## R. J. Seager - Curriculum Vitae

	Ph.D. Candidate Department of Biomedical Engineering Boston University	44 Cummington Mall, Boston, MA 02215 Office: (617) 353-1984 rseager@bu.edu
EDUCATION	Ph.D., Biomedical Engineering (in-progress) Advisor: Muhammad H. Zaman, Ph.D. Boston University, Boston, Massachusetts	
	Bachelor of Science, Nuclear Engineering Minor: Mathematics Texas A&M University, College Station, Texas	exas, May 2014; Summa Cum Laude
RESEARCH INTERESTS	I am interested in studying how cancer ce migrate through the body by developing con lying cellular processes that facilitate these from which to study these phenomena ar moment, I am studying cell membrane mee- tion. In particular, I am interested in the biochemical cell signaling pathways, as we signals on very short timescales.	lls invade surrounding healthy tissue and mputational models to simulate the under- e behaviors, allowing a unique perspective ad informing experimental work. At the chanics as they apply to single cell migra- interplay between mechanical forces and ell as the mechanical transmission of cell
ACADEMIC RESEARCH	<ul> <li>Doctoral Research</li> <li>Intratumoral communication and its effects</li> <li>Studied interactions between cancer</li> <li>Analyzed intercellular and intracellular croenvironment at chemical, biologics</li> <li>Comprehensive effort includes both of methods.</li> </ul>	s on tumor progression. cells, immune cells, and tumor stroma. lar communication within the tumor mi- al, and mechanical levels. computational modeling and experimental
	<ul> <li>Undergraduate Research Thesis</li> <li>Implementing and testing upstream corner</li> <li>Conducted long-term independent presearch Scholars Program and Engine</li> </ul>	balance methods in PDT. roject in fulfillment of Undergraduate Re- ering Scholars Program requirements.
	<ul> <li>Investigated computational solutions engineering, which are often unsolvable</li> <li>Implemented tested and employed</li> </ul>	to particle transport problems in nuclear ole with traditional or analytical methods.

• Implemented, tested, and evaluated the strengths and weaknesses of the upstream corner balance family of computational particle transport methods.

## Texas A&M Systems Engineering Initiative Nuclear Research Team Joint Project

Probabilistic Failure Analysis of a Residual Heat Removal Heat Exchanger During a Postulated Loss of Coolant Accident.

- Collaborated with South Texas Project Nuclear Operating Company.
- Developed a computer model which determined the probability of a specific type of mechanical failure at the plant, and plant operating conditions were adjusted accordingly.

PUBLICATIONS	<ol> <li>R. J. Seager, C. Hajal, F. Spill, R. D. Kamm, M. H. Zaman, "Dynamic inter- play between tumour, stroma, and immune system can drive or prevent tumour progression," <i>Convergent Science Physical Oncology</i>, 3:3, July 28, 2017.</li> </ol>	
	<ol> <li>M. Solom, C. Chance, C. Pannier, R. J. Seager, A. E. Lee, J. Green, T. Duong and P. Alicea, "Risk Analysis of the Residual Heat Removal System at South Texas Project With a Special Focus on Breach of Containment," 2012 20th International Conference on Nuclear Engineering and the ASME 2012 Power Conference, Anaheim, CA, 2, 321-331, July-Aug. 2012.</li> </ol>	
	<ol> <li>M. Solom, C. Pannier, C. Chance, R. J. Seager, A. E. Lee, J. Green, T. Duong and P. Alicea, "An Addendum: Probabilistic Failure Analysis of a Residual Heat Removal Heat Exchanger During Postulated Loss of Coolant Accident," 2012 20th International Conference on Nuclear Engineering and the ASME 2012 Power Conference, Anaheim, CA, 5, 343-347, July-Aug. 2012.</li> </ol>	
AWARDS AND DISTINCTIONS	<ul> <li>National Merit Scholarship (August 2010 - May 2014)</li> <li>President's Endewed Scholar (August 2010 - May 2014)</li> </ul>	
	<ul> <li>President's Endowed Scholar (August 2010 - May 2014)</li> <li>Director's Encollence Amond (August 2010 - May 2014)</li> </ul>	
	<ul> <li>Director's Excellence Award (August 2010 - May 2014)</li> <li>University Scholar (May 2011 - May 2014)</li> </ul>	
	<ul> <li>Oniversity Scholar (May 2011 - May 2014)</li> <li>Stinson Scholarship (Nuclear Departmental Scholarship) (August 2010)</li> </ul>	
	<ul> <li>Stimson Scholarship (Nuclear Departmental Scholarship) (August 2010)</li> <li>Simmons Scholarship (Nuclear Departmental Scholarship) (April 2013)</li> </ul>	
	<ul> <li>Smillions Scholarship (Nuclear Departmental Scholarship) (April 2013)</li> <li>Tau Pote Di Engineering Honor Society, Member (Nevember 2012, Dresent)</li> </ul>	
	<ul> <li>Alpha Nu Sigma Nuclear Engineering Honor Society, Member (May 2013 - May 2014)</li> </ul>	
	• Phi Kappa Phi Honor Society, Member (May 2013 - May 2014)	
	• Texas A&M Honors Fellow Graduation Distinction (August 2014)	
	• Texas A&M Dean's List (8 Semesters)	
	• Outstanding Achievement Award: Mechanics Scholar (December 2010)	
	• T.R. Spence Engineering Graphics Competition (2nd Place) (May 2011)	
	• Wilson High School Valedictorian (1st out of 90) (June 2010)	
	• Wilson High School Freshman Class President (2006 - 2007)	
	• Wilson High School Junior Class President (2008 - 2009)	
TRAINING PROGRAMS	• NIH Quantitative Biology and Physiology Trainee	

EMPLOYMENT	<ul> <li>Texas A&amp;M Center for Large-Scale Scientific Simulations</li> <li>College Station, Texas</li> <li>Undergraduate Student Researcher</li> <li>April 2012 - May 2014 <ul> <li>Ran computer simulations of nuclear phenomena</li> <li>Tested and optimized computational neutronics simulation models</li> <li>Supervisor: Marvin L. Adams, Ph.D.</li> </ul> </li> </ul>
PROFESSIONAL SOCIETIES & ACTIVITIES	• American Nuclear Society, Texas A&M Student Chapter, Member August 2010 - May 2014
	• Texas A&M Student Engineers' Council, Member September 2011 - May 2014
TECHNICAL SKILLS	<ul> <li>Programming Languages: C++, Perl, Python, FORTRAN</li> <li>Mathematical Software: Matlab</li> <li>Other Software: Solidworks, AutoCAD, Comsol</li> </ul>
NON- TECHNICAL ACHIEVE- MENTS	<ul> <li>Boston University Super Sax, Tenor Saxophone I (2017-Present)</li> <li>Boston University Big Band, Tenor Saxophone I (2015-Present)</li> <li>Texas A&amp;M Jazz Ensemble I, Tenor Saxophone I (2010 - 2014)</li> <li>Texas A&amp;M Hullabaloo Basketball Band, Alto Saxophone (2010 - 2014)</li> <li>Texas A&amp;M Department of Communications Public Speaking Competitie</li> </ul>

• Texas A&M Department of Communications Public Speaking Competition: First Place (2012)