

Eric Hiatt

GRADUATE STUDENT · UNIVERSITY OF TEXAS INSTITUTE FOR GEOPHYSICS · THE JACKSON SCHOOL OF GEOSCIENCES

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Research Interests

Examining early Mars hydrology through numeric models and laboratory-based analogue experiments to understand the global-scale effects of basin-forming impact events on early Mars. Conducting laboratory experiments on basic fluid dynamic problems related to the applicability and accuracy of commonly used governing equations in groundwater flow models.

Education

The University of Texas at Austin

Austin, TX

PHD CANDIDATE PLANETARY GEOPHYSICS

Aug. 2019 - May 2025 (expected)

- Dissertation: Understanding spatio-temporal scales between large impacts and hydrosphere equilibrium on early Mars
- Co-advised by Dr. Sean Gulick and Dr. Marc Hesse
- Areas of Study: Impact cratering processes, Planetary surface processes, groundwater hydrology, cryosphere, numeric modeling, fluid dynamics, applied mathematics
- Relevant Coursework: Continuum Mechanics, Geological Measurement and Monitoring (Sensor Design), Numerical Modeling in Geosciences, Planetary Geology & Geophysics, Numerical Simulations of Reservoirs, Numerical Analysis: Differential Equations, Numerical Methods in Petroleum and Geosystems Engineering, Physical Hydrology, Computational Environmental Fluid Dynamics

The University of Texas at Austin

Austin, TX

B.S. GEOPHYSICS

Aug. 2016 - May 2019

- Relevant Coursework: Python in Geoscience Research, Thermodynamics and Phase Behavior, Introduction to Remote Sensing, Modeling Fluid Flow in Porous Media, Mathematical Methods in Geophysics, Computational Methods, Advanced Calculus for Applications II, Structural Geology, Marine Geology & Geophysics Field Course, Programming in Fortran and Matlab, Physics of the Earth, Matrices and Matrix Calculations, Differential Equations

Austin Community College

Austin, TX

A.S. GEOLOGY

Jan. 2015 - May 2016

- Austin Community College Geology Club President Aug. 2015- May 2016

Central Texas College

Killeen, TX

A.A. INTERDISCIPLINARY STUDIES

Aug. 2006 - July 2014

Research Experience

Geological Fluid Mechanics Group (Prof. Marc Hesse)

Austin, TX

GRADUATE RESEARCH

Jan. 2020 - Present

- Developed a proprietary finite difference model that is implemented through a second order, mass conservative method based on a staggered grid approach, with spherical shell geometry, periodic boundary conditions, irregular domain, and a Newton-Raphson solver.
- Designed, fabricated, constructed, and operated a 2m by 0.5m bead pack cell utilized in fluid dynamical experiments resulting in a robust data set of 147 experiments over an 11 month period.
- As a mentor for the Research Traineeship Designed, fabricated, constructed, and operated a 2m by 0.5m bead pack cell utilized in fluid dynamical experiments resulting in a robust data set of 147 experiments over an 11 month period.
- Designed and implemented data processing work flow standards to orthorectify photos, extract data via a custom data picking program, built and maintained a user friendly data structure, and created a data archive that will facilitate use and access to the scientific community.
- Self taught autoCAD and 3-D printing techniques enabling custom fabrication of parts and accessories utilized in experiments allowing for validation of numeric models with varying boundary conditions (Dirichlet and Neumann).
- Fabricated a custom digital sensor system using off the shelf Arduino components resulting in digital collection of data previously collected in analogue.

Bureau of Oceanic Energy Management (BOEM) Grant (Prof. Sean Gulick)

Austin, TX

UNDERGRADUATE RESEARCH

May 2018 - Aug. 2019

- Prepared and conducted at sea operations for CHIRP surveys aiming to identify future sand resources during two BOEM funded expeditions into the Gulf of Mexico.
- Preserved seafloor core data and pictures via digitization of more than 360 photos and 36 well logs. Created work flow allowing for the digitization of 36 single cores recorded in segmented pictures while preserving true color and aspect ratios. Data was archived on university servers and BOEM Arc Map repositories allowing greater access to data that was previously inaccessible.

