David J. Leahy, Ph.D.
7643 NE Champagne Pt. Pl.
Kirkland, WA 98034
925-200-5968
leahy@leahy.to

Education

PhD, Chemical Physics, Stanford University June 1992
Advisor, Richard N. Zare
Thesis Title: "Complete Description of the Photoionization Dynamics of Nitric Oxide"
BS, Chemistry, California Institute of Technology June 1987

Objective

A position in laboratory management.

Background

Skilled at fostering a lively, innovative, creative atmosphere through effectively managing diverse and idiosyncratic groups, including people with a wide range of talents and experience. Experienced in scientific research, including work involving lasers (solid state and gas phase), optics, spectroscopy, high vacuum, and instrumentation. Effective at design, development and application of new technology environments under highly constrained time schedules. Devoted to delivering complicated new products on time and under budget. Sharper than a brass tack. Hard-working by habit and inclination.

Professional Experience

Consultant, Intellectual Ventures Laboratory August 2013 – September 2014

Investigated energy levels of light pulses required to kill *Anopheles Stephensi* mosquitoes, with the aim of developing a system to mitigate the risk of malaria.

Senior Research Associate, Stanford University October 2005 — August 2010

Lab Manager for Professor Richard N. Zare, Chemistry Department, Stanford University. Responsible for oversight of personnel, budgets, research proposals, and ongoing research operations for a research group with over a dozen sponsored and unrestricted accounts totaling $1.6M/year. Experienced in all aspects of research lab logistics. Duties included preparation of successful research proposals for NSF, NIH, AFOSR, and NASA, along with private companies and non-governmental research foundations. Contributed to laboratory efforts in research projects ranging from chemical physics to microfluidics.

Senior Member of the Technical Staff, Sandia National Laboratories
January 2002 — September 2005

Co-principal investigator for five year NIH data and tool sharing project, the Collaboratory for MS3D. Research in collaborative environments for protein

structure studies using high resolution mass spectrometry tools. Focus on analysis tool sharing, data reduction workflow, and data and metadata management.

Research and development for DOE chemistry data sharing project, Collaboratory for Multi-scale Chemical Sciences. 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.

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
February 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.

Integrator and Producer, Worlds Inc. December 1994 — 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.

Developed Worlds Chat, the first 3D multi-user environment on the Internet, launched April 1995. Solely responsible for product management and

development, including quality assurance, maintenance, expansion, support and documentation. Followed on with a commercial version Worlds Chat Gold in June, 1996.

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

Postdoctoral scientist, UC Berkeley July 1992 — December 1994

Performed research in fundamental gas-phase reaction dynamics. Demonstrated knowledge and proficiency in a wide array of disciplines, including (but not limited to): lasers and optics; high vacuum apparatus; sensitive detection electronics; pulsed high voltage circuitry; quantum mechanics; spectroscopy; gas chemistry; plasma chemistry; data acquisition, analysis and modeling; 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 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 CH_3O ~ ($^2A_1$) 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 O $^3P_{j1}$, O $^3P_{j2}$ state distribution from the predissociation of 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 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).

Statement of research expertise:

BS in Chemistry from Caltech; PhD in Chemical Physics from Stanford University. 12.5 years in basic reaction dynamics (five at Stanford University under Richard N. Zare, 2.5 years at UC Berkeley under Daniel Neumark, and five more years as lab manager for Richard Zare). Greatest expertise in the areas of high vacuum instrumentation, lasers, optics, and detection of ions, electrons and light. Knowledgeable in capillary electrophoresis, mass spectrometry, microfluidics, and synthesis and characterization of nanoparticles. Experienced in data acquisition, analysis and data management (including four years working with the Collaboratory for Multiscale Chemical Sciences at Sandia National Labs).

Statement of expertise in desired qualifications for this position:

I am experienced in the development of research proposals in a wide range of chemical disciplines, for an equally wide range of government and non-governmental sponsors (including DOE, NSF, NIH, NASA, AFOSR, Army Research Office, HHMI, Beckman-Coulter, Picarro, and Skymoon Ventures). I managed the budget for generally about a dozen projects at any one time, totalling up to $2M/year, for Richard N. Zare; also performed reporting for these projects. While at Sandia National Laboratories, I co-developed a proposal with NIH, resulting in just the second successfully funded NIH award at Sandia/Livermore. I played a central role in the development and operation of the Collaboratory for Multiscale Chemical Sciences, a $2.5M/year project that included a total of eight separate contributing sites, including five National Labs (SNL, PNNL, ANL, LANL, and LLNL). Willing to travel as the job may require.