



# Josephine Simpson

## Geophysics Senior Research Fellow

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### SUMMARY

Accomplished Geophysics researcher with over 6 years experience specializing in Electrical Resistivity Tomography (ERT) and Spectral Induced Polarization (SIP). Proven ability to lead trailblazing research focused on subsurface imaging technologies that promote environmental sustainability and resource management. Skilled in fostering collaborations across disciplines while mentoring researchers, students, and staff. Created impactful methodologies for data interpretation and developed innovative solutions to address pressing challenges in hydrological and energy-related studies. Eager to leverage expertise and passion to advance strategic geophysical initiatives.

### EXPERIENCE

#### Geophysics Research Scientist

Geophysical Research Institute 📅 March 2023 - Present 📍 Nashville, TN

Oversee leading-edge research in Electrical Resistivity Tomography (ERT) and Spectral Induced Polarization (SIP), driving advancements in subsurface characterization techniques.

- Spearheaded research initiatives improving methodologies for ERT and SIP, enhancing data accuracy.
- Designed and executed field investigations utilizing multi-electrode resistivity systems, leading to remarkable advancements in subsurface characterization.
- Developed novel forward and inverse modeling frameworks to quantify subsurface properties, significantly reducing interpretation uncertainties.
- Published findings in top-tier peer-reviewed journals and presented at international conferences, contributing meaningfully to global geophysical research.
- Mentored junior researchers and graduate students, creating a strong collaborative atmosphere and bolstering team effectiveness.
- Engaged with diverse stakeholders to identify research needs and communicate findings effectively, supporting informed decision-making.

#### Senior Geophysical Analyst

Environmental Research Center 📅 June 2019 - February 2023 📍 Austin, TX

Led multiple inter-disciplinary projects aimed at integrating geophysical data with hydrological datasets, enhancing understanding of complex environmental issues.

- Directed cross-functional teams in developing innovative solutions for legacy waste management and restoration projects.
- Played pivotal role in crafting successful grant proposals, securing funding for multiple impactful research endeavors.
- Maintained compliance with safety, quality control standards during field operations , thereby increasing overall project efficiency.
- Created educational materials and held workshops for stakeholders, building awareness of geophysical methods.
- Consistently recognized for exceptional contributions to research outcomes and team development through various awards.
- Fostered relationships with external sponsors and collaborators, ensuring alignment with project objectives.

#### Research Assistant

Geoscience Innovations Lab 📅 August 2016 - May 2019 📍 Charleston, SC

Contributed significantly as part of dynamic team focused on advancing subsurface imaging methodologies and enhancing dataset reliability.

- Supported the development and execution of innovative techniques for subsurface imaging via ERT and SIP, influencing research publications.

### STRENGTHS

- 💡 **Innovative Researcher**  
Proven ability to develop new methodologies that enhance understanding of subsurface processes.
- 👥 **Collaborative Leader**  
Foster an environment where teamwork thrives, empowering peers to achieve collective goals.
- 🎓 **Technical Mentor**  
Passionately train and guide junior researchers, uplifting their skills and confidence.
- 💰 **Funding Strategist**  
Successfully secure financial backing for significant research initiatives through grants and sponsorships.
- 🗣️ **Effective Communicator**  
Translate complex scientific findings into actionable insights for a diverse audience.

### SKILLS

Electrical Resistivity Tomography (ERT)

Spectral Induced Polarization (SIP)

Data Analysis   Field Investigations

Cross-Disciplinary Collaboration

Research Mentorship

Proposal Development

Geophysical Modeling

Technology Integration

Uncertainty Quantification

Statistical Methods

Team Leadership

Scientific Communication

Methodology Development

Environmental Stewardship

## LANGUAGES

English Native

Spanish Proficient

## MY CAREER



- Geophysics Research Scientist at Geophysical Research Institute (3.4 Years)
- Senior Geophysical Analyst at Environmental Research Center (3.7 Years)
- Research Assistant at Geoscience Innovations Lab (2.8 Years)

- Conducted meticulous field data collection and analysis resulting in high-quality data assets for ongoing research.
- Collaborated closely with faculty and graduate colleagues on diverse multidisciplinary projects enhancing collective capabilities.
- Assisted in preparing compelling research proposals, directly leading to increased funding opportunities.
- Activated community outreach initiatives aimed at promoting the relevance of geophysical research applications.
- Earned recognition for impact at student-led research conferences outside usual expectations.

## LEADERSHIP & AWARDS

- Outstanding Research Award, Environmental Research Center - 2021
- Best Paper Presentation, International Geophysics Conference - 2020

## EDUCATION

### Master's Degree in Geophysics

University of Georgia 🎓 GPA: 3.8 📅 2016 📍 Athens, GA

**Coursework:** *Environmental Geophysics, Geophysical Modeling, Data Analysis, Field Methods*

## CERTIFICATIONS

- Certified Professional Geophysicist (CPG) 📅 2023

## TECHNICAL SKILLS

- **Data Analysis Tools:** MATLAB, Python, R
- **Geophysical Survey Equipment:** RESISTIVITY, Geoscan, INDUCED POLARIZATION
- **Modeling Software:** COMSOL Multiphysics, MATLAB, ArcGIS
- **Field Survey Techniques:** Ground Penetrating Radar, Electromagnetic Surveys, Seismic Surveys
- **Research Platforms:** Publications, Conferences, Seminars
- **Proposal Writing Skills:** Grant Proposals, Scientific Foundations, Research Applications
- **Intellectual Property Management:** Patents, Research Papers, Technological Innovations
- **Statistical Analysis Tools:** SPSS, SAS, Excel
- **Integration Frameworks:** Layered Algorithms, Cross-Platform Standards, Interoperability Concepts
- **Compliance Protocols:** Safety Guidelines, Quality Assurance, Regulatory Affairs

## PROFESSIONAL AFFILIATIONS

- Member, American Geophysical Union
- Volunteer, Local Science Education Program

## ADDITIONAL INFORMATION

**Work Status** : Authorized to work in United States. No sponsorship required.

## REFERENCES

AVAILABLE ON REQUEST