Planetary Surface Processes Group (Prof. Timothy Goudge)

Austin, TX

UNDERGRADUATE RESEARCH

May 2018 - Jan. 2019

- Examined 450 open and closed basin crater lakes via ArcGIS as candidates for future studies based on availability of specific coverage of remotely sensed data.

PUBLISHED

- Hiatt, E.**, Shadab, M.A, Gulick, S., Goudge, T., & Hesse, M.A. (2024). Limited Recharge of the Southern Highland Aquifer on Early Mars. *Icarus*, 115774. <https://doi.org/10.1016/j.icarus.2023.115774>.
- Shadab, M., **Hiatt, E.**, & Hesse, M.A. (2023). PKgui: A GUI software for Polubarinova-Kochina's solutions of steady unconfined groundwater flow., *Software-X*, 24, 101573. <https://doi.org/10.1016/j.softx.2023.101573>.
- Shadab, M. A., Luo, D., **Hiatt, E.**, Shen, Y., & Hesse, M. A. (2023). Investigating steady unconfined groundwater flow using Physics Informed Neural Networks. *Advances in Water Resources*, 177, 104445. <https://doi.org/10.1016/j.advwatres.2023.104445>.

IN REVISIONS

- Shadab, M. A., **Hiatt, E.**, Bahia, R.S., Bohacek, E.V., Steinmann, V., & Hesse, M. A. (2024). Infiltration dynamics on early Mars: Geomorphic, climatic, and water storage implications. *Geophysical Research Letters*.

UNDER REVIEW

- Salese, F., **Hiatt, E.**, Pondrelli, M., Hesse, M., Mitri, G., Soldano, M., & Fairén, A.G. Volcanic outgassing, flooding and volume of the Martian lowlands constrained by Early Noachian crater distribution. In review at *Scientific Reports*.

IN PREPARATION

- Hiatt, E.**, Shadab, M. A., Gulick, S., Goudge, T., & Hesse, M. A. (2024). Transient Recharge of the Southern Highlands Aquifer on Early Mars: Implications for Climate & Water Availability., submitting to *Nature Geoscience*- Fall 2024.
- Hiatt, E.**, Shadab, M. A., & Hesse, M. A. (2025). Experimental and Numerical Investigations of Seepage Face Dynamics: A Physics Solution, submitting to *Journal of Fluid Mechanics*- Spring 2025.

CONFERENCE TALKS

- Hiatt, E.**, Shadab, M., Bahia, R.S., Bohacek, E.V., Steinmann, V., & Hesse, M.A., Dynamics of Infiltration on Early Mars. Annual Meeting of the American Geophysical Union, 2024.
- Hiatt, E.**, Shadab, M., , Gulick, S., Goudge, T., & Hesse, M.A. Martian Lakes: A Critical Requirement for Transient Groundwater Models. *LPI Contributions (2024)*, 3040, 2608
- Hiatt, E.**, Shadab, M.A, Gulick, S., Goudge, T., & Hesse, M.A. Limited Recharge on Early Martian Aquifers: Numeric & Analytic Recharge Rate Estimates As Constrained By Geomorphic and Geochemical Observations. Annual Meeting of the American Geophysical Union, 2022. Abstract ID 1073684.

