CHEMICAL HERITAGE FOUNDATION

Z. HONG ZHOU

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview Conducted by

Robin Mejia

at

University of Texas Health Science Center Houston, Texas

on

16, 17, and 18 May 2006

From the Original Collection of the University of California, Los Angeles

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Z. HONG ZHOU

1965	Born in Hunan Province, China, on 2 March
	Education
1986	B.S., Physics (with BS thesis research in chemistry), University of Science and Technology of China
1989 1995	M.S., Physics, University of Science and Technology of China Ph.D., Biochemistry, Baylor College of Medicine
	Professional Experience
	University of Houston, Houston, Texas
1995-1997	NLM/NIH sponsored postdoctoral trainee in high performance computing, Department of Mathematics and Department of Computer Sciences
	University of Texas Health Science Center, Houston, Texas
1997-2001	Assistant Professor, Department of Pathology and Laboratory Medicine
1997-present	Faculty Member, Biochemistry and Molecular Biology, Virology and Gene Therapy, and Molecular Pathology, Graduate School of Biomedical Sciences
1999-2001	Assistant Professor, Department of Health Informatics, School of Health Information Sciences
2001-present	Adjunct Associate, Department of Health Informatics, School of Health Information Sciences
2001-present	Associate Professor (with tenureDepartment of Pathology and Laboratory Medicine
	W. M. Keck Center for Computational Biology
1998–present	Faculty member
1998–present	Houston-Area Molecular Biophysics Program (supported by NIH) Faculty member
2000-present	Baylor College of Medicine, Houston, Texas Adjunct Associate Professor, Structural and Computational Biology and Molecular Biophysics Program

Honors

1991-1995	Numerous oral and poster presentation awards as trainees
1992-1995	W.M. Keck pre-doctoral fellow in computational biology
1995	Best Ph.D. Dissertation Award, Rice University/University of Texas
	Medical Center Sigma Xi Society
1995-1997	NLM/NIH-sponsored postdoctoral trainee
1999-2003	Pew Scholar in the Biomedical Sciences
2000	Basil O'Connor Scholar Award of the March of Dimes Foundation
2002	Established Investigator Award from the American Heart Institute
2004	Burton Award from the American Microscopy Society

Selected Publications

- Jia, C.-Z., Zhou, Z.-H., Xie, X.-S., Jin, T., Shen, H.-J., Xu, B., Xia, J.-D. (1990) Observation of an X-ray image by transmission electron microscope at HEFEI, In: *X-ray Microscopy in Biology and Medicine*, ed. by K. Shinohara et al., Japan Sci. Soc. Press, Tokyo/Springer-Verlag, Berlin, 247-250.
- Xie, X., Jia, C., Zhou, Z.H., Zhang, Y., Zhao, Y., Wang, M. (1992) Progress of the soft x-ray microscopy project at Hefei, In: *X-Ray Microscopy III*, ed. by AG Michette, GR Morrison, CJ Buckley. Berlin Springer-Berlay. 157-159.
- Zhou, Z.H., Chiu, W. (1993) Prospects for using an IVEM with a FEG for imaging macromolecules towards atomic resolution, *Ultramicroscopy*, 49, 407-416.
- Zhou, Z.H., Prasad, B.V.V., Jakana, J., Rixon, F.J. Chiu, W. (1994) Protein subunit structures in the herpes simplex virus A-capsid determined from 400 kV spot-scan electron cryomicroscopy, J. Mol. Biol., 242, 456-469. (featured on front cover)
- Lu, G.Y., Zhou, Z.H., Jakana, J., Cai, D.Y., Chen, S.X., Wei, X.C., Gu, X.C., and Chiu, W. (1995) Three-dimensional structure of rice dwarf virus by electron cryomicroscopy, *High Tech. Let.* 5, No 1, 1-4.
- Lamture, J.B., Zhou, Z.H., Kumar, A.S., Wensel, T.G. (1995) Luminescence properties of Terbium (III) complexes with 4-substituted dipicolinic acid analogues, *Inorganic Chem.*, 34, No.4, 864-869.
- Zhou, Z.H., He, J., Jakana, J., Tatman, J.D., Rixon, F.J., Chiu, W. (1995) Assembly of VP26 in herpes simplex virus-1 inferred from structures of wild-type and recombinant capsids, *Nature Struct. Biol.*, 2, No. 11, 1026-1030.
- Zhou, Z.H. (1996) (review) Three-dimensional reconstruction of macromolecular assemblies by electron cryomicroscopy, *Chinese J. Electr. Microsc.*, 15(2-4), 291-300.
- Zhou, Z.H., Hardt, S., Wang, B., Sherman, M.B., Joanita, J., Chiu, W. (1996) CTF determination of images of ice-embedded single particles using a graphics interface, *J. Struct. Biol.*, 116, 2 16-222.
- Johnson, O., Govindan, V., Park, Y., Zhou, Z.H. (1997) Custom virtual memory policies for an image reconstruction application, *Proceedings of the 4th International Conference on High Performance Computing*, IEEE Computer Society Press (Los Alamitos, CA). 5 17-521.

