CURRICULUM VITAE
Jacques Lux, PhD

PERSONAL INFORMATION

Name: Jacques Lux, PhD
Place of Birth:
Year Of Birth:
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EDUCATION

Year	Degree	Field of Study	Institution
2004	BSc	Chemistry and Physics	University of Upper Alsace (France)
2006	Engineer	Organic Chemistry	Mulhouse National School of Chemistry (France)
2006	MSc	Chemistry	University of Upper Alsace (France)
2009	PhD	Chemistry	University of Strasbourg, Institute of Chemistry (France)

POSTDOCTORAL TRAINING

Year(s)	Training	Specialty/Discipline	Institution
2009-2010	Fellowship	Fluorescent Probes and Two-photon Microscopy	University of Strasbourg, Faculty of Pharmacy (France)
2010-2012	Fellowship	Supramolecular Chemistry, Host-guest Chemistry	The Scripps Research Institute
2012-2014	Fellowship	Bioresponsive Materials, MRI/PET Contrast Agents	University of California San Diego, San Diego, CA

FACULTY ACADEMIC APPOINTMENT

Year(s)	Academic Title	Academic Department	Academic Institution
2015-now	Assistant Professor	Radiology	University of Texas Southwestern Medical School, Dallas, TX
2016-2017	Assistant Professor	Biological Chemistry Graduate Program	University of Texas Southwestern Medical School, Dallas, TX
2016-now	Assistant Professor	Organic Chemistry Graduate Program	University of Texas Southwestern Medical School, Dallas, TX
2017-now	Assistant Professor	Biomedical Engineering Graduate Program	University of Texas Southwestern Medical School, Dallas, TX

HONORS AND AWARDS

Year	Name of Award	Awarding Organization
2006	Engineering Doctorate Fellowship (BDI)	Co-funded by CNRS and Region Alsace
2017	Docstars Award	The Cary Council

OTHER PROFESSIONAL POSITIONS

Year(s)	Position_Title	Institution
-2004	Research Assistant	Roche Pharmaceuticals, Basel, Switzerland
-2005	Research Assistant	Novartis, Vienna, Austria
-2006	Research Assistant	Roche Pharmaceuticals, Basel, Switzerland

COMMITTEE SERVICE

Institutional

Years	Position_Title	Name_Of_Committee	Institution_or_Organization
2016-now	Member	Thesis committee of Sussana Elkassih (Dr. Siegwart's lab)	UT Southwestern Medical Center, Dallas, TX
2017-2017	STARS Mentor	Mentor of STARS student, Chastity Chavez (Irma Rangel YWLS)	UT Southwestern Medical Center, Dallas TX
2017-now	Member	Thesis committee of Junyu Gong (Dr. De Brabander's lab)	UT Southwestern Medical Center, Dallas TX

PROFESSIONAL SOCIETIES

Year(s)	Society Name
2012-now	American Chemical Society
2014-now	Royal Society of Chemistry
2016-now	American Institute of Ultrasound in Medicine

INVITED LECTURES, TEACHING AND PRESENTATIONS

Local

Year(s)	Presentation Title or Course Name
2009	Lux J, Durola F, Collin JP, Sauvage JP, Navettes moléculaires rapides: synthèse et propriétés dynamiques, conference poster presentation, GECOM- CONCOORD Meeting, Albe, France.
2013	Magnetic Resonance Imaging (MRI) contrast agent crosslinkers for the preparation of theranostic nanogels, conference poster presentation, NanoDDS'13 at UCSD's Health Science Education Center, La Jolla, CA, USA.
2013	Magnetic Resonance Imaging (MRI) contrast agent crosslinkers for the preparation of theranostic nanogels, conference poster presentation, Post-doctoral Research Symposium at UCSD, La Jolla, CA, USA.
2016	Nanogels from Metal-Chelating Crosslinkers as Platforms for Bimodal MRI/PET Imaging: An Application to Copper-64 PET Imaging of Tumors and Metastases, invited lecture, UTD Sherry group meeting
2016	Nanomaterials as versatile contrast agents for cancer imaging, invited lecture, UTSW Chemistry Track seminar.