EXTENDED CONFERENCE ABSTRACTS

- Hiatt, E.**, Shadab, M. A., & Hesse, M. A. (2023). Planetary Scale Groundwater and Surface Water Interaction on Early Mars. *LPI Contributions*, 2806, 2415.
- Hiatt, E.**, Shadab, M. A., Hesse, M. A., Gulick, S. P. S., & Goudge, T. A. (2022, March). Estimates of Groundwater Divides and Basins on Noachian Mars. In *53rd Lunar and Planetary Science Conference* (Vol. 2678, p. 2618).
- Shadab, M. A., **Hiatt, E.**, & Hesse, M. A., (2024). Infiltration On Early Mars and Its Implication Towards Fluvial-Aeolian Interactions. *LPI Contributions*, 3040, 1383.
- Hesse, M. A., Shadab, M. A., & **Hiatt, E.** (2023). Timescales for Terminal Groundwater Drainage from the Southern Highlands on Mars. *LPI Contributions*, 2806, 1637.
- Shadab, M. A., **Hiatt, E.**, & Hesse, M. A. (2023). Investigating Groundwater Dynamics and Residence Times on Early Mars Using Unconfined Aquifer Model with Vertical Heterogeneity. *LPI Contributions*, 2806, 1736.

CONFERENCE ABSTRACTS

- Hiatt, E.**, Shadab, M.A., Gulick, S., Goudge T.A., & Hesse, M.A., Transient Groundwater Models Suggest Short Lived Recharge Events on Early Mars. American Geophysical Union Annual Meeting 2024.
- Hiatt E.**, Shadab M.A., Gulick S.P.S., Goudge T.A., & Hesse M.A (2023). Limited Recharge of the Southern Highlands Aquifer on Early Mars. *Texas Area Planetary Science (TAPS) Conference, contribution TAPS2023-55*.
- Hiatt, E.**, Shadab, M., Hesse, M.A. , & Gulick, S., Experimental and Numerical Investigations of Seepage Face Dynamics. Annual Meeting of the American Geophysical Union, 2021. Abstract # P25G-2228.

- Hiatt, E.**, Shadab, M., Hesse, M.A., Gulick, S., Goudge, T., & Liebeck, J., Numerical Modeling of the Formation of Hellas Planitia with Focus on Spatio-Temporal Scales Required for Hydrologic Equilibration. Annual Meeting of the American Geophysical Union, 2021. Abstract # P25G-2228.
- Hiatt, E.**, Hesse, M.A., Gulick, S., & Goudge, T., Groundwater filling times for large impact basins on early Mars and implications for the onset of post impact hydrothermal systems. *American Geophysical Union Annual Meeting 2020*. Abstract # P055-0011.
- Shadab, M.A., **Hiatt, E.**, & Hesse, M.A. (2023). A Deep Crustal Aquifer Model for Southern Highlands of Noachian Mars Shows Groundwater Age and Near-Surface Dynamics. *NASA Exploration Science Forum*.
- Hesse, M.A., Shadab, M.A., & **Hiatt, E.**, Groundwater-ocean interaction on Mars. Annual Meeting of the American Geophysical Union, 2021. Abstract # P23B-08.
- Hesse, M.A., Shadab, M., Luo, D., Shen, Y., & **Hiatt, E.**, Investigating Groundwater Flow Dynamics using Physics Informed Neural Networks (PINNs). Annual Meeting of the American Geophysical Union, 2021. Abstract # H34F-03.
- Shadab, M., Luo, D., Shen, Y., **Hiatt, E.**, & Hesse, M.A., Investigating fluid drainage from the edge of a porous reservoir Using Physics Informed Neural Networks. Society for Applied and Industrial Mathematics Annual Meeting 2021.

Invited Speaker

- Nov. 2024 **University of Cincinnati, Department of Geosciences**, hosted by Dr. Andrew D. Czaja.
 "Cold & Arid or Warm & Wet? Insights Into the Early Martian Climate Through Groundwater Modeling"

