

CURRICULUM VITAE WITH TRACK RECORD ASTA JUZENIENE



PERSONAL INFORMATION

Family name, First name: Juzeniene, Asta

Date of birth: 27.04.1971

Nationality: Lithuania

Civil status: Married, 1 child (18 years)

Private address: Rudsveien 22D, Gjettum 1346, Norway

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Researcher unique identifier: <http://orcid.org/0000-0001-9426-0062>

URL for personal web site: <https://www.ous-research.no/juzeniene/>

EDUCATION

- 2007 The degree of Doctor of Philosophy in Biophysics, **Disputation date:** 12.01.2007.
Department of Physics, University of Oslo (UiO), Norway
- 1994 University degree in Physics, Faculty of Physics, University of Vilnius, Lithuania

CURRENT AND PREVIOUS POSITIONS

- 2022-present Senior scientist, a group leader, the Department of Radiation Biology, the Norwegian Radium Hospital, Oslo University Hospital (OUH), Oslo, Norway
- 2012-2022 Senior scientist (since 2015 a project group leader), the Department of Radiation Biology, the Norwegian Radium Hospital, Oslo University Hospital (OUH), Oslo, Norway
- 2012 Evaluated at UiO and found qualified for a professor position, Oslo, Norway
- 2007-2011 Postdoctoral fellowship, the Norwegian Radium Hospital, Oslo
- 2001-2006 PhD student, the Department of Radiation Biology, the Norwegian Radium Hospital, Oslo
- 1994-2000 Research associate in medical physics (100%), the Lithuanian Oncology Centre (supervisor Prof., M.D. Janina Didžiapetrienė)
- 1994-1998 Physics teacher (50% position) at the "Gerosios Vilties" High School, Vilnius, Lithuania

PERSONAL FELLOWSHIPS

- 2021-2022 Researcher fellowship, the South-Eastern Norway Regional Health Authority, Norway
- 2017-2020 Researcher fellowship, Inven2, Oslo, Norway
- 2012-2015 Researcher fellowship, the South-Eastern Norway Regional Health Authority, Norway
- 2007-2011 Postdoctoral fellowship, the Norwegian Cancer Society, Norway
- 2003-2006 PhD fellowship, the Norwegian Cancer Society, Norway

SUPERVISION OF STUDENTS

Main supervisor for PhD students (name of candidate, title of PhD project, period of supervision, institutions):

- Anna Julie Kjøl Tornes, *Dual-alpha therapy for the treatment of disseminated cancers*, 2021 – present, OUH/UiO/Nucligen AS, co-supervisor Mona-Elisabeth Rootwelt-Revheim, MD, PhD, MHA (OUH/UiO).
- Vilde Stenberg, *Preparation and preclinical investigation of the alpha-emitting prostate-specific membrane antigen targeted radioligand ^{212}Pb -NG001 for prostate cancer*, 2018 – present, OUH/UiO/Nucligen AS, co-supervisors Øyvind Sverre Bruland, Prof, MD, PhD (OUH/UiO) and Roy H. Larsen, PhD (Nucligen AS).
- Ruth Gong Li, *Calcium carbonate microparticles as carriers of ^{224}Ra and ^{212}Pb for intraperitoneal cancer therapy*, 2019 – present, OUH/UiO/Oncoinvent, co-supervisor Mona-Elisabeth Rootwelt-Revheim, MD, PhD, MHA (OUH and UiO).
- Mantas Grigalavicius, *Evaluations of skin cancer induction versus vitamin D production from UV exposure*, 2011-2016, OUH/UiO, co-supervisors Johan Moan, Prof, PhD (OUH/UiO) and Arne Dahlback, Prof, PhD (UiO). **Disputation date:** 19.01.2016.

