

2017-2018 NRT-DESE Seminar Series

Presented by the National Science Foundation, NSF Research Traineeship Data-Enabled Science and Engineering (NRT-DESE) award for Graduate Training in Data-Enabled Research into Human Behavior and its Cognitive and Neural Mechanisms

Friday, March 23, 2018
11:00 am - 12:00 pm Talk
Wegmans Hall 1400 (Auditorium)

Data Science in Hollywood: A Diversity of Challenges and Statistical Solutions

Abstract: The marketplace of ideas in data science is a fluid medium for identifying fruitful pairings of challenging problems and novel methodological approaches. These pairings often arise independently from diverse theoretical disciplines and practice areas. Data scientists in industry benefit from an expansive mutual exchange of ideas with academic domains across science, math, and engineering.

The entertainment industry is an excellent case study in this exchange, having a rich offering of challenges in executive decision making and consumer behavior prediction, but little historical precedent for quantitative approaches to solutions. In this colloquium, I will share a range of challenges encountered over several years of helping to launch a pioneering data science group in this industry and some of the solutions we have developed. These experiences span approaches including predictive machine learning, natural language processing, image recognition and deep learning, and Bayesian inference, applied to problems including advertising attribution from campaign and consumer survey data, time series extrapolation of natural language trends identified in social media data, and making inferences about consumers both at massive scales and under the constraint of limited data. Throughout, I will draw connections that illustrate the productive interchange of ideas from academia to industry.



Nathan Sanders, PhD, VP of Quantitative Analytics, LEGENDARY



Biography: Nathan Sanders is the Vice President of Quantitative Analytics at Legendary Entertainment (<https://www.legendary.com/>), the Hollywood studio behind Pacific Rim, Interstellar, Kong: Skull Island, and other blockbuster films, and oversees the Data Science and Primary Research teams there. Nathan joined Legendary in 2013, helping to establish their first-in-the-industry, Boston-based Applied Analytics division which informs the creative process around Legendary's films and executes targeted marketing campaigns worldwide. Nathan did his undergraduate work at Michigan State University and earned his PhD in Astronomy and

Astrophysics from Harvard University, where he developed Bayesian models of the light curves of core-collapse supernovae. Nathan is a co-founder of the science communication programs Astrobites (<http://astrobites.org/>), the reader's digest for the astrophysical literature, and ComSciCon (<http://comscicon.org/>), the workshop series on science communication for graduate students.