

## **VISUALIZATION / COMPUTING EXPERIENCE**

**National Science Foundation**, Arlington, VA: Lead Scientific Animator and Illustrator in Office of Legislative and Public Affairs, 2003-2007.

- Created 3D visualizations of scientific data and dynamical simulation model output, using custom MAXscripts and 3D Studio MAX.
- Conceived and created explanatory 3D animation of scientific and technical subjects for news releases, press conferences, and speeches by Director of NSF. Work included storyboarding, modeling, rigging, and compositing of 3D elements.
- Worked closely with scientists and technical content providers to ensure accuracy of animation.
- Awarded first and second place for animation category in 2005 and 2006 National Association of Government Communicators' Gold Screen competitions, respectively.
- Wrote scripts and narration for scientific animations.
- 3D animation and illustration has appeared in the following broadcast and print media (partial list):

CNN	ABC News	CBS News	BBC World News
PBS NOVA	Washington Post	USA Today	Times of London
Scientific American	Science News	National Geographic.org	NPR.org
Discovery Science	The History Channel	Geotimes Magazine	TIME for Kids
Newsweek	Voice of America News	Space.com	Tech TV

**Scientific Animator**, Washington, DC: Freelance, 2005-Pres.

- Created visualizations of paleoclimate model output for Carnegie Institution Department of Terrestrial Magnetism, using custom scripts, Gri, and 3D Studio Max.
- Created animations explaining technical aspects of internet infrastructure security for Shinkuro Corporation, supported by U.S. Department of Homeland Security.
- Created 3D animations of naval and military subjects for Anteon Corporation's Team Submarine.
- Created stereoscopic animations for Boeing, as contractor with Allen Corporation.

**The Chedd-Angier Production Company**, Watertown, MA: Multimedia Developer, 2001-2002.

- Programmed interactive-TV enhancements of *Scientific American Frontiers*, including Perl scripting. Programmed and maintained company web site.
- Created 3D and 2D illustrations and animations for use in broadcast and print media, museum exhibits, and Web.
- Authored web-based science articles for PBS television show *Scientific American Frontiers*. Conceived and authored interactive-TV enhancements for full broadcast season.

**Penn State University**, State College, PA: Graduate Research Assistant in Meteorology, 1996-2000.

- Created numerical model using Godunov method to simulate hydrodynamic escape of hydrogen in atmospheres of primitive Earth-like planets.
- Manipulated data using custom scripts for use in Line-by-Line Radiative Transfer Model (LBLRTM) and High-Resolution Transmission Molecular Absorption (HITRAN) database, to investigate simulated spectra of hypothetical Earth-like planets with biogenic atmospheres.
- Research resulted in publication and thesis.

## **SOFTWARE PACKAGES USED**

### **Scientific:**

Gri, HITRAN, LBLRTM, Matlab, Mathematica.

### **3D, Animation, and Video:**

Autodesk 3D Studio MAX (currently transitioning to Maya); Blender; Vue; Adobe After Effects, Premiere, Encore DVD; Macromedia Director, Flash; Next Limit Realflow; Maxon BodyPaint 3D; Apple QuickTime Pro; Curious Labs Poser; DAZ 3D Bryce.

### **2D, Web, Illustration, and Publishing:**

Adobe Photoshop, Illustrator, Acrobat; Macromedia Dreamweaver; MS Office.

### **Languages Used:**

MAXScript, JavaScript, Perl, Lingo, C++, FORTRAN, HTML.

## **OTHER EXPERIENCE**

**United States Patent and Trademark Office**, Washington, DC: Patent Examiner, 2007-Pres.

- Researched and determined patentability of patent applications.

**The Ocean Alliance**, Lincoln, MA: Volunteer Educator aboard *Hurricane II*, 2002-2003.

- Authored and edited articles about cetacean biology and behavior.
- Presented interpretive material to mixed groups on weekly trips with Cape Ann Whale Watch. Led discussions with passengers on biological, environmental, and oceanographic topics.

**Penn State University**, University Park, PA: Graduate Assistant, 1996-2000.

- Created new approach to NASA Astrobiology outreach, generating interest at both Jet Propulsion Laboratory and SETI Institute.
- Taught and tutored Earth systems science to general audience at Penn State University.
- Published scientific research in science journals *Icarus* and *Journal of Physics*.

## **EDUCATION**

**M.S., Meteorology:** Penn State University (2000). Chi Epsilon Pi meteorological honor society.

**B.S., Physics, Mathematics Minor:** University of Alabama at Birmingham, *cum laude*, interdisciplinary honors (1995). Omicron Delta Kappa and Golden Key honor societies. Presidential Honors and Dean's List.

## **AFFILIATIONS**

**Member:** ACM SIGGRAPH.