



Stephan Rogalla, M.D. PhD

Clinical Assistant Professor, Medicine - Gastroenterology & Hepatology

CONTACT INFORMATION

- **Administrative Contact**

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Bio

ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Medicine - Gastroenterology & Hepatology
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- High-dimensional Atlas of Tissue Architecture & Microbiome in Pediatric Crohn's Disease, Maternal and Child Health Research Institute (07/2022 - 06/2024)
- Ultrabright Theranostic SERRS Nanoparticles for Early Cancer Detection in Gastrointestinal Endoscopy, National Institute of Health, National Cancer Institute (06/2021 - 05/2025)
- Multiplexed Imaging to Improve Diagnosis and Treatment for Patient Suffering from Gulf War Illness, Department of Defense (07/2021 - 07/2023)
- Synergy Award, Kenneth Rainin Foundation (02/2018-02/2020)
- Seed Grant Esophagus Disease, Division of Gastroenterology and Hepatology, Stanford Medicine (04/2018-03/2019)
- Seed Grant, Canary Foundation (2016-2017)
- Postdoctoral Fellowship, Will Foundation (10/2012 - 09/2013)
- Scholarship for extraordinary Attainment, Konrad-Adenauer Foundation (06/2002 - 11/2006)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Gastroenterological Association (AGA) (2017 - present)
- Chair, Intra-operative Imaging Study Group ESMI (2016 - present)
- Member, AACR (2014 - present)
- Member, European Society of Molecular Imaging (2014 - present)
- Member, ASCO (2014 - present)
- Member, World Molecular Imaging Society (2013 - present)

PROFESSIONAL EDUCATION

- Postdoctoral Fellowship, Stanford Medical School, Department of Pediatrics Molecular Imaging Program at Stanford (MIPS) , Molecular Imaging: Early Detection and Guided Resection of Malignancies (2015)

- Residency and Fellowship, Charité University Medicine Berlin, Germany , Gastroenterology, Oncology (2010)
- Residency, Charité University Medicine Berlin, Germany , General, Visceral, Vascular and Thoracic Surgery (2007)

COMMUNITY AND INTERNATIONAL WORK

- Chair Intra-operative Imaging Interest Group

PATENTS

- Stefan Harmasen, Stephan Rogalla, Sanjiv Gambhir. "United States Patent 62/639,795 Functional Dyes for Early Lesion Detection", Leland Stanford Junior University, Mar 7, 2018

LINKS

- Rogalla Lab Website: <https://med.stanford.edu/rogalla-lab.html>
- Twitter: <https://twitter.com/StephanRogalla>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The research interest of myself and my lab are in the field of early cancer detection using targeted molecular spies to highlight (pre)cancerous lesions. We as well aim to improve precision medicine in autoimmune disorders like inflammatory bowel disease and oncology.

CLINICAL TRIALS

- Fluorescent Probe VGT-309 to ID Cancerous Colorectal Lesions During Augmented Colonoscopy, Recruiting

PROJECTS

- Development of new Imaging Tools in Neoplasia of the GI-Tract - Stanford University (October 1, 2012 - present)
- Guided resection of medulloblastoma using integrated optical tools for multimodality imaging - Stanford University
- Precision Medicine in Inflammatory Bowel Disease - Stanford University

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Sonia Ferkel, Elizabeth Holman

Postdoctoral Research Mentor

Elizabeth Holman

Publications

PUBLICATIONS

- **Tumor-Infiltrating Immune Cells in Colorectal Cancer.** *Neoplasia (New York, N.Y.)*
Ferkel, S. A., Holman, E. A., Sojwal, R. S., Rubin, S. J., Rogalla, S.
2024; 59: 101091
- **Effects of Neoadjuvant Therapy on Tumour Target Expression of Oesophageal Cancer Tissue for NIR Fluorescence Imaging.** *Molecular imaging and biology*
Galema, H. A., Neijenhuis, L. K., Lauwerends, L. J., Dekker-Ensink, N. G., Verhoef, C., Vahrmeijer, A. L., Bhairosingh, S. S., Kuppen, P. J., Rogalla, S., Burggraaf, J., Lagarde, S. M., Wijnhoven, B. P., Hutteman, et al
2024

