

**Adrien Treuille**  
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## Education

Ph.D., University of Washington. May 2008. Thesis: *Low-dimensional Representations for the Simulation and Control of Complex Dynamics*. Advisor: Zoran Popović

M.S., University of Washington. May, 2006.

B.S. *magna cum laude*, Georgetown University. May 2001.

## Employment

Assistant Professor of Computer Science and Robotics, Carnegie Mellon University, 2008-Present.

Postdoctoral Research Fellow, Biochemistry, University of Washington, 2008.

Visiting Scholar, INRIA Grenoble, France, 2004.

## Awards and Honors

Executive Office of the President, **Invited Panelist for the President's Council of Advisors on Science and Technology**, 2010.

National Science Foundation, **CAREER Award**, 2010-2015.

MIT Technology Review, **Top 35 Innovators in the World Under 35**, 2009.

Carnegie Mellon Faculty, **Dean's Innovation Award**, 2009.

University of Washington, **Research Assistant Innovator Award**, 2007.

**Intel Corporation Fellowship**, 2006-2008.

Link Foundation, **Fellowship for Advanced Simulation and Training**, 2006-2007.

National Science Foundation, **Graduate Research Fellowship**, 2003-2005.

**ARCS Foundation Fellowship**, 2001-2004.

## Journal Publications

Leaver-Fay, A., Tyka, M., Lewis, S., Lange, O., Thompson, J.,<sup>†</sup> Jacak, R., Kaufman, K.,<sup>‡</sup> Renfrew, P., Smith, C., Sheffler, W.,<sup>†</sup> Davis, I., Cooper, S., **Treuille, A.**, Mandell, D., Richter, F., Ban, Y., Fleishman, S., Corn, J., Kim, D., Lyskov, S., Berrondo, M., Mentzer, S., Popovic, Z., Havranek, J., Karanicolas, J., Das, R., Meiler, J., Kortemme, T.,} Gray, J., Kuhlman, B., Baker, D., Bradley, B. "ROSETTA3: An object-oriented software suite for the simulation and design of macromolecules." *Methods in Enzymology* Vol 487, 2011

Cooper, S., Khatib, F., **Treuille, A.** Barbero, J., Lee, J. Beenen, M., Leaver-Fay, A., Baker, D., Popović, Z. "Predicting protein structures with a multiplayer online game." *Nature* Vol 466, 5 August 2010.

Sigal, L., de Aguiar, E., **Treuille, A.**, Hodgins, J. "Stable Spaces for Real-time Clothing." *ACM Transactions on Graphics* 29(3) (SIGGRAPH 2010)

Wicke, M. Stanton, M., and **Treuille, A.**, "Modular bases for fluid dynamics." *ACM Transactions on Graphics* 28(3) (SIGGRAPH 2009)

**Treuille, A.**, Lee, Y., and Popović, Z. "Near-optimal character animation with continuous user control." *ACM Transactions on Graphics* 26(3) (SIGGRAPH 2007)

**Treuille, A.**, Lewis, A., and Popović, Z. "Model reduction for real-time fluids." *ACM Transactions on Graphics* 25(3) (SIGGRAPH 2006)

**Treuille, A.**, Cooper S., and Popović, Z. "Continuum crowds." *ACM Transactions on Graphics* 25(3) (SIGGRAPH 2006)

McNamara, A., **Treuille, A.**, Popović, Z., and Stam, J. "Fluid control using the adjoint method." *ACM Transactions on Graphics* 23(3) (SIGGRAPH 2004)

**Treuille, A.**, McNamara, A., Popović, Z., and Stam, J. "Keyframe control of smoke simulations." *ACM Transactions on Graphics* 22(3) (SIGGRAPH 2003)

## Conference Publications

Cooper, S., **Treuille A.**, Barbero, J., Leaver-Fay, A., Tuite, K., Khatib, F., Snyder, A., Beenen, M., Salesin, D., Baker, D., and Popović, Z. "The challenge of designing scientific discovery games." *5th International Conference on the Foundations of Digital Games.* (FDG 2010)

