**QUALIFICATIONS**:

**JUDY MANNARD**

24327 22nd Place South

Des Moines, Washington 98198 (206) 824-0612 (H) (206) 592-4476 (W)

Strong background in professional and academic engineering combined with excellent leadership and people skills.

**EDUCATION**:

MS Mechanical Engineering, University of Washington (1987) BS Mechanical Engineering, University of Washington (1985)

Associate of Arts, Option B Engineering, Highline Community College (1982)

**LICENSES:**

Professional Engineer, Mechanical Engineering – Washington (1997)

**PROFESSIONAL ORGANIZATIONS:**

WCERTE (Washington Council for Engineering and Related Technical Education) ASEE (American Society of Engineering Educators)

AAPT (American Association of Physics Teachers)

**ACADEMIC EXPERIENCE:**

Highline Community College, Des Moines, WA (Winter 2008 - present)

Classes taught: Thermodynamics (Engr260), Introduction to Engineering (Engr100), Mechanics of Materials

(Engr225), Introduction to Physics (Phys100), General Physics Prep (Phys139) and Engineering Graphics (Engr114).

Curriculum Development: Worked with a team of science and engineering faculty to redesign the 100 level physics classes, to support college learning outcomes and to create classes designed for both students preparing for calculus based Physics series and for students working towards general AA degrees that need a lab based class. Developed curriculum for new General Physics Prep (Phys139) class, including the selection of course materials. Working with science and engineering faculty to develop varied teaching strategies to better engage students and to develop assessment tools for Physics and Engineering classes. Incorporating Canvas and building classroom web sites to make information easily accessible to students in a variety of formats, and encouraging student feedback for continuous quality improvement.

Engineering advising (Fall 2008 – present): Building relationships with engineering students to provide support and help them build skills necessary to be successful after transferring to their universities. This includes developing individualized academic plans for engineering students based on their current academic levels, choice of engineering discipline and 1st and 2nd university choices. This also requires seeing each student as a unique individual, shaped by his or her socio-economic status, gender, languages, ethnicity, ability, and life experiences. Providing on-going support by meeting quarterly with students or more often if they need additional support. Advising caseload has steadily increased to a current total of 157 engineering students. This also involves coordinating or referring students to other HCC departments, including Financial Aid, Access Services, Registration, Educational Planning, TRIO, MESA, Counseling, and other academic departments, as well as universities and colleges across the country.

Student Activities: Planned, organized and led activities to promote engineering student retention; including campus visits to WSU, UW and SU, Human Powered Paper Vehicle (HPPV), field trips to engineering sites, visits from practicing engineers and university representatives, and activities designed to engage students in learning environment (Engineering Week contests, pizza feed, ice cream socials)

Program Manager for Northwest Engineering Talent Expansion Project (NW-ETEP) (Fall 2008 – Spring 2009): Supported last year of NSF grant intended to increase number of engineering students transferring to four year universities. Academic advising, event planning, managing budget, data analysis and coordinating with faculty.

Director for MESA (Fall 2009 – Fall 2010): NSF grant supporting underrepresented STEM students. Transitioned from NW-ETEP to MESA program, continuing student support while expanding program to all STEM fields and supporting MESA’s goal of supporting underrepresented students. Introduced Academic Excellence Workshops to increase student success in gateway classes.

Faculty Advisor for Women in Science and Engineering and Society of Women Engineers: Provided opportunities for students to develop leadership skills by running meetings and planning events such as the campus-wide Egg Drop and the Women in Science and Engineering dinners.

Outreach:

Co-director of Highline’s regional and state Science Olympiad tournaments (2012 to present)

Washington Science Olympiad Board Member (2014-present)

Mentor for Aviation High School Science Olympiad team (2011- present)

Mentor for four Pacific Middle School’s Future City teams (2010-2011)

Supported high school outreach visits to HCC with planning, writing necessary purchasing paperwork, and participating in events that bring approximately 60 students from local high schools to Highline for a day to learn about Highline’s Engineering and Computer Science programs.

Planned and led workshops for Expand Your Horizon

**PROFESSIONAL EMPLOYMENT**:

Mechanical Engineer, Boeing, WA (1987 - 2002)

Advanced Projects (1999-2002) Lead engineer for Mechanical Systems. Directed design, developed schedules and cost estimates, integrated new proposals, performed technical analysis, coordinated with subcontractors.

767AWACS and 707 AWACS (1994 – 1999) Thermal analysis for Environmental Control Systems. Responsible for development, testing and FAA certification of several cooling systems. Team leader for numerous task force teams solving interdisciplinary technical problems and First Flight Working Group. Requirement and verification focal for entire Mechanical System Organization.

Australian P-3 Proposal (1994) Thermal analysis, pricing and proposal preparation of Environmental Control System for Australian P-3 modification proposal

777 CAS (1993-1994) Thermal analyses and testing of avionics components and boards. Advanced thermal steady state and transient modeling in SINDA and Excel. Flow modeling in Easy5.

P-3 Update IV (1987-1993) Thermal analysis, testing and verification of all Environmental Control Systems. Team leader for Test Instrumentation Team.

Ground Base Intercept Missile (1992) Analytical support of missile launch cell and equipment room for pre- proposal trade studies

Research and Development (1987) Performed thermal analysis of system to cast molten salts into a high temperature thermal storage module.

Co-op Engineer, Army Corps of Engineering, Cold Regions Research and Engr Lab, Hanover NH (1984 – 1984)

Designed, installed and tested large scale heat exchanger. Simulated ice flow with computer models. Reduced weather data to enhance computer simulations.

Co-op Engineer, IBM, San Jose CA (1982-1983)

Updated manufacturing operational procedures. Produced training videotapes for manufacturing team. Technical drawing.