Honors & Awards

- Jan. 2025 **Graduate Student Fellowship**, University of Texas Institute of Geophysics
- Aug. 2024 **Student Support Grant**, Center for Planetary Systems Habitability
- Jan. 2024 **Outstanding Geoscience Teaching Assistant Award**, National Association of Geoscience Teachers
- 2023-2024 **Student Service Award**, Jackson School of Geosciences
- Fall 2022 **Outstanding Graduate Teaching Assistant**, Jackson School of Geosciences
- Jan. 2022 **Student Support Grant**, University of Texas, Center for Planetary Systems Habitability
- Aug. 2021 **Graduate Student Fellowship**, University of Texas Institute of Geophysics
- Apr. 2021 **Student Research Award in Planetary Habitability**, Center for Planetary Systems Habitability
- Sept. 2020 **Endowed Presidential Fellowship**, University of Texas at Austin
- Aug. 2019 **Entry Fellowship**, University of Texas Institute for Geophysics
- Oct. 2018 **Ann and Henry Hamman Scholarship in Geosciences**, Jackson School of Geosciences
- May 2018 **Greater Texas Foundation Endowed Scholarship**, Jackson School of Geosciences

Student Leadership

Graduate Student Executive Committee

PRESIDENT

Aug. 2023 - Aug. 2024

- Responsible for the operations of the Graduate Student Executive Committee (GSEC) with an annual budget of more than \$40,000. The committee is composed of 15 officers who serve a graduate student population of more than 250. Graduate Student Executive Committee Officer positions include: Research Symposium Chair, Treasurer, Civil Engagement (Voting) Officer, Peer Mentorship Group, Graduate Student Assembly Representative, International Student Representatives and Support, Faculty and Graduate Studies Committee Liaison, Web and Social Media Chair, Marketing Chair, Social Chairs, and Administrative Chair. <https://www.jsg.utexas.edu/gsec/>

Graduate Student Executive Committee

RESEARCH SYMPOSIUM CHAIR

Aug. 2022 - Feb. 2023

- The symposium goals include providing an opportunity for cross-disciplinary collaboration among graduate/undergraduate students and faculty/research scientists through presentation of current research as well as aiding in industry recruitment. The symposium included 105 participants and had a budget of \$25,000.
- Initiated changes to the format of the event as well as function so as to improve the equity of the event and promote an inclusive environment. This work led to a student service award in the spring of 2023
- Led the solicitation of funding, recruitment of judges within industry, acquiring and reserving facilities, catering, disbursing funds, organizing and conducting day of operations, accommodating distinguished guests and university administrators, and returning feedback to participants.

Graduate Student Executive Committee

GRADUATE STUDENT ASSEMBLY REPRESENTATIVE

Aug. 2022 - Present

- The graduate student assembly is a university wide governing body for graduate students. Duties include faithfully summarizing and reporting proceedings to Jackson School of Geosciences' graduate students and utilizing their informed positions to represent and advocate their interests within the assembly.

Geocrustal Fluid Mechanics Group

LABORATORY LEAD

Jan 2019 - Present

- Maintain and account for university laboratory equipment valued in excess of \$400,000 dollars.
- Lead and organize laboratory operations, and maintenance. Ensure compliance with all university standards regarding laboratory safety passing all safety inspections.
- Responsible for scheduling and allocating time in the lab. This task required flexibility to successfully overcome the challenges created during the pandemic.

Graduate Student Executive Committee

TREASURER

Aug. 2021 - May. 2022

- Responsible for committee budget including allocation of event funding and payment of vendors. Planned and disbursed funding for Jackson School of Geosciences' year end holiday party, First Friday happy hour and grill events, and food and refreshments for all committee meetings facilitating the development of community for and between faculty and students.

Austin Community College Geology Club

GEOLOGY CLUB PRESIDENT

Aug. 2015 - Aug. 2016

- Planned, scheduled, reserved space, and budgeted for 8 club meetings. Responsible for meeting content and/or activities for example guest speakers from local geoscience companies such as Advanced Geosciences Inc. and the Austin Geological Society.
- Conducted outreach at Austin community college events raising awareness of career opportunities in geology as well as promoting club activities. Expanded club membership from 8 to 32 members in a semester.
- Planned, coordinated, acquired funding, and executed field trips to local field sites of geologic interest.