Co-supervisor for PhD students (name of candidate, title of PhD project, period of supervision, institutions):

- Monika Kvassheim, *Theragnostic radiopharmaceuticals for metastatic cancer*, 2019-present, OUH and UiO, main supervisor Caroline Stokke (OUH/UiO), co-supervisor Mona-Elisabeth Rootwelt-Revheim, MD, PhD, MHA (OUH/UiO).
- Elisa Napoli, *Standardizing quantification methods for ^{224}Ra and ^{212}Pb applied to characterization of therapeutic radiopharmaceuticals*, 2016-2020, OUH/UiO/Oncoinvent AS, main supervisor Øyvind Sverre Bruland, Prof, MD, PhD (OUH/UiO), co-supervisor Tina Bjørnlund Bønsdorff, PhD (Oncoinvent AS), **Disputation date:** 10.12.2021.
- Emanuela Micu, *Solar radiation and melanoma epidemiology in Norway*, 2010-2013, OUH/UiO, main supervisor Johan Moan, Prof, PhD (OUH/UiO), co-supervisor Øyvind Sverre Bruland, Prof, MD, PhD (OUH/UiO). **Disputation date:** 13.01.2014.
- Patrycja Mikolajewska, *Pain during topical photodynamic therapy*, 2007-2011, OUH/UiO, main supervisor Johan Moan, Prof, PhD (OUH/UiO). **Disputation date:** 16.09.2011.

Main supervisor for master students:

- Rugile Liukaityte (OUH/UiO, Oslo, 2022-present)
- Sivan Mohammed (OUH/OsloMet, Oslo, Norway, 2021)
- Zivile Nizauskaite (OUH, Oslo, Norway and University of Vilnius, Vilnius, Lithuania, 2011).

Co-supervisor for master students:

Silje Stakland (NMBU, Ås, Norway, 2002), Glenn Brennodden (NTNU, Trondheim, Norway, 2006), Pudroma Xiapuzhuoma (UiO, Oslo, Norway, 2006).

The main supervisor for many exchange students who received mobility grants from the Erasmus programme and the Marie Skłodowska-Curie actions.

TEACHING ACTIVITIES

2011-2016 A lecturer in FYS1010 - Environmental physics (3 hours/semester), at University of Oslo, Norway

- 2010-2016 Involved in teaching students from Ullern high school as a part of Oslo Cancer Cluster (10 hours/year)
- 2003 and 2005 Lecturer at the 1st and 2nd International summer schools on biophotonics, Sweden
- 1994-1998 Physics teacher (50%) at the "Gerosios Vilties" High School, Vilnius, Lithuania

COMMISSIONS OF TRUST

- 2021-now Monitor/reviewer, SCANnTREAT, the H2020 FET-Open scheme (Future and Emerging Technologies), the European Innovation Council and SMEs Executive Agency (EISMEA)
- 2015-2018 Expert, ICT-PSP, Information and Communication Technologies Policy Support Programme, the European Commission (Brussels) (five visits to Brussels)
- 2021- Member of the Editorial Board: Translational Oncology; Cancers
- 2018 External examiner for the assessment of master thesis (Norwegian University of Science and Technology (NTNU), Trondheim, Norway)
- 2014- Opponent in connection with PhD thesis defence (Simona Steponkiene, 2014, University of Vilnius, Lithuania; Ingrida Vaisnorienė, 2015, University of Vilnius, Lithuania; Mette Bodekær Larsen, 2017, University of Copenhagen, Denmark)
- 2011- Member of the Editorial Board: Photodiagnosis and Photodynamic Therapy
- 2009- Member of the Editorial Board: Journal Photochemistry and Photobiology B. Biology
- 2007- Referee work for more than 10 international journals

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- 2017- Member of the European Association of Nuclear Medicine (EANM)
- 2015-2018 Member of the board of the Norwegian Society for Photobiology and Photomedicine (NOFFOF)

ADMINISTRATIVE EXPERIENCE

The member of organizing committees of several international and national conferences, department events.

LEADERSHIP

A leader for 3-8 persons since 2015.

COLLABORATIONS

The main collaboration partners at OUH:

Prof., MD Øyvind S. Bruland (<http://www.bruland.info/>) is an oncologist at the Department of Oncology (OUH) and Professor at UiO. He has experience in targeted radionuclide therapy. He is one of the inventors of the first FDA and EMA approved alpha pharmaceutical products ²²³Ra (Xofigo, Bayer AG) against skeletal metastases and a beta emitting radioimmunotherapeutic lutetium-177 tetulomab tetraxetan (Betalutin, Nordic Nanovector AS), currently in Phase-2 clinical trials against non-Hodgkin lymphoma. He is also among the four co-founders of Oncoinvent AS and serves as a part time advisor to the company leading the early clinical trial development. He is involved in all parts of our research activities to ensure that research addresses unmet clinical needs.

