




Christopher Lock

Clinical Associate Professor, Neurology & Neurological Sciences

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICE (PRIMARY)

- **Stanford Neuroscience Health Center**

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Bio

CLINICAL FOCUS

- Multiple Sclerosis
- Neuroimmunology
- Clinical Neurophysiology

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Neurology & Neurological Sciences

ADMINISTRATIVE APPOINTMENTS

- Clinical Trials Director, Stanford Multiple Sclerosis and Neuroimmunology Program, (2015- present)
- Member, SHC Pharmacy and Therapeutics Specialty Drug Sub-Committee, (2016-2017)

HONORS AND AWARDS

- Entrance Scholarship, Westminster Hospital Medical School, London, UK (1974)
- Neuroimmunology Fellow, National Multiple Sclerosis Society (1997-2000)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Director, San Francisco Neurological Society (2024 - present)
- Board Member, California Neurological Society (2023 - present)
- Member, American Academy of Neurology (1994 - present)

PROFESSIONAL EDUCATION

- Residency: Stanford University Dept of Neurology (1997) CA
- Board Certification: Neurology, American Board of Psychiatry and Neurology (2020)
- Fellowship: Stanford University Neuroimmunology and Multiple Sclerosis Fellowship (2000) CA

- Internship: Stanford University Internal Medicine Residency (1994) CA
- Medical Education: Westminster Medical School (1980) England

LINKS

- Support our research: <http://med.stanford.edu/neurology/research.html>
- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

Research & Scholarship

CLINICAL TRIALS

- A Study to Investigate the Safety, Tolerability, and Processing by the Body of Intravenous and Subcutaneous RO7121932 in Participants With Multiple Sclerosis., Recruiting

Publications

PUBLICATIONS

- **High-dimensional, targeted immunogenetic profiles of "idiopathic" myelitis with correlative risk and protective factors**
Sarkar, T., Sumera, J., Tomczak, A., Bachar, S., Ton-Nu, C., Joseph, Y., Lee, J., Osoegawa, K., Vina, M., Wu, D., Nie, E., Sattarnezhad, N., McDonald, et al
SAGE PUBLICATIONS LTD.2024: 1230-1231
- **Paired serum and CSF immunoprofiling guides treatment of refractory CNS autoimmunity**
Wu, D., Sarkar, T., Nie, E., Galetta, K., McDonald, J., Tomczak, A., Sumera, J., Kipp, L., Lock, C., Dunn, J., Han, M.
SAGE PUBLICATIONS LTD.2024: 1196
- **Prevalence, Demographic, and Clinical Factors Associated With Cognitive Dysfunction in Patients With Neuromyelitis Optica Spectrum Disorder (vol 102, e207965, 2024) NEUROLOGY**
Vlahovic, L., McDonald, J., Hinman, J., Tomczak, A., Lock, C., Palmer, C. A., Cook, L. J., Yeaman, M. R., Burnett, M. K., Deutsch, G. K., Nelson, L. M., Han, M. H., CIRCLES Study Grp
2024; 103 (3)
- **The Determination of Free Energy of Hydration of Water Ions from First Principles.** *Journal of chemical theory and computation*
Butin, O., Pereyaslavets, L., Kamath, G., Illarionov, A., Sakipov, S., Kurnikov, I. V., Voronina, E., Ivahnenko, I., Leontyev, I., Nawrocki, G., Darkhovskiy, M., Olevanov, M., Cherniavskiy, et al
2024
- **Emerging Cerebrospinal Fluid Biomarkers of Disease Activity and Progression in Multiple Sclerosis.** *JAMA neurology*
Cross, A. H., Gelfand, J. M., Thebault, S., Bennett, J. L., von Budingen, H. C., Cameron, B., Carruthers, R., Edwards, K., Fallis, R., Gerstein, R., Giacomini, P. S., Greenberg, B., Hafler, et al
2024
- **Neural Network Corrections to Intermolecular Interaction Terms of a Molecular Force Field Capture Nuclear Quantum Effects in Calculations of Liquid Thermodynamic Properties.** *Journal of chemical theory and computation*
Kurnikov, I. V., Pereyaslavets, L., Kamath, G., Sakipov, S. N., Voronina, E., Butin, O., Illarionov, A., Leontyev, I., Nawrocki, G., Darkhovskiy, M., Olevanov, M., Ivahnenko, I., Chen, et al
2024
- **Combining Force Fields and Neural Networks for an Accurate Representation of Bonded Interactions.** *The journal of physical chemistry. A*
Kamath, G., Illarionov, A., Sakipov, S., Pereyaslavets, L., Kurnikov, I. V., Butin, O., Voronina, E., Ivahnenko, I., Leontyev, I., Nawrocki, G., Darkhovskiy, M., Olevanov, M., Cherniavskiy, et al
2024
- **Prevalence, Demographic, and Clinical Factors Associated With Cognitive Dysfunction in Patients With Neuromyelitis Optica Spectrum Disorder.** *Neurology*
Vlahovic, L., McDonald, J., Hinman, J., Tomczak, A., Lock, C., Palmer, C. A., Cook, L. J., Yeaman, M. R., Burnett, M. K., Deutsch, G. K., Nelson, L. M., Han, M. H.
2024; 102 (1): e207965