- Zhou, Z.H., Chiu, W., Haskell, K., Spears, H., Jakana, J., Rixon, F.J., Scott, L.R. (1998) Refinement of herpesvirus B-capsid structure on parallel supercomputers, *Biophysical J.*, 74, 576-588.
- Zhou, Z.H., Macnab, S.J., Jakana, J., Scott, L.R., Chiu, W., Rixon, F.J. (1998) Identification of the sites of interaction between the scaffold and outer shell in HSV-1 capsids by difference electron imaging, *Proc. Natl. Acad. Sci. USA*, Vol. 95 (6), 2778-2783.
- Lu^{*}, G., Zhou^{*}, Z.H., Baker, M.L., Jakana, J., Cai, D., Wei, X., Chen, S., Gu, X., Chiu, W. (1998) Structure of double-shelled rice dwarf virus, *J. Virology*, Vol. 72 (11), 8541-8549. * Authors contributed equally.
- Zhang, H., Zhang, J., Yu, X., Lu, X., Zhang, Q., Jakana, J., Chen, D., Zhang, X., Zhou, Z.H. (1999) Visualization of protein-RNA interactions in cytoplasmic polyhedrosis virus, *J. Virology*, Vol. 73 (2), 1624-1629. (featured on front cover)
- Yu, X.-K., Lu, X.-Y., Zhang, H., Zhou, Z.H., Zhang, X., Zhang, J.Q.(1999) Structure of cytoplasmic polyhedrosis virus from *Bombyx mori*. *Acta Biochemica et Biophysica Sinica*, 31(5): 563-566.
- Zhou, Z.H., Chen, D.H., Jakana, J., Rixon, F.J., Chiu, W. (1999) Visualization of tegument/capsid interactions and DNA in intact herpes simplex virus type 1 virions, J. Virology, Vol. 73 (4), 3210-3218. (featured on front cover)
- Saad, A., Zhou, Z.H., Jakana, J., Chiu, W., Rixon, F.J. (1999) Roles of triplex and scaffolding proteins in HSV-1 capsid formation suggested by the structures of recombinant particles. J. Virology. Vol. 73(8), 682 1-6830. (featured on front cover)
- Chen, D. H., Jiang, H., Lee, M., Liu, F., Zhou, Z.H. (1999) Three-dimensional visualization of tegument/capsid interactions in the intact human cytomegalovirus. *Virology*, Vol 260, 10-16. (featured on front cover)
- Zhou, Z.H., Dougherty, M., Jakana, J., He, J., Rixon, F.J., Chiu, W. (2000) Seeing the herpesvirus capsid at 8.5 Å. *Science*, Vol. 288, 877-880.
- Wu, L., Lo, P., Yu, X.K., Stoops, J.K, Forghani, B., Zhou, Z.H. (2000) Three-dimensional structure of human herpesvirus 8 capsid. *J. Virol.* Vol. 74(20), 9646-9654. (featured on front cover)
- Zheng, D., Xue, T., Chen, D., Zheng, M., Zhou, Z.H., Xu, W. (2000) Visualization of RHDV particles packaging genomic and subgenomic RNAs by electron cryomicroscopy. *J. Chinese Electr. Microsc. Soc.* Vol. 19, No. 5, 661-666.
- Shao, C., Zhou, Z.H., Lu, G. (2001) The three-dimensional structure of the rice dwarf virus core. *Science in China*. Series C-Life Sciences, Vol. 44, No. 2, 192-198.
- Zheng, D., Chen, D., Xue, T., Zheng, M., Zhou, Z.H., Xu, W. (2001) Three-dimensional structure of the rabbit hemorrhagic disease virus by electron cryomicroscopy and image reconstruction. *Chinese Science Bulletin*. Vol. 46, No. 12, 1005-1009. (featured on front cover)
- Zhou, Z.H., Liao, W., Cheng, R.H., Lawson, J.E., McCarthy, D.B., Reed, L.J., Stoops, J.K. (2001) Direct Evidence for the Size and Conformational Variability of the Pyruvate Dehydrogenase Complex Revealed by 3-D Electron Microscopy: the "Breathing" Core and its Functional Relationship to Protein Dynamics. *J. Biol. Chem.* Vol 276, 21704-21713.
- He, J., Schmid, M.F., Zhou, Z.H., Rixon, F.R., Chiu, W. (2001) Finding and Using Local Symmetry in Identifying Lower Domain Movements in Hexon Subunits of the Herpes Simplex Virus Type 1 B Capsid. *J. Mol. Biol.*, Vol. 309, 903-9 14. (featured on front cover)

