia: Empowering Future Teachers to Promote Critical Computational Thinking in Teaching Science
West Virginia University  Morgantown, WV
 - Implementing process and impact evaluations of program activities
 - Conducting quantitative text analysis of written and interview data using machine learning
 - Constructing and validating survey instruments used to assess progress and effect




INACTIVE GRANTS


2017
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2022

- WVCTSI: West Virginia Clinical and Translational Science Institute
West Virginia University  Morgantown, WV
 - Analyzing large data sets using frequentist and Bayesian methods.
 - Conducting local and multi-site multi-cluster evaluation studies.
 - Developing/validating items and distributing customized Qualtrics surveys built with CSS and Javascript.
 - Pulling, wrangling, and visualizing secondary data in R.
 - Mentoring future graduate social data scientists.
 - \$20,000,000
 - 2017-NIH 2U54GM104942-02


2020
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2021

- Appalachian Gerontology Experiences - Advancing Diversity in Aging Research
West Virginia University  Morgantown, WV
 - Developing and distributing customized Qualtrics surveys built with CSS and Javascript.
 - Performing various evaluative studies addressing program efficacy and engagement.
 - \$678,000
 - 2020-1R25AG059558-01A1

2020
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2022

- Research Initiative: A Holistic Cross-Disciplinary Project Experience as a Platform to Advance the Professional Formation of Engineers
West Virginia University  Morgantown, WV
 - Advising engineering faculty and graduate students on implementation of study methods.
 - Conducting quantitative and qualitative studies on undergraduate student experiences within grant related programs.
 - \$200,000
 - 2019-NSF-EEC 1927232

2018
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2017

- Stepping UP with Avenue: Progress Monitoring: A Software Suite Helping Teachers Improve Literacy Progress For Deaf/Hard Of Hearing Students
Pennsylvania State University  State College, PA
 - \$2,470,440
 - 2017-ED H327S170012

2018
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2017

● Cultivating Inclusive Identities of Engineers and Computer Scientists: Expanding Efforts to Infuse Inclusive Excellence in Undergraduate Curricula
West Virginia University
• \$2,000,000
• 2017-NSF 1725880

📍 Morgantown, WV

2020
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2017

● GAUSSI: Generating, Analyzing, and Understanding Sensory and Sequencing Information: A Trans-Disciplinary Graduate Training Program in Biosensing and Computational Biology
Colorado State University
• \$3,013,779
• 2017-NSF: NRT-DESE

📍 Fort Collins, CO

PRESENTATIONS

2022

● Let's Get Sentimental: Machine Learning Aided Data Analysis for Large Qualitative Data Sets
American Evaluation Association Annual Conference
Seidel, T. , Ferguson, C.F., & **Roy, A.R.**

📍 New Orleans, LA

2022

● Best of Both Worlds: Affordances of Mixing Machine Learning and Qualitative Content Analysis
American Educational Research Association Annual Meeting
Roy, A.R., Ferguson, C.F., Curtis, R., & Babb-Richards, M.

📍 San Diego, CA

2020

● These Aren't Random Words Just Strung Together?: Using Machine Learning and Pretty Visualizations to Discover Topics in Articles.
American Evaluation Association Annual Conference
Roy, A.R.

📍 virtual

2019

● Little Fish in a Big Pond, Only Fish in a Little Pond: How Roles Shape our Identities as Evaluators.
American Evaluation Association Annual Conference
M, Loomis, D.L., Mikalik, T.L., Curtis, R., **Roy, A.R.**, & Bernstein, M.

📍 Minneapolis, MN

2019

● Evolving Program Logic Models to Meet Shifting Program Needs: The Case of WV Clinical Translational Science Institute.
American Evaluation Association Annual Conference
Curtis, R., **Roy, A.R.**, Bernstein, M, Loomis, D.L., & Mikalik, T.L.

📍 Minneapolis, MN

2019

● The Value of External Evaluators When Building Clinical Translational Research Infrastructure.
American Evaluation Association Annual Conference
Curtis, R., **Roy, A.R.**, Bernstein, M, Loomis, D.L., & Mikalik, T.L.

📍 Minneapolis, MN

2019

● Using Associated Networks to Evaluate Content within Courses.
American Evaluation Association Annual Conference
Roy, A.R., Kale, U, & Yuan, J.

📍 Minneapolis, MN

2019

● Why Is It That Writers Write but Fingers Don't Fing? Using Machine Learning and Lexemes to Make Sense of Nonsense.
American Evaluation Association Annual Conference
Roy, A.R., Curtis, R., Mikalik, T.L., Loomis, D.L., & Bernstein, M.

📍 Minneapolis, MN

2019

● Discovering the Underlying Meaning Behind Get Me Off Your F***ing Mailing List? and Most Other Narratives.
American Evaluation Association Annual Conference
Roy, A.R., Curtis, R., Mikalik, T.L., Loomis, D.L., & Bernstein, M.

