





DR. ABHIK ROY

EDUCATION


- 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
- Michigan Technological University
M.S. in Mathematics  Houghton, MI
Thesis. Quotient Rings of the Eisenstein Integers
- West Virginia Wesleyan College
B.S. in Mathematics  Buckhannon, WV
Terminal Study. 4-Cell Embedding on a n -genus Torus

PROFESSIONAL EXPERIENCE

2023
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2016

- Assistant Professor
West Virginia University  Morgantown, WV
 - Contributed to peer-reviewed publications by authoring and submitting scholarly papers.
 - Conducted rigorous evaluations of a variety of programs, projects, and grants, contributing to their optimization and effectiveness.
 - Designed and implemented dynamic and interactive surveys using HTML, CSS, and JavaScript in the Qualtrics platform.
 - Extracted, wrangled, and cleaned data from various remote sources; developed a range of visualizations from static to interactive for report embedding or dissemination, and built web apps in Shiny all within R/RStudio.
 - Instructed classes in evaluation, measurement, and research methods, emphasizing the application of data science techniques.
 - Mentored Masters and Doctoral students, guiding their academic pursuits and research activities.

2016
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2014

- Data Analyst
University of Kansas  Lawrence, KS
 - Authored detailed evaluation reports, catering to the requirements of diverse stakeholders.
 - Conducted research and deployed predictive statistical models aimed at enhancing student retention and graduation efforts.
 - Developed web applications using Shiny and Tableau, facilitating extraction, summarization, and visualization of data from the organization's Oracle database.
 - Spearheaded and delivered presentations on findings from comprehensive qualitative, quantitative, and mixed-methods studies, both large and small.



WWW 

CONTACT INFORMATION

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- github.com/drabhikroy
- iam.adasocialscientist.com
- +1 304-554-9436
- ID 0000-0002-7085-8964

EXPERTISE


Content, cluster, and social network analysis

Data visualization

Designing and administering small- and large-scale surveys

Modeling and analysis using statistics and machine learning

Planning and conducting program evaluations

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

Quantitative, qualitative, and mixed method designs and analyses

Web app development and static/dynamic reporting using





SELECT PUBLICATIONS

- 2023 ● Is it accessible? Preservice teachers' access to computational thinking.
Contemporary Issues in Technology and Teacher Education
Kale U., Kookan, A., Yuan, J., & **Roy, A.** (accepted)
- 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://peer.asee.org/29592>
- 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://doi.org/10.56645/jmde.v8i19.372>



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 EVALUATIONS

Current
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2023

- Healthy Start Initiative
West Virginia University Research Corporation 📍 Morgantown, WV
 - *Lead Program Evaluator & Methodologist*
 - Building valid and reliable survey instruments to assess participant experiences.
 - Implementing process, monitoring, and impact evaluations of programmatic activities.
 - Utilizing mixed methods designs to study participant data.
 - Total Award: \$5,470,000
 - [HRSA-19-049](#)

Current
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2022

- Teaching Science with Computational Thinking: Preparing Preservice Elementary Educators of the Future STEM Workforce
West Virginia University 📍 Morgantown, WV
 - *Lead Program Evaluator & Mixed Methods Analyst*
 - Applying mixed methods text analysis of written and interview data using thematic analysis and various machine learning methods.
 - Constructing and validating survey instruments used to assess progress and programmatic impact.
 - Implementing process and impact evaluations of program activities.
 - Total Award: \$294,958.00
 - [2019-NSF 2142274](#)



COMPLETED EVALUATIONS

2022
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2017

- WVCTSI: West Virginia Clinical and Translational Science Institute
West Virginia University 📍 Morgantown, WV
 - *Program Evaluator & Data Scientist*
 - Analyzed large data sets using frequentist and Bayesian methods.
 - Conducted local and multi-site multi-cluster evaluation studies.
 - Developed/validated items and distributing customized Qualtrics surveys built with CSS and Javascript.
 - Mentored future graduate social data scientists.
 - Pulled, wrangled, and visualized secondary data
 - Total Award: \$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
 - *Lead Program Evaluator*
 - Developed and distributing customized Qualtrics surveys built with CSS and Javascript.
 - Performed various evaluative studies addressing program efficacy and engagement.
 - Total Award: \$678,000 -[2020-NIH 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
 - *Methodological Advisor & Research Specialist*
 - Mentored engineering faculty and graduate students on the implementation of research methods.
 - Conducted quantitative and qualitative studies on undergraduate student experiences within grant related programs.
 - Total Award: \$200,000
 - [2019-NSF 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
 - *Lead Program Evaluator*
 - Administered product and program evaluations of existing tools and activities.
 - Total Award: \$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 📍 Morgantown, WV
 - *Lead Program Evaluator*
 - Conducted personnel and program evaluations of existing members and interventions.
 - Created and implemented various text analysis methods.
 - Total Award: \$2,000,000
 - [2017-NSF 1725880](#)
- 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 📍 Fort Collins, CO
 - *Lead Program Evaluator*
 - Conducted unstructured and semi-structured interviews and focus groups assessing participant experiences.
 - Implemented mixed methods evaluations to study program impacts on students and faculty.
 - Total Award: \$3,013,779
 - [2017-NSF 1450032](#)



