Kansas Geological Survey (KGS)
University of Kansas
Lawrence, Kansas

POSITION ANNOUNCEMENT

POSITION TITLE: Electrical Engineer

KU TITLE: Research Engineer

APPLICATION DEADLINE: Review begins August 15, 2022, and will continue until a qualified pool of candidates is received.

TENTATIVE START DATE: September 18, 2022, exact start date is negotiable.

SALARY, EMPLOYMENT STATUS, AND FRINGE BENEFITS: Full-time position with benefits, subject to a six-month probation and annual performance reviews. Salary is $75,000 ($36.05 per hour) or higher, commensurate with qualifications and experience.

KU offers great benefits to employees with up to 22 days of paid vacation earned per year, 12 days of sick leave earned per year, 9 paid holidays plus one discretionary day, a retirement program, medical & dental insurance, life and disability insurance, other benefit plan options, and State of Kansas discounts offered by various vendors. KU also offers employees educational and professional development opportunities. KU is a great place to work! The University actively encourages applications from members of underrepresented groups.

POSITION OVERVIEW:

Using an engineering approach, the Electrical Engineer in this unique position will test, maintain, refine, design, build, troubleshoot, and ready advanced equipment and associated components for field data acquisition. This position will have the freedom to conceive, design, and build hardware and software supporting data acquisition for a wide range of geologic and hydrologic applications. The Electrical Engineer provides a leadership role in training on the proper use and handling of equipment. This person will troubleshoot electronic equipment, often in a field environment, and repair or implement replacement options. This position is provided opportunities to advise and brainstorm with internationally recognized experts during the conception and development of advanced sensing and recording systems.

The ideal candidate will be more gratified in solving a problem with a circuit and custom algorithm than deriving a differential equation. They'll be a person who can map a path from the need to the goal, even if it means using 'black-tape and baling wire' to get there.

Keeping current with technology and networking is vital for personal and professional growth. This engineering position will be provided opportunities to travel to professional society conventions/meetings and engage in a range of professional service functions. Travel across the US to some of the most unique and out of the way places in support of field research has been an option for this position for decades now and it will continue to be well into the future. Working with US Government scientists routinely involves cutting edge work on sensitive data from locations rarely seen by the general public. This is not your run-of-the-mill electrical engineering position. Every day provides challenges and satisfaction with incredible freedom to explore and conceive using skills developed in the classroom.

GEOPHYSICS PROGRAM AND EXPLORATION SERVICES: The Kansas Geological Survey (KGS) Geophysics Program and Exploration Services develop and use several investigative methods to provide information about the subsurface,

using both invasive and non-invasive approaches with a focus on higher resolution and accuracy while reducing cost.

The services provide drilling in support of water, energy, and basic subsurface research. It also runs a program designed to monitor changes and identify regional trends in the High Plains, Dakota, and alluvial aquifers, measuring about 1,380 wells in 47 central and western Kansas counties. As well, the ES section is responsible for installation, maintenance, and collection of data from earthquake recording stations in Kansas—both permanent stations and several temporary networks—to detect and analyze seismic activity.

For more information about the KGS visit our website: http://www.kgs.ku.edu.

RESPONSIBILITIES:

40% Participates in research planning and development for a wide range of projects and programs using engineering background and expertise to determine optimum electronic systems and/or devices for purchase, to design, or construction, based on project goals. Projects/programs include but not limited to seismic, GPR, drilling, water-level, earthquake, land surveying, and logging as well as other KGS section as need for expertise arises. Responsibility for all section computers, plotters, and printers (purchasing, setup, and updates); with additional oversight of KGS cell phones.

20% Conceives, designs, and implements microcomputer/microcontroller systems/software as well as electronic and mechan-ical devices for the testing of advanced geophysical data acquisition and processing research. Help eval-uate commercially available seismic instruments/components based on literature, laboratory, and field testing, fitness for KGS geophysical research, and deter-mination of potential design flaws. Participates in development, pre-planning, and excursions as necessary to ensure electronic readiness for seismic research projects. Programming to manage data formats. Monitors and evaluates overall fitness of seismic hardware and software for rapid deployment.

20% Acting as an electronics specialist, evaluate and compare, often without the aid of schematics or other published technical information, expected versus actual performance of a variety of specialized electronic and mechanical devices. Apply-ing electronic/engineering principles in the formulation and implementation of a solution that may involve repairing, rebuilding, redesigning, or discarding the equipment. Independently investigates and determines appropriate solutions to problems with KGS electronic equip-ment. Troubleshoot complex electronic systems, correct system problems, or recommend options. Design, build, and implement specialized electronic components for a wide range of applications.

