ISAAC B. MICHAEL

isaac.b.michael@gmail.com 254-366-6861 isaacbmichael isaacbmichael.com Marietta, GA

EXECUTIVE PROFILE

__Program and Analytics leader__ with a record of modernizing data-heavy services, standardizing delivery, and guiding teams through clear, reproducible methods. I build operating models, governance, and automation that reduce cycle time, improve accuracy, and scale services reliably across jurisdictions. My work spans national public-health programs, university initiatives, and consulting—aligning technical design with finance, compliance, and operations to deliver dependable, audit-ready results.

STRATEGIC IMPACT

- **National Weighting & Delivery (CDC)**: Co-led **national weighting and delivery for the Pregnancy Risk Assessment Monitoring System (PRAMS)** across 50 jurisdictions (81% of U.S. births); standardized methods, automated QA/validation, and raised reproducibility and cycle time nationwide, improving consistency across states.
- **Program Expansion & Digital Modernization (LSU)**: Transformed the Virtual Math Research Circle (VMRC) into a **year-round program**—rebuilding the website and application systems, creating automated certificate generation and public archives, and scaling mentor teams, research tracks, and student outputs across annual cohorts.
- **Systems Modernization & Automation (CDC)**: Designed and deployed a **modular, automated analytics infrastructure**—integrating SAS/SQL workflows; adding parity checks, exception handling, and comprehensive QA diagnostics; and enabling consistent, **reproducible, audit-ready** weighting and reporting at scale.
- **International Partnerships & Revenue Model (LSU)**: Developed an **international growth model** for VMRC—negotiating a Zhejiang **Memorandum of Understanding**, designing a **profit-sharing framework**, and leading large-scale outreach (100k-contact negotiations, segmentation, and recruiting) to expand global participation.

EXPERIENCE

2023–Present **Centers for Disease Control and Prevention**

Mathematical Statistician, Division of Reproductive Health — Atlanta, GA

Summary: Senior service-operations lead for PRAMS (**50 jurisdictions**, **81% of U.S. births**). Co-led national delivery and modernization for the 2022–2023 cohorts—strengthening reproducibility, automating end-to-end quality checks, and improving the clarity, reliability, and turnaround time of weighting outputs used by federal and state partners for decision making and planning.

- **Nationwide delivery & modernization:** Directed cross-jurisdiction PRAMS weighting—coordinating schedules, standards, and intake/response management to improve consistency across sites.
- **Quality systems & statistical verification:** Designed verification procedures to detect stratification issues, duplicate records, and misaligned weighting variables; authored clear, audit-ready documentation to guide program staff and future analysts and strengthen long-term reproducibility.
- **Automation & workflow resilience:** Transitioned manual review steps into structured analytics pipelines with parity checks, exception handling, and systematic diagnostics—reducing rework and improving dependability and clarity during time-sensitive releases.
- **Statistical modeling support:** Supported research teams through the Statistics Advisory Group, providing methodological guidance on structural equation modeling, generalized regression approaches (including ridge/lasso), logistic and log-linear modeling, and introductory machine-learning tools for public-health data (e.g., random forests and cross-validation).
- **Technical review & reproducibility:** Conducted code and methods review for internal and partner-state analyses, ensuring statistical assumptions were met and outputs were reproducible, well-documented, clearly justified, and aligned with national program standards.
- **Stakeholder training & field support:** Delivered national briefings on weighting and data-quality practices; supported onsite visits to resolve issues and train teams with standardized guidance.

2019–Present **Louisiana State University**

Program Director, Gordon A. Cain Center for STEM Literacy (2020–Present) — Baton Rouge, LA / Atlanta, GA

Summary: Directed academic services and research programs for the Virtual Math Research Circle (VMRC) and related STEM initiatives. Built and scaled a repeatable service model—operations, pricing, staffing, and quality governance—and partnered with instructional teams to strengthen student outcomes, instructional quality, and overall program delivery across multiple cohorts.