Teaching Experience

GEOFORCE Texas Southwest 10th Grade Academy

COURSE INSTRUCTOR

June 2024

- Acted as the primary instructor for GEOFORCE Texas' 10th grade southwest academy of more than 40 students.
- Taught daily modules and guided field excursions through the Zion, Bryce Canyon, and Grand Canyon National Parks. Additional field locations included Glenn Canyon Dam, Meteor Crater, and Lowell Observatory. The course focused on sedimentary processes on Earth and Mars.

Solid Earth Processes (undergraduate course)

LEAD GRADUATE TEACHING ASSISTANT

June 2023 - Dec. 2023

- Selected as the lead teaching assistant for a new, major required course resulting from a curriculum overhaul.
- Solely responsible for the design and construction of the laboratory portion of the course. This included the creation of 12 laboratory readings, prelab quizzes, laboratory exercises, grading keys, and teaching material per lab.

Physical Geology (undergraduate course)

GRADUATE TEACHING ASSISTANT

Aug. 2022 - Dec. 2022

- Instruct 3 weekly laboratory sections with a total of 42 non-major students. As a result, I received the outstanding teaching assistant for the fall.

Undergraduate Research Traineeship Experience

GRADUATE TEACHING ASSISTANT

Jul. 2022

- Overhauled and customized existing Numeric Modeling course curriculum by converting Matlab based code to Python code for Geoforce's exchange program that taught 12 undergraduate students from universities across the country.

Introduction to Geology (undergraduate, non-major course)

GRADUATE TEACHING ASSISTANT

Jan. 2021 - May 2021

- Accountable for the instruction and grading of 24 students in three weekly, online laboratory sections.
- Leveraged previous pedagogical methods to teach geologic principles virtually while incorporating flexibility in the methods/availability to students to overcome challenges posed by teaching non-geology major students remotely.

Physical Geology (undergraduate, non-major course)

GRADUATE TEACHING ASSISTANT

Jan. 2021 - May 2021

- Instructed 4 sections of weekly, online laboratory instruction totaling 35 students.
- Designed and implemented novel pedagogical methods to adapt to online laboratory instruction during the pandemic.
- Facilitated students' understanding despite limitations posed by at home physical sample kits by using a personal microscope shared over the internet to examine samples.

Service

Department of Geologic Sciences Assistant Professor Search Committee

SEARCH COMMITTEE MEMBER

Oct. 2022 - Apr. 2023

- Selected to be the graduate student representative, as a full voting member, on the Department of Geological Sciences Assistant Professor Search Committee. This was a difficult search due to the open call for research specialty and the wide expertise of the more than 300 applicants. However, the search resulted in the successful hiring of two tenure track assistant professors.

Outreach

AR Sandbox

- Created an Augmented Reality Sandbox as Austin Community College's Geology Club President. The sandbox was purchased by the college and is in use in the geology lab on the Highland campus in Austin, TX.
- Engaged community using augmented reality sandbox by participating in public demonstrations at Makers Space symposiums held at local Barnes and Noble stores.
- Participated in local school system's science night exposing elementary students to geology utilizing the augmented reality sandbox in an interactive and tactile manner. Contacted the local FOX news station and presented the augmented reality sandbox to the public in a local news feature segment.