- **Combining Force Fields and Neural Networks for an Accurate Representation of Chemically Diverse Molecular Interactions.** *Journal of the American Chemical Society*
Illarionov, A., Sakipov, S., Pereyaslavets, L., Kurnikov, I. V., Kamath, G., Butin, O., Voronina, E., Ivahnenko, I., Leontyev, I., Nawrocki, G., Darkhovskiy, M., Olevanov, M., Cherniavskiy, et al
2023
- **Epidemiological and Clinical Outcome Determinants of Post-COVID-19 Myelopathy**
Sumera, J., Sarkar, T., McDonald, J., Sattarnejhad, N., Nie, E., Kipp, L., Dunn, J., Han, M., Joseph, Y., Tomczak, A., Lock, C.
SAGE PUBLICATIONS LTD.2023: 719
- **SARS-CoV-2 Vaccine Immune Response on Anti-Complement Therapy, Eculizumab**
Sattarnejhad, N., Sumera, J., McDonald, J., Nie, E., Tomczak, A., Joseph, Y., Kalle, S., Sarkar, T., Kipp, L., Lock, C., Dunn, J. E., Han, M.
LIPPINCOTT WILLIAMS & WILKINS.2023
- **Progression of Mycosis Fungoides After Fingolimod Treatment for Multiple Sclerosis and Targeted Next-Generation Sequencing Demonstrating Potential Links Between the Two Diseases.** *JCO precision oncology*
Narala, S., Che, Y., Saleem, A., Lock, C. B., Kim, Y. H., Rieger, K. E.
2023; 7: e2200501
- **Differential effects of anti-CD20 therapy on CD4 and CD8 T cells and implication of CD20-expressing CD8 T cells in MS disease activity.** *Proceedings of the National Academy of Sciences of the United States of America*
Shinoda, K., Li, R., Rezk, A., Mexhitaj, I., Patterson, K. R., Kakara, M., Zuroff, L., Bennett, J. L., von Büdingen, H. C., Carruthers, R., Edwards, K. R., Fallis, R., Giacomini, et al
2023; 120 (3): e2207291120
- **Protein-Ligand Binding Free-Energy Calculations with ARROW—A Purely First-Principles Parameterized Polarizable Force Field.** *Journal of chemical theory and computation*
Nawrocki, G., Leontyev, I., Sakipov, S., Darkhovskiy, M., Kurnikov, I., Pereyaslavets, L., Kamath, G., Voronina, E., Butin, O., Illarionov, A., Olevanov, M., Kostikov, A., Ivahnenko, et al
2022
- **Evaluation of neurotrophic factor secreting mesenchymal stem cells in progressive multiple sclerosis** *MULTIPLE SCLEROSIS JOURNAL*
Cohen, J. A., Lublin, F. D., Lock, C., Pelletier, D., Chitnis, T., Mehra, M., Gothelf, Y., Aricha, R., Lindborg, S., Lebovits, C., Levy, Y., Motamed Khorasani, A., Kern, et al
2022: 13524585221122156
- **Clonally Expanded B Cells in Multiple Sclerosis Bind EBV EBNA1 and GlialCAM.** *Nature*
Lanz, T. V., Brewer, R. C., Ho, P. P., Moon, J. S., Jude, K. M., Fernandez, D., Fernandes, R. A., Gomez, A. M., Nadj, G. S., Bartley, C. M., Schubert, R. D., Hawes, I. A., Vazquez, et al
2022
- **B Cells, T Cells and Inflammatory CSF Biomarkers in Primary Progressive MS and Relapsing MS in the OBOE (Ocrelizumab Biomarker Outcome Evaluation) Trial**
Bar-Or, A., Bennett, J., Von Büdingen, H., Carruthers, R., Edwards, K., Fallis, R., Fiore, D., Gelfand, J., Giacomini, P., Greenberg, B., Hafler, D., Longbrake, E., Assman, et al
LIPPINCOTT WILLIAMS & WILKINS.2020
- **Ocrelizumab treatment reduced levels of neurofilament light chain and numbers of B cells in the cerebrospinal fluid of patients with relapsing multiple sclerosis in the OBOE study**
Cross, A., Bennett, J., von Büdingen, H., Carruthers, R., Edwards, K., Fallis, R., Fiore, D., Gelfand, J., Giacomini, P., Greenberg, B., Hafler, D., Harp, C., Assman, et al
LIPPINCOTT WILLIAMS & WILKINS.2019
- **MR susceptibility contrast imaging using a 2D simultaneous multi-slice gradient-echo sequence at 7T.** *PLoS one*
Bian, W., Kerr, A. B., Tranvinh, E., Parivash, S., Zahneisen, B., Han, M. H., Lock, C. B., Goubran, M., Zhu, K., Rutt, B. K., Zeineh, M. M.
2019; 14 (7): e0219705
- **Autoimmune Hepatitis During Treatment of Multiple Sclerosis with Alemtuzumab**
Carlson, A., Bozinov, N., Kipp, L., Dunn, J., Lock, C.
LIPPINCOTT WILLIAMS & WILKINS.2018