10% Principle oversight and facilitator in preparing, updating, delivering, and retrieving electronic field systems for KGS and collaborators working on annual water-level measurement program. Programming and revising of specialized software for android devices. Options to perform as a field-member of the annual water-level measurement program. Responsible for educating on the proper operation of all guidance and data logging hardware and software systems used by several state agencies. Assist in troubleshooting and resolving any issues arising from electronic systems. Responsible for preliminary analysis and safeguarding the accuracy of annual water level measurements.

10% Participate with data recording, transfer operations, and data management of both temporary and permanent Kansas earthquake network. Instruct and monitor earthquake technician on proper maintenance and installation of hardware at remote field locations. Field oversight will be necessary in cases where remote interaction is not providing the 100% operational efficiencies.

REQUIRED QUALIFICATIONS:

1. B.S. in Electrical/Computer Engineering plus 1 year of relevant experience OR Associate's degree in electrical engineering technology with 3 years of relevant experience.
2. Demonstrated experience with diagnosing/troubleshooting electronic equipment malfunctions and successful repair as evidenced by application material.
3. Developed hardware, software, and/or firmware products as evidenced by application material.

POSITION REQUIREMENTS:

1. Valid driver's license.
2. Occasional travel around ten days at a time, averaging 25-30 days per year.
3. Work outdoors in challenging conditions for periods of several days.
4. Lift and move up to 30 pounds short distances with or without accommodation.
5. Work independently and make decisions with remote guidance.

PREFERRED QUALIFICATIONS:

1. Demonstrated experience programming in C, C++, and Visual Basic.
2. Knowledge of DGPS/RTK systems and data protocols.
3. Experience with field based telemetered data systems.
4. Seismic acquisition systems field experience.
5. Familiarity with programming apps on android devices.

APPLICATION PROCEDURE:

Apply online only at https://employment.ku.edu/staff/22613BR. Complete the University of Kansas Unclassified Professional Staff profile and upload the required material:

1. Cover letter- address each required and preferred qualification and each position requirement.
2. Resume.
3. Contact information for two or more work references. Provide relationship to the references.

Review begins August 15, 2022, and will continue until a qualified pool of applicants is received. For best consideration apply by the review date above.

CONTACT INFORMATION:

Annette Delaney, Kansas Geological Survey, University of Kansas, adelaney@ku.edu or 785-864-2152.

KANSAS GEOLOGICAL SURVEY: The Kansas Geological Survey (KGS) is a research and service division of the University of Kansas that investigates and provides information about the state's geologic and groundwater resources. The KGS has no regulatory authority and does not take positions on natural resource issues.

KGS scientists pursue research related to surface and subsurface geology, energy resources, groundwater, and environmental hazards. They develop innovative tools and techniques, monitor earthquakes and groundwater levels, investigate water-quality concerns, and map the state's surface geology. Their analyses, findings, and data are shared with the scientific community and general public through publications, online resources, and presentations. The KGS also houses thousands of oil and gas and water well records filed with the state over several decades as well as thousands of rock cores and cuttings brought to Earth's surface during oil and gas drilling.

The main headquarters of the KGS is in Lawrence on the west campus of the University of Kansas, and the KGS Well Sample Library is in Wichita. Between the two locations, the KGS has a staff of approximately 125 employees, including 35 student employees. The KGS reports to the Vice Chancellor for Research at the University of Kansas and has a 12-member advisory council to provide review and guidance.

More...

LAWRENCE: A city of approximately 95,000, Lawrence is located on a rolling landscape 35 miles west of the major metropolitan area of Kansas City and 20 miles east of Topeka, the state capital. Home to Haskell Indian Nations University (http://www.haskell.edu) as well as KU, Lawrence offers the cultural and athletic events of a university setting. For more information on Lawrence, please visit the Lawrence Convention and Visitors Bureau (http://www.visitlawrence.com), the Lawrence CyberVillage (http://www.ci.lawrence.ks.us), or the City of Lawrence (http://www.lawrenceks.org) web pages.

The University of Kansas prohibits discrimination on the basis of race, color, ethnicity, religion, sex, national origin, age, ancestry, disability, status as a veteran, sexual orientation, marital status, parental status, gender identity, gender expression and genetic information in the University's programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Director of the Office of Institutional Opportunity and Access, IOA@ku.edu, 1246 W. Campus Road, Room 153A, Lawrence, KS, 66045, (785)864-6414, 711 TTY.