- Zhou, Z.H., Baker, M.L., Jiang, W., Dougherty, M., Jakana, J., Dong, G., Lu, G., Chiu, W. (2001) Electron cryomicroscopy and bioinformatics suggest protein fold models for rice dwarf virus. *Nature Struct. Biol.*, Vol. 8, No 10, 868-873. (featured on front cover and highlighted in *Nature*, vol 413, page 11,2001)
- Chen, D.-H., Jakana, J., McNab, D., Mitchell, J., Zhou, Z.H., Dougherty, M., Chiu, W., Rixon, F.J. (2001) The pattern of tegument-capsid interaction in the herpes simplex virus type 1 virion is not influenced by the small hexonassociated protein VP26. *J. Virol.*, Vol. 75, No. 23, 11863-11867.
- Zhang, J., Feng, J., Liang, Y., Chen, D., Zhou, Z.H., Zhang, Q., Lu, X. (2001) Threedimensional structure of the Chinese sacbrood bee virus. *Science in China* (Series C), Vol. 44 No. 4, 443-449.
- Zhou, Z.H., McCarthy, D.B., O'Connor, C.M., Reed, L.J., Stoops, J.K. (2001) The remarkable structural and functional organization of the eukaryotic pyruvate dehydrogenase complexes. *Proc. Natl. Acad. Sci.* Vol. 98, No 26, 14802-14807.
- Chiu, W., Baker, M.L., Jiang, W., Zhou, Z.H. (2002) Deriving folds of macromolecular complexes through electron cryomicroscopy and bioinformatics. *Curr. Opin. Struct. Biol.*, 12(2), 263-269. (featured on the front cover)
- Zhang, H., Yu, X.-K., Lu, X.-Y., Zhang, J.-Q., Zhou, Z.H. (2002) Molecular interactions and viral stability revealed by structural analyses of chemically-treated cypovirus capsids. *Virology*, 298, 45-52. (featured on front cover)
- Liang, Y., Ke, E.Y., Zhou, Z.H. (2002) IMIRS: a high-resolution 3D reconstruction package integrated with a relational image database. *J. Struct. Biol.* 137, 292-304.
- Liang, Y., Jakana, J., Yu, X.-K., Chiu, W., Zhang, J.-Q. and Zhou, Z.H. (2002) High-resolution imaging and preliminary 3D reconstruction of cytoplasmic polyhedrosis virus. *J. Chinese Electr. Microsc. Soc.* Vol. 21, No. 3, 326-330.
- Li, L., Chen, D., Zhou, Z.H., Zhang, J. and Hu, Y. (2002) Comparative three-dimensional structure analyses of *Periplaneta fuliginosa* densovirus, *Chinese Science Bulletin*, Vol. 47, No. 23, 1807-1810.
- Xia, Q., Jakana, J., Zhang, J.-Q., Zhou, Z.H. (2003) Structural comparisons of empty and full CPV: protein-RNA interactions and implications for endogenous RNA transcription mechanisms. *J. Biol. Chem.*, 278, 1094-1100.
- Lo, P., Yu, X., Atanasov, I., Chandran, B., Zhou, Z.H. (2003) Three-dimensional localization of pORF65 in Kaposi's sarcoma-associated herpesvirus capsid. *J. Virol.*, 77, 422 1-4230.
- Zhou, Z.H.* and Chiu, W. (2003) Determination of icosahedral virus structures by electron cryomicroscopy at subnanometer resolution. *Advances in Protein Chemistry*. Vol. 64, 93-124 (Ed.) Chiu, W. & Johnson, J.*corresponding author
- Lu, B.-Y., Atanasov, I., Zhou, Z.H. and Chang J.-Y. (2003) Reversible aggregation of mouse prion protein derivatives with PrPsc-like structural properties. *J. Prot. Chem.*, Vol. 22, No. 2, 115-126.
- Zhou, Z.H.*, Zhang, H., Jakana, J., Lu, X.-Y., Zhang, J.-Q. (2003) Cytoplasmic polyhedrosis virus structure at 8 Å by electron cryomicroscopy: structural basis of capsid stability and mRNA processing regulation. *Structure*, Vol 11(6), 651- 663. (featured on front cover and pre-viewed in *Structure* 11, 605-6107, 2003) *corresponding author
- Gu, Y., Zhou, Z.H., McCarthy, D.B., Reed, L.J., Stoops, J.K. (2003) Protein dynamics of the pyruvate dehydrogenase complex: three-dimensional electron microscopy reveals the variable