Educational Outreach

- *Oct. 2024-* Skype a Scientist presentation (x2), Ms. Janey's 10th grade science classes, Robertsdale High School, Robertsdale, AL.
- *Sept. 2024-* Skype a Scientist presentation (x5), Ms. Gross' 6th grade science classes, Coleman Middle School, Wichita, KS.
- *May 2024-* Skype a Scientist presentation, Mr. Hauer's 8th grade science classes, Western Middle School, Greenwich, CT.
- *Feb. 2024-* in person presentation, Mr. Gordon's 1st grade class, Herrington Elementary School, Round Rock TX.
- *Feb. 2024-* in person, engaged public at the University of Texas' "Girls in STEM day" with Dr. Timothy Goudge's Planetary Surface Process Group. For this event, I 3D printed 6 digital elevation models on Earth and Mars. The attendees would then attempt to match the 3D model with a topographic map.
- *Jan. 2024-* in person presentations for career day at NYOS Charter School in Austin, TX. Gave four, thirty minute presentations to Mrs. Estes' 4th grade science classes focused on careers in the geoscience.
- *Sep. 2023-* Skype a Scientist presentation, Mrs. Cox's 7th grade science class, Forest Grove Middle School, Worcester, MA.
- *Mar. 2023-* Skype a Scientist presentations (x2)- Mrs. Huygen's 3rd grade & 5th grade science classes, DOD Middle School, Camp Lejune, NC.
- *Mar. 2023-* Skype a Scientist presentation, Mrs. White's 4th grade class, Zellwood Elementary School, Zellwood, FL.
- *Nov. 2022-* Skype a Scientist presentation, Mrs. Roth's 4th grade class, Oak Hill Elementary, Tiffin, IA.
- *Nov. 2022-* Skype a Scientist presentation, Mrs. Barkley's 3rd grade class, St Kateri Catholic School, Grande Prairie, Alberta, Canada.
- *Oct. 2022-* Skype a Scientist presentation, Mrs. Isreal's Kindergarten class, Flynn Elementary, Burlington, VT.
- *July 2022-* In person presentation to approximately 100 high school students involved in the Geoforce summer science camp participants on remote sensing applications. Geoforce is an organization with the mission to expose underrepresented students to geologic sciences.
- *Jan. 2022-* Hour long in person presentation in back to back weeks, Longview Micro School in Austin, TX focused on planetary science and in situ resource utilization.
- *Sep. 2021-* Skype a Scientist presentation, Mrs. Lechwar's 4th grade class, John Stockton Elementary School, Jacksonville, FL.
- *Apr. 2021-* Skype a Scientist presentation, Mrs. Lee's 4th grade science class, Wateree Elementary School, Lugoff, SC.
- *Sep. 2020-* Skype a Scientist presentation, Mrs. Mink's 5th grade class, Tuckahoe Elementary School, Richmond, VA.
- *Feb 2020-* In person, engaged a general public audience while working a booth at a "Hot Science, Cool Talk" given by Dr. Timothy Goudge.

Mentoring

Research Traineeship Experience Program

MENTOR

May 2023 - Aug. 2023

- Mentored two undergraduate students: Paola Avina from the University of Texas San Antonio and Jhovanni Loeza from the University of Texas A & M Kingsville. Each student conducted a three month research project culminating in poster presentations.
- Provided guidance and mentoring for Paola Avina's project entitled "Up and over. How do rivers climb mountains? Constraining groundwater's role in forming crater lake inlets on early Mars." This work required mentoring the student in use of ArcGIS Pro to analyze the inlet valley orientation for 221 Noachian aged open basin crater basins and then comparing the orientations with numeric models of possible groundwater gradients.
- Provided guidance and mentoring for Jhovanni Loeza's project entitled "Groundwater and Topography Interaction on Early Mars. This work required the mentoring of the student in the fabrication of three Hele-Shaw flow cells to conduct fluid dynamics experiments. The goal of this work was to understand the effects of topography to groundwater interaction that may be consequential on early Mars, however, are not included in standard groundwater modeling.

Jackson School of Geosciences Peer Mentor Support Program

MENTOR

Aug. 2021 - Aug. 2023

- Endeavored to build interpersonal relationships as a means to accelerate mentees' involvement in the JSG's community and culture. Aided students' family in this transition through navigation of the university's systems and with personal children's items to alleviate sources of stress associated with moving to America.
- Mentored Chengwei Zhang Aug. 2022 - Aug. 2023.
- Mentored Shuhua Hu Aug. 2021 - Aug. 2022.

Research Traineeship Experience Program

MENTOR

May. 2020 - Aug 2020

- Mentored undergraduate student Sebastian Alonso Perez (May 2020 - Aug 2020), Stanford University.
- Encouraged and facilitated a 3 month experience in a data based research project by providing personal laboratory data, project idea, and mentorship resulting in the successful completion of the student's project using machine learning based software to find phreatic surfaces in fluid dynamical experiments.