- **Automated spatial omics landscape analysis approach reveals novel tissue architectures in ulcerative colitis.** *Scientific reports*
Holman, D. R., Rubin, S. J., Ferenc, M., Holman, E. A., Koron, A. N., Daniel, R., Boland, B. S., Nolan, G. P., Chang, J. T., Rogalla, S.
2024; 14 (1): 18934
- **Exploring the effects of taurolidine on tumor weight and microvessel density in a murine model of osteosarcoma.** *Oncology research*
Neijenhuis, L. K., Naumann, L. L., Ferkel, S. A., Rubin, S. J., Rogalla, S.
2024; 32 (7): 1163-1172
- **Automated Spatial Omics Landscape Analysis Approach Reveals Novel Tissue Architectures in Ulcerative Colitis.** *Research square*
Rogalla, S., Holman, D., Rubin, S., Ferenc, M., Holman, E., Koron, A., Daniel, R., Boland, B., Nolan, G., Chang, J.
2024
- **Looking to Future Applications of Large Language Models.** *The American journal of gastroenterology*
Liu, X., Rubin, S. J., Rogalla, S.
2023; 118 (12): 2305
- **GPR15 in colon cancer development and anti-tumor immune responses.** *Frontiers in oncology*
Namkoong, H., Lee, B., Swaminathan, G., Koh, S. J., Rogalla, S., Paraskevopoulou, M. D., Tang, J., Mikhail, D., Becker, L. S., Habtezion, A.
2023; 13: 1254307
- **A tissue atlas of ulcerative colitis revealing evidence of sex-dependent differences in disease-driving inflammatory cell types and resistance to TNF inhibitor therapy** *SCIENCE ADVANCES*
Mayer, A. T., Holman, D. R., Sood, A., Tandon, U., Bhate, S. S., Bodapati, S., Barlow, G. L., Chang, J., Black, S., Crenshaw, E. C., Koron, A. N., Streett, S. E., Gambhir, et al
2023; 9 (3)
- **A tissue atlas of ulcerative colitis revealing evidence of sex-dependent differences in disease-driving inflammatory cell types and resistance to TNF inhibitor therapy.** *Science advances*
Mayer, A. T., Holman, D. R., Sood, A., Tandon, U., Bhate, S. S., Bodapati, S., Barlow, G. L., Chang, J., Black, S., Crenshaw, E. C., Koron, A. N., Streett, S. E., Gambhir, et al
2023; 9 (3): eadd1166
- **Expanding hyperspectral imaging applications to the clinical scene: non-invasive, label-free approaches for early diagnostics and precision medicine** *Frontiers in Imaging*
Holman, E. A., Holman, D. R., Rogalla, S.
2023; 2
- **The Tumor Immune Microenvironment in Pancreatic Ductal Adenocarcinoma: Neither Hot nor Cold.** *Cancers*
Rubin, S. J., Sojwal, R. S., Gubatan, J., Rogalla, S.
2022; 14 (17)
- **In vivo visualization and molecular targeting of the cardiac conduction system.** *The Journal of clinical investigation*
Goodyer, W. R., Beyersdorf, B. M., Duan, L., van den Berg, N. S., Mantri, S., Galdos, F. X., Puluca, N., Buikema, J. W., Lee, S., Salmi, D., Robinson, E. R., Rogalla, S., Cogan, et al
2022
- **Gut Microbiome in Inflammatory Bowel Disease: Role in Pathogenesis, Dietary Modulation, and Colitis-Associated Colon Cancer.** *Microorganisms*
Gubatan, J., Boye, T. L., Temby, M., Sojwal, R. S., Holman, D. R., Sinha, S. R., Rogalla, S. R., Nielsen, O. H.
2022; 10 (7)
- **Highlighting the Undetectable - Fluorescence Molecular Imaging in Gastrointestinal Endoscopy.** *Molecular imaging and biology*
Stibbe, J. A., Hoogland, P., Achterberg, F. B., Holman, D. R., Sojwal, R. S., Burggraaf, J., Vahrmeijer, A. L., Nagengast, W. B., Rogalla, S.
2022
- **Antimicrobial peptides and the gut microbiome in inflammatory bowel disease.** *World journal of gastroenterology*
Gubatan, J., Holman, D. R., Puntasecca, C. J., Polevoi, D., Rubin, S. J., Rogalla, S.
2021; 27 (43): 7402-7422
- **Antimicrobial peptides and the gut microbiome in inflammatory bowel disease** *WORLD JOURNAL OF GASTROENTEROLOGY*
Gubatan, J., Holman, D. R., Puntasecca, C. J., Polevoi, D., Rubin, S. S., Rogalla, S.