deposition of the peripheral pyruvate dehydrogenase component about the core. *Proc. Natl. Acad. Sci.* 100(12): 7015- 20.

- Kong, Y., Ming, D., Wu, Y., Stoops, J.S., Zhou, Z.H., Ma, J. (2003) Conformational flexibility of pyruvate dehydrogenase complexes: a computational analysis by quantized elastic deformational model. *J. Mol. Biol.*, Vol. 330, 129-135.
- Baker, M.L., Jiang, W., Bowman, B.R., Zhou, Z.H., Quiocho, F.A., Rixon, F.J., Chiu, W. (2003) Architecture of the herpes simplex virus major capsid protein derived from structural bioinformatics. *J. Mol. Biol.*, Vol. 331, 447-456.
- Yu, X.-K., O'Connor, C.M., Atanasov, I., Damania, B., Kedes, D.H., Zhou, Z.H. (2003) Threedimensional structures of the A, B, and C capsids of Rhesus monkey Rhadinovirus: insights into gammaherpesvirus capsid assembly, maturation and DNA packing. *J. Virol.*, Vol 77, 13182-13193. (feature on cover of Vol 78, No. 1)
- Dai, W., Liang, Y., Zhou, Z.H. (2003) Web portal to an image database for high-resolution three-dimensional reconstruction. *J. Struct. Biol.*, 144:238-45.
- Bortz, E., Whitelegge, J.P., Jia, Q., Zhou, Z.H., Stewart, J.P., Wu, T.-T., Zhou, Z.H., Sun, R., (2003) Identification of proteins associated with murine gammaherpesvirus-68 virions. *J. Virol.*, Vol 77, 13425-13432.
- Chen, S., Chen, L., Zhang, Q., Deng, Y., Lin, W., Lu, X., Brannan, J., Zhou, Z.H.*, Zhang, J. (2004) Genetic, biochemical and structural characterization of a new densovirus isolated from a chronically infected Aedes albopicus C6/36 cell line. *Virology*, *318*, 122-133.
 *corresponding author
- Booth, C., Jiang, W., Baker, M.L., Zhou, Z.H., Ludtke, S.J., Chiu, W. (2004) A 9 Å Single Particle Reconstruction from CCD Captured Images on a 200 kV Electron Cryomicroscope. J. Struct. Biol. Vol. 147, 116-127 (featured on cover).
- Wan, Y., Chiu, W., Zhou, Z.H. (2004) Full contrast transfer function correction in 3D cryo-EM reconstruction. IEEE Proceedings of ICCCAS 2004 (in press).
- Yu, X., S. Shah, I. Atanasov, P. Lo, F. Liu, W. J. Britt and Z. H. Zhou (2004) Threedimensional localization of smallest capsid protein in human cytomegalovirus capsid, *J. Virol.* In Press (JVI01483-01404).
- Zhou, Z. H. (2000) (review) Transmission electron cryomicroscopy and three-dimensional reconstruction of macromolecular complexes. In Progress in Transmission Electron Microscopy (Zhang, X. ed.), Springer-Verlag / Tsinghua University Press (Beijing, China). 309-328.
- Zhou, Z.H.*, Stoops, J.K. and Reed, L.J., (2003) Structural and functional organization of pyruvate dehydrogenase complexes. In: Thiamine: Catalytic Mechanisms in Normal and Disease States, Jordan F. & Patel M.S. (Eds), Marcel Dekker Inc., New York. Chapter 18: pp 309-330 (DOI: 10.1081/B). *corresponding author.
- Liu, F. and Zhou, Z.H. (2004) Comparative virion structures of human herpesviruses. In: Human Herpesviruses: Biology, Therapy, and Immunoprophylaxis. Roizman, B. et al. (Eds) Cambridge University Press. In press.
- Mertens, P.P.C., Rao, S. and Zhou, H. (2004). Cypovirus, Reoviridae. In: Virus Taxonomy, VIIIth Report of the ICTV (C.M. Fauquet, M.A. Mayo, J. Maniloff, U. Desselberger, and L.A. Ball, eds), 522-53 3. Elsevier/Academic Press, London. (in press).