Big Brothers big Sisters of Austin

MENTOR

Jan. 2015 - May 2021

- Mentored Little Brother from age 12 to 18 through weekly outings via Big Brothers/Sisters of Austin.

Platform and Coding Proficiencies

Fluent	Matlab, Python, LaTeX, Microsoft, and Adobe Suites
Proficient	Arduino, ArcGIS PRO, ENVI, AutoCAD
Novice	Linux, Paradigm

Internships

Eagle Eye Geospatial

Midland, TX

INTERN

Aug. 2019

- Acquired remotely sensed data via drone reconnaissance resulting in two completed work orders. Learned real world applications for Lidar and NDVI datasets.
- Produced point cloud-based survey data, according to company standard operating procedures and customer specifications, using drone imagery and Structure from Motion and Multiview Stereopsis software. Resulting in 2 delivered products.

Dawson Geophysical Company

Midland, TX

INTERN

June 2018 - Aug. 2019

- Operated Vibrosies seismic equipment in the field.
- Aquired, processed, and interpreted land-based seismic data.

Relevant Work Experience

Austin Community College

LABORATORY ASSISTANT

Aug. 2004 - June 2013

- Prepared laboratory lessons for two Physical Geology course laboratory sections facilitating positive educational outcomes for 40 students. Prepared, stored, and organized specimens, as well as maintained laboratory equipment.

U.S. Army

STAFF SERGEANT

Aug. 2004 - June 2013

- Deployed 1068 days to a combat zone supporting Operations Iraqi Freedom and Enduring Freedom in Iraq and Afghanistan. Highly decorated to include five Army Commendation Medals for actions in combat theater. Medically retired with a service connected disability due to injuries sustained in combat.
- The kinetic and frenetic pace associated with combat environments and military culture allowed for the cultivation of a skill set that cannot be obtained in any other way. Accountability, attention to detail, high stakes decision making under extreme stress, flexibility, integrity, interpersonal skills, stress tolerance, team building, self-management, and the ability to read complex situation reports to learn and adapt to evolving conditions were all skills gained to a proficiency.
- Promoted to the rank of staff sergeant in the fastest time allowed by Army regulations.
- Selected from 100 junior enlisted as commanders driver during a year tour in Iraq and conducted over 90 combat missions ensuring the mobility and command effectiveness of the company commander.
- Completed the Army's two week intensive Primary Leadership Development Course as well as the 6 week Basic Non-Commissioned Officer Course.
- Selected ahead of peers as the 2nd Platoon Headquarters section sergeant responsible for 15 soldiers, nearly four million dollars in US Army property and tasked with supporting the combat effectiveness of a 60 man platoon during 70+ combat missions in 15 months tour of duty in central Iraq.
- Selected from 180 peers to command the forward operating base security commander accountable for the safety of 1500 personnel residing on the installation.
- Responsible for the health, welfare, and combat readiness of 150 personnel at the forward operating base. This included 60 U.S. soldiers and approximately 90 local national contracted security forces.
- Navigated complex cultural and organizational structures to ensure battlefield effectiveness between International Security Forces Afghanistan (ISAF) partners (US Marine, Romanian, Australian, and British forces) and the local Afghan National Police (ANP), Afghan National Army (ANA), and local national security contractors.
- Engaged with local Afghani leaders in Qalat city jirga (town elder meetings) to resolve conflict with local populace and gain battlefield intelligence. The role required an understanding of the complex relationships between tribal interests in the region, as well as the impact of ANA and ANP ineffectiveness and corruption on the populace.
- Conducted 10 SigInt (Signal Intelligence) missions near the Pakistan border.
- Selected as a battalion level operations sergeant in a customer service role that balanced the training needs of six 150 man units (roughly 900 total personnel) with available training funds, range availability, and individual unit training needs. This position was two positions above the rank I held at that time.