📍 Minneapolis, MN

- 2019 ● Assessing for Improvement: The Use of Artificial Intelligence to Uncover Potential Differential Impact of Assignments.
American Evaluation Association Annual Conference 📍 Toronto, CN
Roy, A.R. & Rambo-Hernandez, K.
- 2018 ● That's a Pretty Picture of Dots and Lines but What Does it Mean?: A Q&A Session with the Social Network Analysis TIG Leaders.
American Evaluation Association Annual Conference 📍 Cleveland, OH
Roy, A.R., Durland, M.M., Woodland, R., & Phillips, G.
- 2018 ● Navigating Buy-in and Shifting Evaluation Needs Over Time in NIH Clinical Translational Research Award.
American Evaluation Association Annual Conference 📍 Cleveland, OH
Curtis, R., & **Roy, A.R.**, Mikalik, T.L.
- 2018 ● Using a Mixed Methods Evaluation to Discover How an Interactive Theater Based Model Stimulates Inclusive Behaviors in Engineering.
American Evaluation Association Annual Conference 📍 Cleveland, OH
Roy, A.R., Rambo-Hernandez, K., Hensel, R.A., & Morris, M.L.
- 2018 ● Collaboration Evaluation: Using Social Network Analysis to Reveal an Active Undiscovered Network.
American Evaluation Association Annual Conference 📍 Cleveland, OH
Roy, A.R., Curtis, R., & Mikalik, T.L.
- 2018 ● Examining the Past and Looking Forward: The Future of Evaluation Theory and Use.
American Evaluation Association Annual Conference 📍 Cleveland, OH
Roy, A.R. & Hobson, K.A.
- 2017 ● Transforming Graduate STEM Education: A Theory-Driven Evaluation of the GAUSSI National Science Foundation Research Training (NRT) Program.
American Evaluation Association Annual Conference 📍 Washington, DC
Roy, A.R., Hernandez, P.A., Chen, T., & Paguyo, C.
- 2017 ● Program Evaluation for Everyone! - Constructing an Online Foundational Course for Capacity Building using Theorists as a Focus.
American Evaluation Association Annual Conference 📍 Washington, DC
Roy, A.R. & Curtis, R.P.
- 2017 ● Three Stages Down! Exploring the Criteria for the Next Generation of Evaluation Theorists through Social Network Analysis.
Hawaii-Pacific Evaluation Association Annual Conference 📍 Kane'ohe, HI
Roy, A.R. & Hobson, K.A.
- 2017 ● Content in the Background: Using Evaluation Theorists as the Principal Motivator for Foundational Evaluation Courses.
Hawaii-Pacific Evaluation Association Annual Conference 📍 Kane'ohe, HI
Roy, A.R. & Curtis, R.P.
- 2015 ● Survey Says! Students Getting Tired of Surveys.
National Academic Advising Association Annual Conference 📍 Las Vegas, NV
Roy, A.R. & Goetz, H.L.

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| 2013 | <ul style="list-style-type: none"> ● Influences of Hierarchical Linear Modeling in Evaluation.
<i>Aotearoa New Zealand Evaluation Association Annual Conference</i>
Roy, A.R. & Goetz, H.L. | <ul style="list-style-type: none"> 📍 Auckland, NZ |
| 2012 | <ul style="list-style-type: none"> ● Survey sample methods: Evaluators' toolbox refreshment.
<i>American Evaluation Association Annual Conference</i>
Roy, A.R. & Hobson, K.A. | <ul style="list-style-type: none"> 📍 Minneapolis, MN |



TEACHING EXPERIENCE IN EVALUATION AND METHODOLOGY (2016 -)

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| 2020

2018 | <ul style="list-style-type: none"> ● Data Visualization
West Virginia University
2020, 2018 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2017 | <ul style="list-style-type: none"> ● Educational Psychology
West Virginia University
2017 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2016 | <ul style="list-style-type: none"> ● Educational Research
West Virginia University | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2022

2016 | <ul style="list-style-type: none"> ● Introduction to Research
West Virginia University
2022, 2018, 2017, 2016 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2020

2018 | <ul style="list-style-type: none"> ● Measurement/Evaluation in Educational Psychology
West Virginia University
2022, 2020, 2018 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2019

2017 | <ul style="list-style-type: none"> ● Mixing Research Methodologies
West Virginia University
2022, 2019, 2018, 2017 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2022

2017 | <ul style="list-style-type: none"> ● Program Evaluation
West Virginia University
2022, 2021, 2020, 2019, 2018, 2017 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2021

2017 | <ul style="list-style-type: none"> ● Social Network Analysis
West Virginia University
2021, 2017 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2021

2017 | <ul style="list-style-type: none"> ● Statistical Methods 1
West Virginia University
2021, 2020, 2019, 2018, 2017 | <ul style="list-style-type: none"> 📍 Morgantown, WV |
| 2020

2022 | <ul style="list-style-type: none"> ● Survey Design
West Virginia University
2022, 2020 | <ul style="list-style-type: none"> 📍 Morgantown, WV |



TEACHING EXPERIENCE IN MATHEMATICS (2005 - 2015)

2008	● Business Calculus Central Michigan University	📍 Mount Pleasant, MI
2009	● College Algebra Central Michigan University	📍 Mount Pleasant, MI
2012	● Discrete Mathematics Pittsburgh State University	📍 Pittsburgh, KS
2014	● Elementary Statistics Pittsburgh State University	📍 Pittsburgh, KS
2010 2009	● Foundations of Statistics Pittsburgh State University 2009, 2010	📍 Pittsburgh, KS
2008 2007	● Intermediate Algebra Central Michigan University 2007, 2008	📍 Mount Pleasant, MI
2007	● Integral Calculus Michigan Technological University	📍 Houghton, MI
2015 2014	● Linear Algebra University of Kansas 2014, 2015	📍 Lawrence, KS
2013	● Mathematical Thinking Grades 6-12 Western Michigan University	📍 Kalamazoo, MI
2014 2013	● Mathematics Curriculum Grades 6-12 Western Michigan University 2013, 2014	📍 Kalamazoo, MI
2005	● Multivariable Calculus Michigan Technological University	📍 Houghton, MI
2007 2006	● Single Variable Calculus Michigan Technological University 2006, 2007	📍 Houghton, MI



SERVICE

2022 2013	● Associate Editor <i>Journal of MultiDisciplinary Evaluation</i>
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MEMBERSHIPS

2022 2012	● American Evaluation Association
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Made in  Source code

Last updated on December 22, 2022