ASBTRACT

Z. Hong Zhou was born in Hunan Province in China the year before the Cultural Revolution, the eldest of three siblings. His father was a factory worker who was home only one day a week; his mother a housewife who cared for her children. Though in school, Zhou felt as if he had little to no education prior to middle school, since the first few years of the Revolution were spent trying to organize an educational system (Zhou's first-grade teacher held class in an abandoned building found in the area). At the end of the Cultural Revolution, though, China committed itself to science and Zhou's father, in response, spent a month's salary on buying a set of science books for Zhou to encourage his education. At the age of fourteen Zhou went off to high school at a boarding school a distance away from his village, not returning to see his home for over a year.

Zhou did well on his college entrance exams and, with an intense interest in high-energy physics, he applied to and was accepted at the University of Science and Technology of China in Hefei. Ultimately he received a master's degree under Lienchao Tsien conducting research using cyclotron radiation imaging, also intending to pursue a doctoral degree abroad. He started his graduate education at New York University but then moved on to the Baylor College of Medicine in Houston, Texas, working in Wah Chiu's laboratory—his doctoral thesis focused on imaging the herpes virus. After meeting L. Ridgway Scott, Zhong decided to undertake a postdoctoral fellowship as a National Library of Medicine/National Institutes of Health-sponsored trainee in the Departments of Mathematics and of Computer Sciences at the University of Houston under Scott developing computational biology methods. From there he accepted a position at the University of Texas Medical Center studying viruses using structural and computational biology.

At the end of the interview Zhong talks about balancing his family life and his career; the impact of the Pew Scholars Program in the Biomedical Sciences on his work; his lab management style; and the practical applications of his research. He also discusses his collaboration with industry; his future research developing the technology of imaging while studying viral cell interactions; and the process of conducting scientific research before speaking more about the role of the Pew Scholars Program in the Biomedical Sciences in his research.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Robin Mejia, Interviewer, UCLA Oral History Program; B.A., Biology, University of California, Santa Cruz, 1997

TIME AND SETTING OF INTERVIEW:

Place: Zhou's office at the University of Texas Health Science Center

Dates: May 16, 17, and 18, 2006.

