MARIE FARSON

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ASSISTANT PROFESSOR OF EARTH SCIENCES

EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO – SCRIPPS INSTITUTION OF OCEANOGRAPHY
PhD in Applied Ocean Sciences

POMONA COLLEGE – Claremont, CA
BA in Physics

SKILLS

Proponent of Project Based Learning
Engineering Professional
Overseas Experience
Research Experience
Effective Time Management
Math and Science Tutoring
Backwards Design Lesson Planning
Assessment of Diverse Learning Styles
Multilingual in Spanish, French, Dutch and Arabic
PADI and NAUI Certified Diver
Licensed Commercial Pilot and Flight Instructor

PROFESSIONAL EXPERIENCE

ASSISTANT PROFESSOR OF EARTH SCIENCES & ENGINEERING – PRINCIPIA COLLEGE

Assistant Professor, July 2016 - Present

Teach courses in the Earth Sciences and Engineering. Serve as an advisor to new students and mentor students interested in Engineering or a minor in Earth Science.

INTERNATIONAL BACCALAUREATE PROGRAM – MARSHALL HIGH SCHOOL

Technology Education and Engineering Teacher, Sept 2014 – July 2016

Teach courses in IB Design Technology, STEM Engineering and Technical Drawing. Develop and mentor a FIRST robotics team at Marshall. Develop and teach a new honors level course on STEM Engineering, incorporating project based learning units on the Sea Perch submersible, 3D printing of prosthetic hands and CAD/CAM machining.

Key Results:

- Mentored our school's FIRST Robotics team which won Rookie High Seed and All Star awards at Regionals and competed at World's in St Louis in 2015.
- Organized and will lead a group of students to the Global Student Leaders Summit in the Hague on STEM Engineering solutions to Human Rights Issues.
- Arranged for students to deploy their submersibles in the US Navy's David Taylor Model Basin.
- Guided students through the manufacture of a 3D printed prosthetic hand for a handicapped child via the e-Nable Organization.
- Was recognized by the Rotary Club as a Fairfax County Engineering Teacher of the Year

US DEPARTMENT OF STATE – US EMBASSY TRIPOLI, LIBYA

Crisis Management and Support Services

Community Liaison Officer, 2010 - 2011

Provide pre-arrival information, orientation and assistance to newly assigned employees and family members. Identify the needs of the embassy community and respond with effective programming, information, guidance and referral. Serve as an advocate for employees and family members and a liaison for education and employment issues. Advise post management on quality of life issues and recommend solutions. Provide crisis management and support services.

Key Results:

- Played a key role in the evacuation from Tripoli, Libya of US Embassy personnel and their families.
- Received an Exceptional Service Award for duties performed during evacuation.
- Served as a liaison between families and schools in Libya.

ENGINEERING TECHNOLOGY CENTER – MYSTIC, CT

Developed acoustic analyses of submarine structures

Senior Engineer, 1995 – 1998

Develop acoustic and vibration analyses of submarine structures. Development of continuous beam transfer impedance method codes including the implementation of matrix banding codes, sparse matrix solvers, Patran links, and post processing routines. Analyzed the noise transmission properties of the New Attack Submarine SIE cabinets. Conducted wavenumber analyses of the hull mounted truss response to assess the assumption of incoherence used in the Darby analyses. The wavenumber analyses included both conventional and minimum variance techniques. Applied the Darby Method of radiated and platform noise predictions to the New Attack Submarine.

Key Results:

- My redesign of the evolving computer code, resulted in significantly greater speed of runs during research.
- I was able to increase confidence in the majority of results due to demonstrated complete understanding of the physics and modeling involved.
- Took initiative in contacting another department to collaborate on a passive acoustic ASW sea trial.

TROY STATE UNIVERSITY – ST MARYS, GA

Physics Professor

Adjunct Professor, 1995

Taught a physics class for Troy State University's program on the Kings Bay Naval Submarine Base, while simultaneously employed as Project Manager for SeaWorks.

SEAWORKS, INC– SAN LEANDRO, CA

Project Management for Government Contracts

Project Manager, 1992 – 1995

Managed the installation of underwater Magnetic Silencing Facilities at the Kings Bay Naval Submarine Base and at Mayport Naval Station, Florida. Responsibilities included: scheduling, contracting, technical and financial performance of the projects as well as interfacing with the client, prime contractor and the Government.

Key Results:

- Demonstrated innovative analytical skills in purchasing a fiberglass skiff instead of renting an aluminum john boat, thus saving Seaworks a significant amount of money over the course of the contract.
- Documented financial allocations meticulously, saving Sea Works from a financial loss when the Prime Contractor attempted to pass along loses
- Saved our leased barge from sinking while personally diving on a weekend to verify the quality of work completed by our dive crew during the previous week.
- Innovative design of our sensor rack resulting in time savings during installation and less breakage of components

UNIVERSITY OF CALIFORNIA, BERKELEY – BERKELEY, CA

Teaching Marine Geophysics Course

Adjunct Professor, 1991

Taught Marine Geophysics course for UC Berkeley's Adult Education Department, while simultaneously employed at Deep Ocean Engineering.