- **A Multi-scale Multiple Sclerosis Lesion Change Detection in a Multi-sequence MRI**
Cheng, M., Galimzianova, A., Lesjak, Z., Spiclin, Z., Lock, C. B., Rubin, D. L., Stoyanov, D., Taylor, Z., Carneiro, G., SyedaMahmood, T.
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 353–60
- **Janus-like opposing roles of CD47 in autoimmune brain inflammation in humans and mice** *JOURNAL OF EXPERIMENTAL MEDICINE*
Han, M. H., Lundgren, D. H., Jaiswal, S., Chao, M., Graham, K. L., Garris, C. S., Axtell, R. C., Ho, P. P., Lock, C. B., Woodard, J. I., Brownell, S. E., Zoudilova, M., Hunt, et al
2012; 209 (7): 1325-1334
- **Inhibitory role for GABA in autoimmune inflammation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Bhat, R., Axtell, R., Mitra, A., Miranda, M., Lock, C., Tsien, R. W., Steinman, L.
2010; 107 (6): 2580-2585
- **Gene-microarray analysis of multiple sclerosis lesions yields new targets validated in autoimmune encephalomyelitis** *NATURE MEDICINE*
Lock, C., Hermans, G., Pedotti, R., Brendolan, A., Schadt, E., Garren, H., Langer-Gould, A., Strober, S., Cannella, B., Allard, J., Klonowski, P., Austin, A., Lad, et al
2002; 8 (5): 500-508
- **The influence of the proinflammatory cytokine, osteopontin, on autoimmune demyelinating disease** *SCIENCE*
Chabas, D., Baranzini, S. E., Mitchell, D., Bernard, C. C., Rittling, S. R., Denhardt, D. T., Sobel, R. A., Lock, C., Karpuj, M., Pedotti, R., Heller, R., Oksenberg, J. R., Steinman, et al
2001; 294 (5547): 1731-1735
- **The role of TNF alpha and lymphotoxin in demyelinating disease** *ANNALS OF THE RHEUMATIC DISEASES*
Lock, C., Oksenberg, J., Steinman, L.
1999; 58: 121-128
- **The role of TNFalpha and lymphotoxin in demyelinating disease.** *Annals of the rheumatic diseases*
Lock, C., Oksenberg, J., Steinman, L.
1999; 58: 1121-8
- **EXPRESSION OF HLA-DR4 AND HUMAN CD4 TRANSGENES IN MICE DETERMINES THE VARIABLE REGION BETA-CHAIN T-CELL REPERTOIRE AND MEDIATES AN HLA-DR-RESTRICTED IMMUNE-RESPONSE** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Fugger, L., Michie, S. A., Rulifson, I., Lock, C. B., McDevitt, G. S.
1994; 91 (13): 6151-6155
- **MINIMUM STRUCTURAL REQUIREMENTS FOR PEPTIDE PRESENTATION BY MAJOR HISTOCOMPATIBILITY COMPLEX CLASS-II MOLECULES - IMPLICATIONS IN INDUCTION OF AUTOIMMUNITY** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Gautam, A. M., Lock, C. B., Smilek, D. E., Pearson, C. I., Steinman, L., McDevitt, H. O.
1994; 91 (2): 767-771
- **ANTIGEN RECOGNITION AND PEPTIDE-MEDIATED IMMUNOTHERAPY IN AUTOIMMUNE-DISEASE** *IMMUNOLOGICAL REVIEWS*
Smilek, D. E., Lock, C. B., McDevitt, H. O.
1990; 118: 37-71