National

Year(s)	Presentation Title or Course Name
2013	Magnetic Resonance Imaging (MRI) contrast agent crosslinkers for the preparation of theranostic nanogels, conference poster presentation, 245th ACS National Meeting, New Orleans, LA, USA.
2014	Nanogels from metal-chelating crosslinkers as platforms for MRI/PET imaging, conference presentation, 247th ACS National Meeting, Dallas, TX, USA
2015	Nanogels from Metal-Chelating Crosslinkers Applied to Copper-64 PET Imaging of Tumors and Metastases, conference presentation, 249th ACS National Meeting, Denver, CO, USA.
2015	Dual-Triggered Polymeric Nanoparticles as Activatable Fluorescent Probes for the Detection of Inflammation and Tumors, conference presentation, 249th ACS National Meeting, Denver, CO, USA.
2016	In vivo MRI and PET imaging of cancer with nanogels incorporating metal-chelating crosslinkers, conference presentation, 252nd ACS National Meeting, Philadelphia, PA, USA
2016	Co-organizer of symposium "Radiopharmaceutical Chemistry" at the 252nd ACS National Meeting, Philadelphia, PA, USA.
2016	Co-organizer and co-presider of symposium "Polymeric Materials as Imaging Agents & Theranostics" at the 252nd ACS National Meeting, Philadelphia, PA, USA.
2017	Thrombin-Activatable Ultrasound Contrast Agent for the Detection of Acute Thrombosis, conference presentation, Contrast Media Research 2017 Symposium, Durango, CO, USA

2017 Detection of Acute Thrombosis with Activatable Ultrasound Contrast Agents, conference presentation, AIUM Annual Convention, Orlando, FL, USA.

2017 Thrombin-Activatable Ultrasound Contrast Agent for the Detection of Acute Thrombosis, conference presentation, 91st ACS Colloid & Surface Science Symposium, New York City, NY, USA.

2017 Detection of Pathophysiological Levels of Hydrogen Peroxide with Ultrasound Imaging Using Enzyme-containing Nanoparticles, conference presentation, AIUM Annual Convention, Orlando, FL, USA.

2017 Direct formulation of monodisperse superheated nanodroplets as activatable ultrasound contrast agent, conference presentation, 91st ACS Colloid & Surface Science Symposium, New York City, NY, USA.

Regional

Year(s)	Presentation Title or Course Name

2016 Nanomaterials as versatile contrast agents for cancer imaging, invited lecture, UTSW, UTD & UTA Joint Seminar Series for Biomedical Engineering and the Cancer Imaging Program," University of Texas System, North Texas 2016.

2016 Bioresponsive and Ultrasound Triggered Nanoparticles for Disease Detection and Therapy, invited lecture, BMI Graduate Track Open House, University of Texas at Dallas, Richardson, TX

2017 Bioresponsive Particles for the Detection of Disease by Ultrasound, invited lecture, UTD Advanced Seminars in Biomedical Engineering- Basic/Translational Frontiers, Richardson, TX

2017 Bioresponsive Particles for the Detection of Disease by Ultrasound, invited lecture, UTA Bioengineering Department Seminar, Arlington, TX

BIBLIOGRAPHY OF SCHOLARLY PUBLICATIONS

Original Research Article

1 Collin JP, Durola F, Lux J, Sauvage JP*. A rapidly shuttling copper-complexed [2]rotaxane with three different chelating groups in its axis, Angew. Chem. Int. Ed. 2009, 48, 8532-8535. PMID: 19798707

2 Durola F, Lux J, Sauvage JP*. A fast-moving copper-based molecular shuttle : synthesis and dynamic properties, Chem Eur J, 2009, 15, 4124-4134. PMID: 19235189

3 Collin JP, Durola F, Lux J, Sauvage JP*. A copper-based shuttling [2]rotaxane with two bidentate chelates in the axis: steric control of the motion, New J Chem, 2010, 34, 34-43. (Hot article and January 2010 front cover)

4 Durola F, Lux J, Sauvage JP*, Wenger OS. Bigger, better, faster: molecular shuttles with sterically non-hindering biisoquinoline chelates, Supramol Chem, 2011, 23, 42-52.