2021; 27 (43): 7402-7422

- **SPECT/CT Imaging, Biodistribution and Radiation Dosimetry of a Lu-177-DOTA-Integrin alpha v beta 6 Cystine Knot Peptide in a Pancreatic Cancer Xenograft Model** *FRONTIERS IN ONCOLOGY*
Sachindra, S., Hellberg, T., Exner, S., Prasad, S., Beindorff, N., Rogalla, S., Kimura, R., Gambhir, S., Wiedenmann, B., Groetzinger, C.
2021; 11: 684713
- **A protease-activated, near-infrared fluorescent probe for early endoscopic detection of premalignant gastrointestinal lesions.** *Proceedings of the National Academy of Sciences of the United States of America*
Yim, J. J., Harmsen, S., Flisikowski, K., Flisikowska, T., Namkoong, H., Garland, M., van den Berg, N. S., Vilches-Moure, J. G., Schnieke, A., Saur, D., Glasl, S., Gorpas, D., Habtezion, et al
2021; 118 (1)
- **AND-gate contrast agents for enhanced fluorescence-guided surgery.** *Nature biomedical engineering*
Widen, J. C., Tholen, M. n., Yim, J. J., Antaris, A. n., Casey, K. M., Rogalla, S. n., Klaassen, A. n., Sorger, J. n., Bogoyo, M. n.
2020
- **Biodegradable fluorescent nanoparticles for endoscopic detection of colorectal carcinogenesis.** *Advanced functional materials*
Rogalla, S., Flisikowski, K., Gorpas, D., Mayer, A. T., Flisikowska, T., Mandella, M. J., Ma, X., Casey, K. M., Felt, S. A., Saur, D., Ntziachristos, V., Schnieke, A., Contag, et al
2019; 29 (51)
- **Biodegradable Fluorescent Nanoparticles for Endoscopic Detection of Colorectal Carcinogenesis** *ADVANCED FUNCTIONAL MATERIALS*
Rogalla, S., Flisikowski, K., Gorpas, D., Mayer, A. T., Flisikowska, T., Mandella, M. J., Ma, X., Casey, K. M., Felt, S. A., Saur, D., Ntziachristos, V., Schnieke, A., Contag, et al
2019; 29 (51)
- **Detection of Premalignant Gastrointestinal Lesions Using Surface-Enhanced Resonance Raman Scattering-Nanoparticle Endoscopy.** *ACS nano*
Harmsen, S., Rogalla, S., Huang, R., Spaliviero, M., Neuschmelting, V., Hayakawa, Y., Lee, Y., Taylor, Y., Toledo-Crow, R., Kang, J. W., Samii, J. M., Karabeber, H., Davis, et al
2019; 13 (2): 1354–64
- **Detection of Premalignant Gastrointestinal Lesions Using Surface-Enhanced Resonance Raman Scattering-Nanoparticle Endoscopy** *ACS NANO*
Harmsen, S., Rogalla, S., Huang, R., Spaliviero, M., Neuschmelting, V., Hayakawa, Y., Lee, Y., Taylor, Y., Toledo-Crow, R., Kang, J., Samii, J. M., Karabeber, H., Davis, et al
2019; 13 (2): 1354–64
- **Emerging Intraoperative Imaging Modalities to Improve Surgical Precision** *MOLECULAR IMAGING AND BIOLOGY*
Alam, I. S., Steinberg, I., Vermesh, O., van den Berg, N. S., Rosenthal, E. L., van Dam, G. M., Ntziachristos, V., Gambhir, S. S., Hernot, S., Rogalla, S.
2018; 20 (5): 705–15
- **Emerging Intraoperative Imaging Modalities to Improve Surgical Precision.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*
Alam, I. S., Steinberg, I., Vermesh, O., van den Berg, N. S., Rosenthal, E. L., van Dam, G. M., Ntziachristos, V., Gambhir, S. S., Hernot, S., Rogalla, S.
2018
- **Intraoperative Molecular Imaging in Lung Cancer: The State of the Art and the Future.** *Molecular therapy : the journal of the American Society of Gene Therapy*
Rogalla, S. n., Joosten, S. C., Alam, I. S., Gambhir, S. S., Vermesh, O. n.
2018; 26 (2): 338–41
- **The tyrosine kinase inhibitor imatinib mesylate suppresses uric acid crystal-induced acute gouty arthritis in mice** *PLOS ONE*
Reber, L. L., Starkl, P., Balbino, B., Sibilano, R., Gaudenzio, N., Rogalla, S., Sensarn, S., Kang, D., Raghu, H., Sokolove, J., Robinson, W. H., Contag, C. H., Tsai, et al
2017; 12 (10): e0185704
- **Neutrophil myeloperoxidase diminishes the toxic effects and mortality induced by lipopolysaccharide** *JOURNAL OF EXPERIMENTAL MEDICINE*

