Developing the Next Generation of Science Data System Engineers

John.F.Moses@nasa.gov, Jeanne.Behnke@nasa.gov, Christopher.D.Durachka@nasa.gov

NASA/Goddard Space Flight Center

Science Data System Challenges

• Architect smarter, flexible and scalable data systems: Simplify components with common science data processing functions to ease evolution with emerging technology while maintaining connectivity with archival science data.

• Standardized public data access interfaces of central & distributed sources.

• Increase science findings and practical applications by enabling cross-discipline use of science data.

• Standardize the fundamentally required content and structure: Common depiction of time, location and accuracy.

• Increasing complex remotes sensors and in-situ sensors from spacecraft, aircraft and space networks.

• Encompass data complexities of research and application discipline communities.

Data System Engineer Challenges

• Play an increasing role in developing metadata and data products. Adapt data processing and integration of science algorithms to an evolving computer industry.

• Depicting discipline specific attributes for multiple types of observational data

• Utilize attributes that can become common across science disciplines and observation systems

• Working with increasingly complex science data, multiple datasets and diverse sources requires a skilled workforce

• Take technical training focused in data science and new technologies

• Develop next generation science data systems that can serve multiple science disciplines, diverse observational data and model output.

Career Track Guidance

Suggestions on how to find a career path:

• Develop a long-term vision with a short term plan.

• Review your career plan annually.

• Listen to what others have done. Find a mentor, be a mentor.

• Improve your skills through continuing education.

• Challenge yourself, don’t be afraid to change, be willing to take a risk.

Seek out a career path that fits your goals and will be most satisfying to you:

• Your individual interests, skills, and training will dictate the path you should follow.

• Over time, modify your path based on personal interests, values, goals, experiences, and new opportunities that present themselves.