5 Bolze F*, Lux J, Peña E, Heinlein M, Wong MS, Nicoud JF. Two-photon dyes and nucleic acid detection, Nonlinear Optics and Quantum Optics 2012, 45, 29-39.

6 Lux J +, Peña E+, Bolze F, Heinlein M, Nicoud JF*. Malachite green derivatives for two-photon RNA detection, Chem Bio Chem, 2012, 13, 1206-1213. PMID: 22549874

7 Ayme JF, Lux J, Sauvage JP*, Sour A*. Catenanes Built Around Octahedral Transition-Metal Complexes that Contain Two Intertwined Endocyclic but Non-Sterically Hindering Tridentate Ligands, Chem Eur J, 2012, 18, 5565-5573. PMID: 22431359

8 Lux J +, Chan M +, Vander Elst L, Schopf E, Laurent S, Mahmoud E, Almutairi A*. Metal Chelating Crosslinkers Form Nanogels with High Chelation Stability, J Mat Chem B 2013, 1, 6359-6364. PMCID: PMC3910426

9 Busseron E +, Lux J +, Degardin M, Rebek J Jr*. Synthesis and recognition studies of a ditopic photoswitchable deep cavitand, Chem. Commun. 2013, 49, 4842-4844.

10 Lux J, Rebek J Jr*, Reversible switching between self-assembled homomeric and hybrid capsules, Chem Commun. 2013, 49, 2127-2129. PMID: 23604047

11 Viger ML +, Sheng W +, Dore K, Alhasan AH, Carling CJ, Lux J, de Gracia Lux C, Grossman M, Malinow R, Almutairi A*. Near-Infrared-Induced Heating of Confined Water in Polymeric Particles for Efficient Payload Release, ACS Nano 2014, 8(5), 4815-4826. PMCID: PMC4046803

12 de Gracia Lux C, Lux J, Collet G, He S, Chan M, Olejniczak J, Almutairi A *. Short Soluble Coumarin Crosslinkers for Light Controlled Release of Cells and Proteins from Hydrogels, Biomacromolecules 2015, 16 (10), 3286–3296. PMID: 26349005

13 Olejniczak J, Nguyen Huu VA, Lux J, Grossman M, He S, Almutairi A*. Light-Triggered Chemical Amplification to Accelerate Degradation and Release from Polymeric Particles, Chemical Communications 2015, 51, 16980-16983. PMID: 26445896

14 Chan M, Lux J, Nishimura T, Akiyoshi, K, Almutairi A*. Long-Lasting and Efficient Tumor Imaging Using a High Relaxivity Polysaccharide Nanogel MRI Contrast Agent, Biomacromolecules 2015, 16, 2964-2971. PMID: 26278775

15 Nguyen Huu VA, Luo J, Zhu J, Patel S, Boone A, Mahmoud E, McFearin C, Olejniczak J, de Gracia Lux C, Lux J, Fomina N, Huynh M, Zhang K *, Almutairi A*. Light-Responsive Nanoparticle Depot to Control Release of a Small Molecule Angiogenesis Inhibitor in the Eye, J. Controlled Release 2015, 200, 71-77. PMCID: PMC4384820

16 Lux J +, White AG +, Chan M, Anderson CJ *, Almutairi A*. Nanogels from Metal-Chelating Crosslinkers as Versatile Platforms Applied to Copper-64 PET Imaging of Tumors and Metastases, Theranostics 2015, 5(3), 267-276. PMCID: PMC4279191

17 Zhang ZN, Freitas BC, Qian H, Lux J, Acab A, Trujillo CA, Herai RH, Nguyen Huu VA, Wen JH, Joshi-Barr S, Karpiak JV, Engler AJ, Fu XD, Muotri AR, Almutairi A*. Layered hydrogels accelerate iPSC-derived neuronal maturation and reveal migration defects caused by MeCP2 dysfunction. Proc Natl Acad Sci U S A 2016 113 (12) 3185-3190. PMID: 26944080.