Total number of recorded hours: approximately 4.5 hours

Persons present during interview: Mejia and Zhou

CONDUCT OF INTERVIEW:

This interview is one in a series with Pew Scholars in the Biomedical Sciences conducted by the UCLA Oral History Program in conjunction with the Pew Charitable Trusts' Pew Scholars in the Biomedical Sciences Oral History and Archives Project. The project has been designed to document the backgrounds, education, and research of biomedical scientists awarded four-year Pew scholarships since 1988.

To provide an overall framework for project interviews, the director of the UCLA Oral History Program and three UCLA faculty project consultants developed a topic outline. In preparing for this interview, Mejia corresponded with Zhou by email and talked by phone to obtain background material, including Zhou's CV, and to schedule the interview. Mejia also obtained and read copies of Zhou's published articles, reviewed descriptions of his work on his website, and reviewed background information on the institutions at which he has worked and the countries in which he has lived.

ORIGINAL EDITING

Carol Squires edited the interview. She edited for punctuation, paragraphing, and spelling, and verified proper names. Words and phrases added by the editor have been bracketed.

Zhou did not review the transcript. Consequently, some proper names and other information remain unverified.

TABLE OF CONTENTS

Growing Up in China and College

Family background. Early education. Siblings. Attends high school in Hunan Province, China. Childhood experiences. Influential teachers. Interest in physics. College entrance examinations in China. High school physics teacher. Parental expectations. Reasons for choosing the University of Science and Technology of China. Majors in physics. Education in China after the Cultural Revolution. Extracurricular activities. College experiences. Decides to attend graduate school abroad. Getting passport. Earns a master's degree in physics at University of Science and Technology of China.

Master's Research, Graduate School Abroad, and Postdoctoral Work Master's research under Lienchao Tsien using cyclotron radiation imaging. Applying to United States graduate schools from China. College job. Attends New York University. Marries. First experiences in New York. Move to Wah Chiu's laboratory at Baylor College of Medicine in Houston. Doctoral thesis under Chiu imaging the herpes virus. Meets and works as a postdoctoral fellow for L. Ridgway Scott developing computational biology methods. Scott's mentoring style. Personal goals. Reasons for choosing electron microscopy and structural biology. Future research direction. Wife's career. Balancing family and career. Accepts position at University of Texas Medical Center. Setting up lab. Children.

The University of Texas Health Science Center and Final Thoughts 58 More on setting up laboratory. Current research studying viruses using structural and computational biology. Pew Scholars Program in the Biomedical Sciences. Wah Chiu's mentoring style. Grant-writing process. Writing journal articles. Role in the lab. Typical workday. Lab management style. Administrative duties. Practical applications of research. Collaboration with industry. Future research developing the technology of imaging while studying viral cell interactions. Duties to professional community. Professional goal. More on Pew Scholars Program in the Biomedical Sciences.

Index

91

1

30

INDEX

A

Albany, New York, 62 American Heart Association, 70 Arizona, 65

B

Baylor College of Medicine, 38, 41 Beijing University, 16 Beijing, China, 15, 35 bioinformatics, 51, 52, 53, 88 Boy Scouts of America, 59 Brooklyn, New York, 36

С

California, 58, 77 Cell, 41 Ch'ing dynasty, 7, 31 China, 1, 2, 3, 6, 7, 8, 11, 15, 16, 17, 18, 19, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 45, 47, 49, 56, 60, 65, 74, 79 Chinese Academy of Sciences, 16 Chinghua University, 15, 16, 79 Chiu, Wah, 37, 38, 39, 40, 42, 43, 55, 61, 62, 64, 66, 67 Claudie, Tony, 65 Clear Lake, Texas, 48 collaboration, 79, 87 CPV. See cytoplasmic polyhedrosis virus CryoEM. See electron cryomicroscopy crystallography, 46, 50, 80, 81, 83, 84, 89 Cultural Revolution, 1, 2, 4, 5, 6, 7, 12, 17 cyclotron, 30, 31, 32, 37, 62 cytomegalovirus, 53, 54, 56, 70 cytoplasmic polyhedrosis virus, 56, 79