- **Funding, Budget & Governance:** Secured AMS Epsilon grants (2022–2025) and integrated them with tuition to sustain VMRC; governed student-support funds with **100% on-time disbursement**; implemented documentation standards, quarterly reviews, and compliance reporting.
- **Financial & HR:** Managed stipends/payroll with LSU HR; drafted role descriptions; ran hiring and onboarding for mentors and instructors; maintained continuity, equity, and compliance in staffing.
- **Digital Systems & Automation:** Rebuilt the VMRC website and modernized Formstack into an evergreen system; automated certificates and archives; improved accessibility and overall consistency.
- **Capacity & Planning:** Built intake forecasting, staffing models, and skills-based routing to balance instructor load; standardized readiness, materials reviews, and section preparation across cohorts.
- **Leadership & Delivery Scale:** Supervised **18+ research mentors** and supported **116 students** (2022–2025); established a lead-mentor structure and regular cadences (standups, retrospectives, quality checks) to strengthen execution and cross-team knowledge sharing.
- **Analytics & Reporting:** Built an applicant-insights pipeline (harmonized schema, deduplication, QA, NCES/Census enrichment) generating demographic and geographic analyses for planning/outreach.
- **International Outreach & Partnerships:** Organized large-scale outreach and segmented communications (100k-contact negotiations and email campaigns); provided operational support for an international Memorandum of Understanding to expand participation.
- **New Program Development:** Designed and launched a parallel online research pathway for HBCU undergraduates, expanding access and creating new academic partnerships.

Head Supervisor, College of Engineering (2020–Present, Seasonal) Baton Rouge, LA / Atlanta, GA

Summary: Lead summer operations for LSU's Bridge to Engineering Excellence (BEE) math program—staffing and training GAs, directing curriculum and schedules, and managing ed-tech/vendor readiness. Standardized workflows and grading and automated delivery to scale quality across sections.

- **Scale & Delivery (2025):** Directed five sections serving 156 students and implemented a program-wide dual grading system to ensure fairness and cross-section comparability across cohorts.
- **Learning Impact (2025):** Achieved pre->post gain **+28.56** points; **96%** of students improved.
- **Operations & Enablement:** Supervised/trained GAs; standardized SOPs, pacing, grading; automated reporting/QA with vendor integrations (SSO, access), improving visibility and audit readiness.

Postdoctoral Researcher, Department of Mathematics (2019-2022) Baton Rouge, LA

Summary: Led research in differential equations and operator theory; collaborated internationally; mentored graduate students and taught mathematical statistics, with peer-reviewed publications.

- **Research outputs:** Produced peer-reviewed publications in differential equations/operator theory; contributed to proposals and collaborations that advanced funded research directions.

2022–2023 **U.S. Census Bureau**

Mathematical Statistician, Decennial Statistical Studies Division Baton Rouge, LA

Summary: Supported national survey operations and analytics for decennial programs—advancing undercount measurement, migration analyses, and methodological review. Improved pipelines (SQL/Redshift), rigorous quality controls, and formal documentation, strengthening population insights.

- **Undercount & Mobility Analytics:** Analyzed differential undercount and COVID-era migration patterns; built reproducible models and monitoring artifacts to improve accuracy in estimates.
- **Data Engineering & Method Review:** Optimized ETL pipelines in SQL/Redshift and expanded QA checks; reviewed publications for methodological soundness and standards compliance.

TECHNICAL SKILLS

Data & Automation

SAS; SAS Macros; R; Python; SQL; R Markdown; scikit-learn; TensorFlow; Git; GitHub; GitHub Actions; Docker

Methods & Governance

Survey sampling and weighting (complex designs); nonresponse bias; QA automation; KPI scorecards; SLAs and runbooks with escalation paths

Cloud & Analytics

Google Cloud Platform (BigQuery); Amazon Redshift; Tableau; Microsoft Power BI (basic)

EDUCATION

2023 **Master of Applied Statistics,** Louisiana State University Baton Rouge, LA

2019 **Doctor of Philosophy in Mathematics,** Baylor University Waco, TX

2015 **Master of Science in Mathematics,** Baylor University Waco, TX

2013 **Bachelor of Science in Mathematics,** Tarleton State University Stephenville, TX