- Reber, L. L., Gillis, C. M., Starkl, P., Joensson, F., Sibilano, R., Marichal, T., Gaudenzio, N., Berard, M., Rogalla, S., Contag, C. H., Bruhns, P., Galli, S. J.
2017; 214 (5): 1249-1258
- **Dose-dependent role of novel agents emodin and BTB14431 in colonic cancer treatment in rats.** *Acta chirurgica Belgica*
Braumann, C. n., Koplin, G. n., Geier, C. n., Höhn, P. n., Pohlenz, J. n., Dubiel, W. n., Rogalla, S. n.
2017: 1–9
 - **A Clinical Wide-Field Fluorescence Endoscopic Device for Molecular Imaging Demonstrating Cathepsin Protease Activity in Colon Cancer.** *Molecular imaging and biology*
Sensarn, S., Zavaleta, C. L., Segal, E., Rogalla, S., Lee, W., Gambhir, S. S., Bogyo, M., Contag, C. H.
2016; 18 (6): 820-829
 - **A Clinical Wide-Field Fluorescence Endoscopic Device for Molecular Imaging Demonstrating Cathepsin Protease Activity in Colon Cancer** *MOLECULAR IMAGING AND BIOLOGY*
Sensarn, S., Zavaleta, C. L., Segal, E., Rogalla, S., Lee, W., Gambhir, S. S., Bogyo, M., Contag, C. H.
2016; 18 (6): 820–29
 - **SU-E-J-274: Responses of Medulloblastoma Cells to Radiation Dosimetric Parameters in Intensity-Modulated Radiation Therapy.** *Medical physics*
Park, J., Park, J., Rogalla, S., Woo, D., Lee, D., Park, H., Contag, C., Suh, T.
2015; 42 (6): 3330-?
 - **Early Cancer Detection at the Epithelial Surface** *CANCER JOURNAL*
Rogalla, S., Contag, C. H.
2015; 21 (3): 179-187
 - **A Real-Time Clinical Endoscopic System for Intraluminal, Multiplexed Imaging of Surface-Enhanced Raman Scattering Nanoparticles** *PLOS ONE*
Garai, E., Sensarn, S., Zavaleta, C. L., Loewke, N. O., Rogalla, S., Mandella, M. J., Felt, S. A., Friedland, S., Liu, J. T., Gambhir, S. S., Contag, C. H.
2015; 10 (4)
 - **Atherosclerotic Plaque Targeting Mechanism of Long-Circulating Nanoparticles Established by Multimodal Imaging** *ACS NANO*
Lobatto, M. E., Calcagno, C., Millon, A., Senders, M. L., Fay, F., Robson, P. M., Ramachandran, S., Binderup, T., Paridaans, M. P., Sensarn, S., Rogalla, S., Gordon, R. E., Cardoso, et al
2015; 9 (2): 1837-1847
 - **A real-time clinical endoscopic system for intraluminal, multiplexed imaging of surface-enhanced Raman scattering nanoparticles.** *PLoS one*
Garai, E., Sensarn, S., Zavaleta, C. L., Loewke, N. O., Rogalla, S., Mandella, M. J., Felt, S. A., Friedland, S., Liu, J. T., Gambhir, S. S., Contag, C. H.
2015; 10 (4)
 - **The tumor suppressive reagent taurolidine inhibits growth of malignant melanoma - a mouse model** *JOURNAL OF SURGICAL RESEARCH*
Braumann, C., Jacobi, C. A., Rogalla, S., Menenakos, C., Fuehrer, K., Trefzer, U., Hofmann, M.
2007; 143 (2): 372-378
 - **High doses of taurolidine inhibit advanced intraperitoneal tumor growth in rats** *JOURNAL OF SURGICAL RESEARCH*
Braumann, C., Stuhldreier, B., Bobrich, E., Menenakos, C., Rogalla, S., Jacobi, C. A.
2005; 129 (1): 129-135