18 Viger ML, Collet G, Lux J, Nguyen Huu VA, Guma M, Foucault-Collet A, Olejniczak J, Joshi-Barr S, Firestein GS, Almutairi A*. Distinct ON/OFF fluorescence signals from dual-responsive activatable nanoprobes allows detection of inflammation with improved contrast. Biomaterials 2017, 133, 119-131. PMID: 28433935.

19 Lux J*, Vezeridis AM, Hoyt K, Adams SR, Armstrong AM, Sirsi SR, Mattrey RF*. Thrombin-Activatable Microbubbles as Potential Ultrasound Contrast Agents for the Detection of Acute Thrombosis. ACS Appl Mater Interfaces. 2017, 9(43), 37587-37596.

20 de Gracia Lux C*, Vezeridis AM, Lux J, , Armstrong AM, Sirsi SR, Hoyt K, Mattrey RF*. Novel method for the formation of monodisperse superheated perfluorocarbon nanodroplets as activatable ultrasound contrast agents. RSC Adv., 2017, 7, 48561-48568.

GRANT SUPPORT FUNDED AND UNFUNDED PROJECTS

New / Recent Grant Awards

Grantor:	UT Southwestern Center for Translational Medicine (CTM)	
Title of Project:	Imaging Reactive Oxygen Species	
Investigator Role:	PI	
Annual Amount:	$49,383.00	Year(s) 2016-2017
Total Award Amount:	$49,383.00	

Grantor:	The Cary Council	
Title of Project:	Helping treatment for childhood leukemia become more tolerable	
Investigator Role:	PI	
Annual Amount:	$50,000.00	Year(s) 2017-2018
Total Award Amount:	$50,000.00	

Unfunded Research Projects

Grantor:	UC San Diego Clinical and Translational Research Institute (CTRI)	
Title of Project:	Dual-triggered bioresponsive nanoparticles for the in vivo detection and targeted drug delivery in inflammatory arthritis	
Investigator Role:	PI	
Annual Amount:	$30,000.00	Year(s) 2015-2016
Total Award Amount:	$30,000.00	

NARRATIVE REPORT

Dr. Jacques Lux obtained his PhD in chemistry at the University of Strasbourg under the guidance of Professor Jean-Pierre Sauvage. His PhD projects aimed at designing and developing synthetic molecular machines reminiscent of biological systems. Following his PhD, Dr. Lux conducted postdoctoral research at the faculty of pharmacy in Strasbourg, where he developed activatable optical probes for the detection of viral RNA.

He then came to the U.S. to train in supramolecular chemistry in Professor Julius Rebek Jr.'s laboratory at the Scripps Research Institute in La Jolla, CA. Dr. Lux received another postdoc opportunity at UCSD applying his skills in organic and coordination chemistry to the field of material science, and then became a Research Scientist to develop and translate theranostics for imaging and drug delivery. While at UCSD, he designed and synthetized a novel MR contrast agent that incorporated gadolinium that was chelated and linked to hydrogel nanoparticles (nanogels). The advantage of this strategy is not only the development of high relaxivity T1 agents, but also minimizing demetallation. The versatility of this platform was demonstrated by incorporating 64Cu instead of gadolinium that allowed for in vivo PET/CT imaging of cancer. Dr. Lux also participated in the development of novel activatable optical
nanoprobes for the detection of inflammation.

He recently joined the newly established Translational Research in Ultrasound Theranostics (T.R.U.S.T.) program at UT Southwestern in the Department of Radiology focusing on the development of targeted and activatable ultrasound (US) agents

that not only aid in cancer detection, but also under US control, release drugs and/or destroy tumors with high intensity focused ultrasound.