

Research and development for DOE chemistry data sharing project, Collaboratory for Multi-scale Chemical Sciences (<http://cmcs.org>). Responsible for scientific content management system focused on combustion chemistry. Worked on data and metadata management and sharing, including applications in electronic structure calculations, thermodynamic data, kinetics data, flame measurements, and reacting flow simulations. Developed web-based tools for thermodynamic property calculations, reduced reaction mechanism generation, and translations of molecular structure data. Developed the CMCS User Agreement, detailing how a shared data facility affords protections and sharing rights for its users.

Principal, Tangibility

November 1999 — October 2005

Provided technical product management as partner in a three-person product management consulting group.

Contract at Zing Networks, an online digital photo site, with facilities for photo storage, sharing and products. Worked in several roles, resulting in contributions in the areas of technology assessment, technology demonstrations, technology integration, and strategic relationship management. Managed the design and launch of the Sony ImageStation site in June, 2000. This Sony-branded version of the Zing Networks site included significant new features, most notably support for video upload, storage, and sharing.

Internet Services Consultant

July 1999 — October 1999

Performed tasks for an Internet consumer service company, including: creation and administration of online chat sites and merchandise stores; management of customer emails, domain name registration and redirection, user accounts, and server software; maintenance of an ecommerce site, including database maintenance, log generation, and status report scripting.

Director of Application Development, Worlds, Inc.

January 1998 — June 1999

Developed Worlds' second consumer product, Worlds Ultimate 3D Chat, launched on December 13, 1998. Was responsible for content creation and product design. Developed the community management plan for the Worlds Ultimate 3D Chat service.

Product Manager and Production Group Manager, Electric Communities

August 1997 — December 1997

Assumed management of the six-person production group and the several organizations and individuals working under contract to produce content for Electric Communities' products and services. This content includes 3D environments, animated 3D avatars, object catalogs, and web pages.

Product Manager, Electric Communities

February 1997 — August 1997

Developed the product specification for Electric Communities' product, namely, a distributed, customizable product suite for virtual communities on the Internet. The product's platform was based on an extension of Java that afforded secure extensibility.

Producer, Worlds Inc.

October 1995 — January 1997

Produced a \$1.25M real-time, multi-user Internet-based game in conjunction with MGM Interactive. Managed twelve coders and artists and an outsourcing budget of \$500,000.

Produced and coded Worlds Chat Gold, the first commercial 3D multi-user environment on the Internet. Led a five person team while handling the majority of the coding, product design and quality assurance. Worlds' first commercial product, launched on time and within budget on June 24, 1996.

Integrator, Worlds Inc.

December 1994 — October 1995

Developed Worlds Chat, the first 3D multi-user environment on the Internet. Solely responsible for product management and development, including quality assurance, maintenance, expansion, support and documentation.

Developed the WorldServer client/server system (USPTO #6,219,045), with Worlds Chat as the original client implementation.

Developed Cyber Oz City, a 3D multi-user space for the Escot cybercafe in Ebisu, Tokyo, Japan. This was the first commercial 3D chat space, finished on time and within budget.

Developed a several other 3D shared environments as technology demonstrations for several corporate and government clients.

Postdoctoral scientist, UC Berkeley

July 1992 — December 1994

Performed research in fundamental gas-phase reaction dynamics. A list of publications is available online and at request. Demonstrated knowledge and proficiency in a wide array of disciplines, including (but not limited to): quantum mechanics; spectroscopy; gas chemistry; plasma chemistry; data acquisition, analysis and modeling; lasers and optics; high vacuum apparatus; sensitive detection electronics; pulsed high voltage circuitry; plumbing; and machining.

Publications (selected)

Schuchardt, K., O. Oluwole, W. Pitz, L.A. Rahn, J. William H. Green, D. Leahy, C. Pancerella, M. Sjöberg, and J. Dec. Development of the RIOT Web Service and Information Technologies to Enable Mechanism Reduction for HCCI Simulations. In Proceedings of SciDAC 2005, Journal of Physics: Conference Series. (2005): Institute of Physics Publishing, Bristol and Philadelphia, volume 16, pp. 107-112.

"New Approaches for Collaborative Sharing of Chemical Model Data and Analysis Tools," K. Schuchardt, O. Oluwole, W. Pitz, L.A. Rahn, W.H. Green, Jr., D. Leahy, C.

Pancerella, M. Sjöberg, and J. Dec, Proceedings of 2005 Joint Meeting of the U.S. Sections of the Combustion Institute (2005).