PRESENTATIONS

- Single-Cell technologies and high-parametric tissue analyses in human disease - Digestive Disease Week (May 23, 2022)
- Advanced tools in endoscopy - World Molecular Imaging Society (10/1/2020)
- Immunohistochemical Analysis of Immune Cells Reveals Immunophenotypes Associated with Intestinal Fibrosis and Postoperative Stricture Recurrence in Crohn's Disease - Digestive Disease Week (5/22/2022)
- Integration of Spatial Multi-Omic Imaging with Mass Cytometry Identifies Rare Cell Subsets in Ulcerative Colitis - Digestive Disease Week (5/22/2022)
- Single-Cell Immune Profiling and Repertoire Analysis of Convalescent Patients with Inflammatory Bowel Disease and SARS-COV-2 Antibody Response - Digestive Disease Week (5/22/2022)

- Optical Guidance for Advanced Endoscopic Procedures - European Molecular Imaging Meeting (3/23/2019)
- A near-infrared probe for in vivo imaging of colorectal lesions - World Molecular Imaging Society (9/28/2018)
- Innovative strategies to improve endoscopy in the clinic - European Molecular Imaging Meeting (3/26/2018)
- Early Detection of Colonic Lesions in High-Risk Patients - World Molecular Imaging Society (9/27/2017)
- Raman Imaging Colonic Lesions in High-Risk Patients - European Molecular Imaging Meeting (3/22/2017)
- Multimodality Optical Imaging Colonic Lesions in High-Risk Patients Using Fluorescent Fiberscope And Dual-Axis Confocal Microscope (DAC) - World Molecular Imaging Society (9/28/2016)
- Guided Resection of Medulloblastoma Using An Activated Probe And A Miniaturized Dual-Axis Confocal Microscope (DAC) - World Molecular Imaging Society (9/28/2016)
- A clinically translatable Raman device for endoscopic screening in high-risk patients of IBD - World Molecular Imaging Society (9/28/2016)
- Multimodality Imaging Of Colon Cancer Using Fluorescent Fiberscope And Dual-Axis Confocal Microscope (DAC) - Biomedical Engineering Society (10/15/2015)
- Guided Medulloblastoma Resection Using An Activated Probe And A Miniaturized Dual-Axis Confocal Microscope (DAC) - Biomedical Engineering Society (10/15/2015)
- Optical surgical navigation in real-time using multimodality optical tools for improved resection and in vivo pathology of medulloblastoma - World Molecular Imaging Society (9/20/2015)
- Integrated optical tools using molecular imaging for in vivo pathology in an orthotopic xenograft model of colon cancer - World Molecular Imaging Society (9/15/2015)