DEEP OCEAN ENGINEERING – SAN LEANDRO, CA

Design and Operation of Underwater Submersibles

Engineer, 1989 - 1991

Solved engineering problems related to the design of remotely operated vehicles and instrumentation used to perform specialized tasks in various underwater environments including the open ocean, inland lakes and nuclear power plants. Conducted worldwide ROV operations: search & salvage (Singapore, Caribbean, California); photographic surveys of pipelines and outfalls (California, Hawaii, Gulf of Mexico); underwater video surveys of dam sites for the United Nations (India); fisheries population mapping and migration studies (Alaska, Gulf of Mexico) and military surveillance and mapping (Panama and Singapore). SECRET clearance.

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Key Results:

- Accomplished a field repair to an ROV in rural India during a dam survey for the United Nations, avoiding a long and costly delay
- Demonstrated initiative in learning more about electrical engineering after hours at work, to be better prepared to solve problems in the field. This knowledge proved invaluable while working in Singapore where I was able to complete an extensive field repair during Factory Acceptance Testing of an ROV for the Singapore Navy.

NAVAL POSTGRADUATE SCHOOL – MONTEREY, CA

Research and Guidance to Graduate Students

Visiting Faculty Member, 1998

Served as a resource for graduate students and participated in student research while completing my dissertation.

OF NOTE

Tutoring

Mathematics – McLean, VA. 2011 – 2014. Algebra and Geometry up through Calculus for grades 7-12

Mathematics and Physics – Old Mystic, CT. 1998 - 2001
Adult Literacy – Alameda, CA. 1990 - 1992

Professional Certifications:

Chapman Shaffer Award in Marine Geophysics
OSHA 40 Hr Hazmat Certification
PADI and NAUI Certified diver
Licensed Commercial pilot
Flight Instructor and Instrument Flight Instructor
Professional Engineering License

Languages:

Arabic – 1+,2+,1+ on DLPT V
Dutch – conversant reading, writing and speaking
French – conversant reading, writing and speaking
Spanish – conversant reading, writing and speaking

PUBLICATIONS

Osmon, M.C., 1982, "An electromagnetic flowmeter based on the Hall Effect." B.A. thesis, Pomona College, Physics Dept, 57 pp.

Lawson, A.C., M.C. Osmon, J.S. Henderson, and M. Dewees, 1982, "Superconductivity of (La,Th)Ru_2, (La,Th)Os_2, and La$(Ru,Os)_2$ alloys," Journal of the Less-Common Metals, vol. 86,p. L9-L11.

Spiess, F.N., C.D. Lowenstein, and M.C. McIntyre, 1984. "Analysis of a method for precisely relating a sea floor point to a distant point on land: a report under NASA Grant NAG 5-320," MPL-U-31, Marine Physical Lab of the Scripps Institution of Oceanography, University of California, San Diego, 21 pp.

McIntyre, M.C., and D.E. Boegeman, 1986. "A new sound velocity measurement system," Proceedings, International Symposium on Marine Positioning, Marine Technology Society, USGS, Reston, Virginia, Oct 14-17, 1986, p. 317-327.

McIntyre, M.C., 1987. "Improvements in sound velocity measurement," Journal of the Marine Technology Society, Vol. 21, no. 4, p. 68-74.

McIntyre, M.C., 1989. "Design and testing of a seafloor geodetic system," PhD Thesis, MPL-U-48, Marine Physical Lab of the Scripps Institution of Oceanography, University of California, San Diego, 192 pp.

PAPERS

McIntyre, M.C. and D.E. Boegeman, 1986. "A new sound velocity measurement system," Trans. Am. Geophys. Union, vol. 67, no. 44, p. 1001.

McIntyre, M.C., and L. Dorman, 1987. "Modeling the gravity field due to a random source," Trans,. Am. Geophys. Union, vol. 68, no. 44, p. 1248.

McIntyre, M. C., 1988. "A seafloor positioning system," Pacific Congress on Marine Science and Technology Proceedings, Honolulu, Hawaii, May 16-20, 1988.

McIntyre, M.C., 1988. "Using GPS in a system to measure seafloor geodynamics," Chapman Conference on GPS Measurements for Geodynamics, Ft. Lauderdale, Florida, Sept. 9-12, 1988.

McIntyre, M.C., 1988. "Results of a seafloor positioning system sea-trial," Trans. Am. Geophys. Union, vol. 69, no. 44, p. 1150.

McIntyre, M.C., 1989. "A sea floor positioning system," Oceans '89 Proceedings, Seattle, Washington, Sept. 18-21, 1989.