




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
-  +1 304-554-9436
-  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

- 2023 ● Program Evaluation Standards for Utility Facilitate Stakeholder Internalization of Evaluative Thinking in the West Virginia Clinical Translational Science Institute
Journal of Multidisciplinary Evaluation
Curtis, R., **Roy, A.**, Lewis, N., Dooty, E. N., & Mikalik, T. https://journals.sfu.ca/jmde/index.php/jmde_1/article/view/831
- 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

- Teaching Science with Computational Thinking: Preparing Preservice Elementary Educators of the Future STEM Workforce
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
 - Total Amount: \$294,958.00




INACTIVE GRANTS


2022
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2017

- 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 mutli-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
|
2017

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

📍 State College, PA
- 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 📍 Minneapolis, MN
Roy, A.R., Curtis, R., Mikalik, T.L., Loomis, D.L., & Bernstein, M.
- 2019 ● Discovering the Underlying Meaning Behind Get Me Off Your F***ing Mailing List? and Most Other Narratives.
American Evaluation Association Annual Conference 📍 Minneapolis, MN
Roy, A.R., Curtis, R., Mikalik, T.L., Loomis, D.L., & Bernstein, M.
- 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	<ul style="list-style-type: none"> Content in the Background: Using Evaluation Theorists as the Principal Motivator for Foundational Evaluation Courses. <i>Hawaii-Pacific Evaluation Association Annual Conference</i> Roy, A.R. & Curtis, R.P. 	📍 Kane'ohe, HI
2015	<ul style="list-style-type: none"> Survey Says! Students Getting Tired of Surveys. <i>National Academic Advising Association Annual Conference</i> Roy, A.R. & Goetz, H.L. 	📍 Las Vegas, NV
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. 	📍 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. 	📍 Minneapolis, MN



TEACHING EXPERIENCE IN EVALUATION AND METHODOLOGY (2016 -)

2020 2018	<ul style="list-style-type: none"> Data Visualization West Virginia University 2020, 2018 	📍 Morgantown, WV
2017	<ul style="list-style-type: none"> Educational Psychology West Virginia University 2017 	📍 Morgantown, WV
2016	<ul style="list-style-type: none"> Educational Research West Virginia University 	📍 Morgantown, WV
2022 2016	<ul style="list-style-type: none"> Introduction to Research West Virginia University 2022, 2018, 2017, 2016 	📍 Morgantown, WV
2020 2018	<ul style="list-style-type: none"> Measurement/Evaluation in Educational Psychology West Virginia University 2022, 2020, 2018 	📍 Morgantown, WV
2019 2017	<ul style="list-style-type: none"> Mixing Research Methodologies West Virginia University 2022, 2019, 2018, 2017 	📍 Morgantown, WV
2022 2017	<ul style="list-style-type: none"> Program Evaluation West Virginia University 2022, 2021, 2020, 2019, 2018, 2017 	📍 Morgantown, WV
2021 2017	<ul style="list-style-type: none"> Social Network Analysis West Virginia University 2021, 2017 	📍 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	<ul style="list-style-type: none"> Business Calculus Central Michigan University 	<ul style="list-style-type: none"> Mount Pleasant, MI
2009	<ul style="list-style-type: none"> College Algebra Central Michigan University 	<ul style="list-style-type: none"> Mount Pleasant, MI
2012	<ul style="list-style-type: none"> Discrete Mathematics Pittsburgh State University 	<ul style="list-style-type: none"> Pittsburgh, KS
2014	<ul style="list-style-type: none"> Elementary Statistics Pittsburgh State University 	<ul style="list-style-type: none"> Pittsburgh, KS
2010 2009	<ul style="list-style-type: none"> Foundations of Statistics Pittsburgh State University 2009, 2010 	<ul style="list-style-type: none"> Pittsburgh, KS
2008 2007	<ul style="list-style-type: none"> Intermediate Algebra Central Michigan University 2007, 2008 	<ul style="list-style-type: none"> Mount Pleasant, MI
2007	<ul style="list-style-type: none"> Integral Calculus Michigan Technological University 	<ul style="list-style-type: none"> Houghton, MI
2015 2014	<ul style="list-style-type: none"> Linear Algebra University of Kansas 2014, 2015 	<ul style="list-style-type: none"> Lawrence, KS
2013	<ul style="list-style-type: none"> Mathematical Thinking Grades 6-12 Western Michigan University 	<ul style="list-style-type: none"> Kalamazoo, MI
2014 2013	<ul style="list-style-type: none"> Mathematics Curriculum Grades 6-12 Western Michigan University 2013, 2014 	<ul style="list-style-type: none"> Kalamazoo, MI
2005	<ul style="list-style-type: none"> Multivariable Calculus Michigan Technological University 	<ul style="list-style-type: none"> Houghton, MI
2007 2006	<ul style="list-style-type: none"> Single Variable Calculus Michigan Technological University 2006, 2007 	<ul style="list-style-type: none"> Houghton, MI

SERVICE

2022
|
2013

● Associate Editor
Journal of MultiDisciplinary Evaluation

MEMBERSHIPS

2022
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2012

● American Evaluation Association