"A Collaborative Informatics Infrastructure for Multi-scale Science," James D. Myers, Thomas C. Allison, Sandra Bittner, Brett Didier, Michael Frenklach, William H. Green, Jr., Yen-Ling Ho, John Hewson, Wendy Koegler, Carina Lansing, David Leahy, Michael Lee, Renata McCoy, Michael Minkoff, Sandeep Nijsure, Gregor von Laszewski, David Montoya, Luwi Oluwole, Carmen Pancerella, Reinhardt Pinzon, William Pitz, Larry A. Rahn, Branko Ruscic, Karen Schuchardt, Eric Stephan, Al Wagner, Theresa Windus, and Christine Yang, Proceedings of the Second International Workshop on Challenges of Large Applications in Distributed Environments (CLADE '04) (2004).

"Scalable virtual world chat client-server system," Dave Leahy, Judith Challinger, B. Thomas Adler, and S. Mitra Ardon, United States Patent Office, US patent **US6219045** (2001).

D. L. Osborn, D. J. Leahy, E. H. Kim, E. deBeer, and D. M. Neumark, "Photoelectron spectroscopy of CH_3O^- and CD_3O^- ," *Chem. Phys. Lett.* **292**, 651 (1998).

D. L. Osborn, D. J. Leahy, and D. M. Neumark, "Photodissociation spectroscopy and dynamics of CH_3O and CD_3O ," *J. Phys. Chem. A* **101**, 6583 (1997).

H. Park, D. J. Leahy, and R. N. Zare, "Extensive electron-nuclear angular momentum exchange in vibrational autoionization of np and nf Rydberg States of NO ," *Phys. Rev. Lett.* **76**, 1591 (1996).

K. L. Reid and D. J. Leahy, "Exploiting Polarization in the Study of Molecular Photoionization Dynamics," Chapter 7 of *High Resolution Laser Photoionization and Photoelectron Studies* (John Wiley & Sons Ltd, 1995).

D. J. Leahy, D. L. Osborn, D. R. Cyr, and D. M. Neumark, "Predissociation dynamics of the $\text{O}_2 B^3\Sigma_u^-$ state: Vibrational state dependence of the product fine-structure distribution," *J. Chem. Phys.* **103**, 2495 (1995).

D. L. Osborn, D. J. Leahy, E. M. Ross, and D. M. Neumark, "Study of the predissociation of $\text{CH}_3\text{O} \sim (^2A_1)$ by fast beam photofragment translational spectroscopy," *Chem. Phys. Lett.* **235**, 484 (1995).

D. J. Leahy, D. R. Cyr, D. L. Osborn, and D. M. Neumark, "Observation of the correlated $\text{O } ^3P_{j_1}, \text{O } ^3P_{j_2}$ state distribution from the predissociation of $\text{O}_2 B^3\Sigma_u^-$," *Chem. Phys. Lett.* **216**, 503 (1993).

D. R. Cyr, D. J. Leahy, D. L. Osborn, R. E. Continetti, and D. M. Neumark, "Fast beam photodissociation of the CH_2NO_2 radical," *J. Chem. Phys.* **99**, 8751 (1993).

D. J. Leahy, K. L. Reid, H. Park, and R. N. Zare, "Measurement of circular dichroism in rotationally resolved photoelectron angular distributions following the photoionization of $\text{NO } A^2\Sigma^+$," *J. Chem. Phys.* **97**, 4948 (1992).

K. L. Reid, D. J. Leahy, and R. N. Zare, "Complete description of molecular photoionization from circular dichroism of rotationally resolved photoelectron angular distributions," *Phys. Rev. Lett.* **68**, 3527 (1992).

D. J. Leahy, K. L. Reid, and R. N. Zare, "Complete description of two-photon (1+1') photoionization of NO deduced from rotationally resolved photoelectron angular distributions," *J. Phys. Chem.* **95**, 1757 (1991).

K. L. Reid, D. J. Leahy, and R. N. Zare, "Effect of breaking cylindrical symmetry on photoelectron angular distributions resulting from resonance-enhanced two-photon ionization," *J. Phys. Chem.* **95**, 1746 (1991).

S. W. Allendorf, D. J. Leahy, D. C. Jacobs, and R. N. Zare, "High resolution energy- and angle-resolved photoelectron spectroscopy of NO: Partial wave decomposition of the ionization continuum," *J. Chem. Phys.* **91**, 2216 (1989).