**Treuille, A.**, Hertzmann, A., and Seitz, S. "Example-based stereo with general BRDFs." *8th European Conference on Computer Vision* (ECCV 2004)

## Commercial Applications

Technical demo of **Continuum Crowds** by **AMD Corporation**, 2008

**Model Reduction for Fluids** technology is the basis for Draft Tracks, the **Emmy®-nominated** real-time NASCAR airflow simulation on **ESPN**, 2007

**Continuum Crowds** licensed to **Microsoft Corporation**, 2006.

**Continuum Crowds** licensed to **Electronic Arts Corporation**, 2006.

## Selected Invited Talks

2010, April	Carnegie Mellon Teruto Yaka Memorial Lecture <i>Advances in Real-time Simulation</i>
2009, November	Bell Laboratories <i>Advances in Real-time Simulation</i>
2009, October	MIT <i>Scientific Discovery Games</i>
2009, September	Harvard University <i>Scientific Discovery Games</i>
2009, April	Foundations of Nanotechnology (Invited Keynote) <i>Scientific Discovery Games</i>
2008, October	Google Tech Talk <i>Advances in Real-time Simulation</i>
2008, October	Carnegie Mellon Dean's Advisory Meeting <i>Advances in Real-time Simulation</i>
2008, August	RosettaCon <i>Scientific Discovery Games</i>

## Gifts and Grants

**Okawa Foundation**, Research Grant Recipient. 2010.

**National Science Foundation**, EAGER Award. 2010-2011.

**Intel**, Gift. 2010. (\$35,000)

**Bell Laboratories**, Equipment Donation. (\$25,000)

**NVIDIA**, Equipment Donation. 2010. (\$25,000)

**Intel**, Equipment Donation. 2010. (\$15,000)

**National Science Foundation**, CAREER Award. 2010-2015.

**Intel**, Gift. 2009. (\$10,000)

## Professional Service

Robotics Institute Seminar Series Chair, 2011.  
Graduate Admissions Committee, Carnegie Mellon. 2010.  
PhD Orientation (Immigration Course) Faculty Chair, Carnegie Mellon. 2010.  
Undergraduate Curriculum Committee, Carnegie Mellon. 2010.  
Graduate Admissions Committee, Carnegie Mellon. 2009.  
PhD Orientation (Immigration Course) Faculty Chair, Carnegie Mellon. 2009.

## Government Service

Invited Panelist for the President's Council of Advisors on Science and Technology, 2010.  
Panelist, National Science Foundation. 2010 (twice).

## Program Committee

Foundations of Digital Games, 2011.  
ACM SIGGRAPH ASIA, 2011.  
ACM SIGGRAPH, 2008, 2009.  
Symposium on Computer Animation, 2007, 2009, 2010

## Reviewer

ACM Transactions on Graphics (including SIGGRAPH) (2003-2010), Computer Graphics and Applications (CG&A) (2010), International Conference on Robotics and Automation (ICRA) (2010), Eurographics (2010)

## Courses

Advanced Parallel Graphics, Spring 2011  
The Animation of Natural Phenomena, Fall 2008 (**4.7/5.0 highest student rating on record for this class**), Fall 2010  
Computer Graphics, Spring 2009 (**4.34/5.0 highest student rating on record for this class**), Spring 2010

## Graduate Students

Jeehyung Lee (2008-Present)  
Matthew Stanton (2008-Present)  
Alex Limpaecher (2010-Present)

## **Selected Press**

John Markoff. "In a Video Game, Tackling the Complexities of Protein Folding." **The New York Times**. August 10, 2010

Mike Cronin. "CMU prof makes game out of science." **Pittsburgh Tribune-Review**. August 28, 2009

"35 Innovators under 35: The Next Generation of Technology." **MIT Technology Review**. October, 2009.

David Edery. "There's Free Labor in Video Games." **The New York Times Freakonomics Blog**. November 5, 2008.

"Return to the fold." **The Economist**. May 8th 2008