PRESENTATIONS

- 2022
- Let's Get Sentimental: Machine Learning Aided Data Analysis for Large Qualitative Data Sets
American Evaluation Association Annual Conference 📍 New Orleans, LA
Seidel, T. , Ferguson, C.F., & **Roy, A.R.**

- 2022 ● Best of Both Worlds: Affordances of Mixing Machine Learning and Qualitative Content Analysis
American Educational Research Association Annual Meeting 📍 San Diego, CA
Roy, A.R., Ferguson, C.F., Curtis, R., & Babb-Richards, M.
- 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 📍 virtual
Roy, A.R.
- 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 📍 Minneapolis, MN
M, Loomis, D.L., Mikalik, T.L., Curtis, R., **Roy, A.R.**, & Bernstein, M.
- 2019 ● Evolving Program Logic Models to Meet Shifting Program Needs: The Case of WV Clinical Translational Science Institute.
American Evaluation Association Annual Conference 📍 Minneapolis, MN
Curtis, R., **Roy, A.R.**, Bernstein, M, Loomis, D.L., & Mikalik, T.L.
- 2019 ● The Value of External Evaluators When Building Clinical Translational Research Infrastructure.
American Evaluation Association Annual Conference 📍 Minneapolis, MN
Curtis, R., **Roy, A.R.**, Bernstein, M, Loomis, D.L., & Mikalik, T.L.
- 2019 ● Using Associated Networks to Evaluate Content within Courses.
American Evaluation Association Annual Conference 📍 Minneapolis, MN
Roy, A.R., Kale, U, & Yuan, J.
- 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
Roy, A.R., Curtis, R., & Mikalik, T.L.

📍 Cleveland, OH
- 2018

● Examining the Past and Looking Forward: The Future of Evaluation Theory and Use.
American Evaluation Association Annual Conference
Roy, A.R. & Hobson, K.A.

📍 Cleveland, OH
- 2017

● Transforming Graduate STEM Education: A Theory-Driven Evaluation of the GAUSSI National Science Foundation Research Training (NRT) Program.
American Evaluation Association Annual Conference
Roy, A.R., Hernandez, P.A., Chen, T., & Paguyo, C.

📍 Washington, DC
- 2017

● Program Evaluation for Everyone! - Constructing an Online Foundational Course for Capacity Building using Theorists as a Focus.
American Evaluation Association Annual Conference
Roy, A.R. & Curtis, R.P.

📍 Washington, DC
- 2017

● Three Stages Down! Exploring the Criteria for the Next Generation of Evaluation Theorists through Social Network Analysis.
Hawaii-Pacific Evaluation Association Annual Conference
Roy, A.R. & Hobson, K.A.

📍 Kane'ohe, HI
- 2017

● Content in the Background: Using Evaluation Theorists as the Principal Motivator for Foundational Evaluation Courses.
Hawaii-Pacific Evaluation Association Annual Conference
Roy, A.R. & Curtis, R.P.

📍 Kane'ohe, HI
- 2015

● Survey Says! Students Getting Tired of Surveys.
National Academic Advising Association Annual Conference
Roy, A.R. & Goetz, H.L.

📍 Las Vegas, NV
- 2013

● Influences of Hierarchical Linear Modeling in Evaluation.
Aotearoa New Zealand Evaluation Association Annual Conference
Roy, A.R. & Goetz, H.L.

📍 Auckland, NZ
- 2012

● Survey sample methods: Evaluators' toolbox refreshment.
American Evaluation Association Annual Conference
Roy, A.R. & Hobson, K.A.

📍 Minneapolis, MN



TEACHING EXPERIENCE IN EVALUATION AND METHODOLOGY (2016 - 2023)

- 2020
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2018

● Data Visualization
 West Virginia University
 2020, 2018

📍 Morgantown, WV
- 2017

● Educational Psychology
 West Virginia University
 2017

📍 Morgantown, WV

2016	● Educational Research West Virginia University 2016	📍 Morgantown, WV
2022 2016	● Introduction to Research West Virginia University 2022, 2018, 2017, 2016	📍 Morgantown, WV
2020 2018	● Measurement/Evaluation in Educational Psychology West Virginia University 2022, 2020, 2018	📍 Morgantown, WV
2019 2017	● Mixing Research Methodologies West Virginia University 2022, 2019, 2018, 2017	📍 Morgantown, WV
2023 2017	● Program Evaluation West Virginia University 2023, 2022, 2021, 2020, 2019, 2018, 2017	📍 Morgantown, WV
2021 2017	● Social Network Analysis West Virginia University 2021, 2017	📍 Morgantown, WV
2021 2017	● Statistical Methods 1 West Virginia University 2021, 2020, 2019, 2018, 2017	📍 Morgantown, WV
2020 2022	● Survey Design West Virginia University 2022, 2020	📍 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	<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	<ul style="list-style-type: none"> Associate Editor <i>Journal of MultiDisciplinary Evaluation</i>
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MEMBERSHIPS

2022 2012	<ul style="list-style-type: none"> American Evaluation Association
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