D

Deng, Xiaoping, 6

E

Einstein, Albert, 18

electron cryomicroscopy, 53, 57, 81, 82, 83, 84, 89 electron microscopy, 37, 38, 39, 46, 47, 53, 61, 62, 79, 82 electron tomography, 63, 81, 84 England, 31 Europe, 18, 55

F

Frank, Joachim, 57, 62

G

gender, 77, 78 Girl Scouts of America, 59 Gordon Research Conferences, 55 grants/funding, 56, 61, 63, 64, 65, 67, 70, 73, 74, 75, 84, 85, 86, 88

Η

Halliburton Company, 48 hantavirus, 25, 40 Harrison, Stephen, 81 Harvard University, 53, 81 herpes, 40, 41, 47, 50, 53, 54, 55, 64, 80 HIV. *See* human immunodeficiency virus Houston, Texas, 1, 30, 37, 42, 45, 46, 57, 61, 62, 66, 78, 87, 88 Howard Hughes Medical Institute, 57, 67 human immunodeficiency virus, 82 Hunan Province, China, 1, 7, 16, 23 Hunter, Robert L., 57

I

IEEE. *See* Institute of Electrical and Electronics Engineers Institute of Electrical and Electronics Engineers, 52

J

Johnson & Johnson, 83

Κ

Kaposi's Sarcoma, 80 Keck Foundation, 37, 42

L

Landmark, 48 Liu, Fengyong, 17, 21, 22, 27, 28, 29, 49, 56, 80 Lu, Sangwei, 49

Μ

Madison, Wisconsin, 31 Mao, Chairman Zedong, 1, 7, 12 Medical Research Council, 65 Memorial Hermann Hospital, 59

Ν

National Aeronautics and Space Administration, 48 National Center for Macromolecular Imaging, 62 National Institutes of Health, 55, 62, 63, 64, 65, 68, 69, 78, 79, 85, 88 National Resource Center, 62 *Nature*, 71 New York City, New York, 35, 36, 37, 45 New York University, 32, 33, 34, 36, 37 NIH. *See* National Institutes of Health Norris, Steven J., 71 NYU. *See* New York University

Р

Peking University, 16
Pew Scholars Program in the Biomedical Sciences, 1, 27, 44, 45, 64, 65, 66, 70, 86, 89, 90
publish/publication, 31, 39, 41, 42, 44, 46, 56, 69, 83
PubMed, 69
Purdue University, 81

R

Rice University, 42, 74

Rickson, Fraser, 80 Rossman, Michael, 81

S

San Diego, California, 23 Science, 71 Scott, L. Ridgway, 41, 42, 43, 55, 64 Shanghai, China, 15 Sorensen, Dan, 42 Steven, Alasdair C., 55 Stoops, James K., 57 Stryer, Lubert, 40 Stuart, David, 81

Т

Tang, Ginxiu, 3, 9 tenure, 77, 86 Tsien, Lienchai, 31

U

United Kingdom, 31, 65, 80 United States of America, 4, 18, 20, 21, 22, 23, 25, 27, 30, 31, 32, 34, 45, 47, 48, 65, 87 University of California, Berkeley, 17, 27, 62,80 University of California, Los Angeles, 87 University of Cambridge, 31 University of Houston, 48 University of Oxford, 31, 81 University of Science and Technology, 16, 18, 28, 30, 32, 49 University of Texas, 1, 24, 30, 53, 74, 77, 83 University of Texas Medical Center, 1, 24, 30, 57

University of Wisconsin, 32

V

Voice of America, 19

W

W.M. Keck Center for Interdisciplinary Bioscience Training, 74 Wadsworth Center, New York State Department of Health, 57
Wang, Bin (wife), 11, 23, 33, 45, 57, 59, 60, 74, 87
Wang, Laurie (daughter), 10, 49, 57, 58, 59, 74
Wensel, Theodore G., 39, 46
Wuhan University, 23

Y

Yale University, 49, 53 Yiyang, Hunan Province, China, 7

Z

Zhou, Brady (son), 58, 59, 74