MD, PhD, MHA Mona-Elisabeth Rootwelt-Revheim (<https://www.ous-research.no/revheim/>) is a nuclear medicine physician and the head of both Section of Nuclear Medicine and the research group Functional and Molecular Imaging (OUH). She also works in the department of radiology and nuclear medicine at UiO.

She has access to frontline preclinical and clinical medical imaging technologies available at the hospital. We have together a grant received from the regional south eastern health authority (2021-2023) for imaging and dosimetry studies.

PhD Caroline Stokke (<https://www.ous-research.no/cstokke/>) is a medical physicist, the head of section for Nuclear Medicine Physics, Department of Diagnostic Physics (OUS), and member of the EANM's dosimetry committee. She has experience in the determination of radiation tolerance limits for a novel ^{177}Lu -based treatment for non-Hodgkin lymphoma. She is involved in activities related dosimetry of novel radiopharmaceuticals.

MD, PhD Kjetil Berner is the head of section of genito-urinary oncology (OUH). He will be responsible for the implementation of radiopharmaceuticals for mCRPC, a phase 1 clinical trial.

PhD, MD Qian Peng (<https://ous-research.no/peng/>) is a pathologist and a group leader at the Department of Pathology (OUH). He participates in our activities related preclinical testing of radiopharmaceuticals, involved in clinical and histopathological analysis, including toxicological and molecular pathology (quantitative PSMA, somatostatin and other receptor of interest expression before and after treatment).

PhD Sébastien Walchli co-leads the translational research laboratory at the section for Cellular therapy (OUH), a newly established pre-clinical entity directly connected to the immunomonitoring unit. He leads the molecular biology of the T-cell receptor (TCR) and the Chimeric Antigen Receptor (CAR) development platforms (<https://www.ous-research.no/home/cellulartherapy/Group+members+TR+Unit/8303>). He is involved in studies related immunogenic effects of targeted alpha therapy.

PhD Alfonso Urbanucci (<https://www.ous-research.no/urbanucci/>) is a project group leader, senior researcher at the Department of Tumour Biology (OUH). His research interest is in precision medicine, patient's stratification, prostate cancer, molecular signatures, androgen receptor, MYC; bromodomain, chromatin; transcriptomics, single cell, gene regulation, radiobiology. We investigate together the efficacy and mechanism of action of combination treatment using bromodomain inhibitors and radiopharmaceuticals.

PhD Theodossis Theodossiou (<https://www.ous-research.no/protonics/>) is a project group leader, senior researcher in the Department of Radiation Biology. His group studies the combinatory use of ionizing radiation-based therapies like Proton Therapy and/or Neutron Capture Therapy, together with light based therapies, like Photodynamic Therapy (PDT) or Photochemical Internalization to achieve a breakthrough anticancer strategy. He is involved in our studies where we use radionuclides to excite photosensitizers for PDT deep in tissue.

Small biotech companies developing radiopharmaceuticals:

Nucligen AS (Dr. Roy Larsen), Oslo, Norway

Dr. Roy Larsen (Chief Scientific Officer, Nucligen AS) has a MSc in nuclear chemistry and a Dr. philos in radiopharmaceutical chemistry. He has more than 50 peer-reviewed scientific papers and more than 10 patents in the field including those for ^{223}Ra (Xofigo), ^{227}Th and ^{177}Lu -labeled HH1 antibody (Betalutin), as well as ^{224}Ra -labeled CaCO_3 microparticles (Raspherin). He has extensive experience as a company founder and with early-stage company development including with Algeta, Nordic Nanovector and Oncoinvent. We are developing together dual-alpha targeted therapies for cancer metastases.

Oncoinvent AS (<https://www.oncoinvent.com/>), Oslo, Norway

Oncoinvent's product Radspherin[®] (ongoing Phase 1 clinical trials) is a new alpha-emitting radioactive microsphere designed for treatment of metastatic cancers in body cavities. **Tina Bjørnlund Bønsdorff** (Chief Scientific Officer, Oncoinvent AS) and we cooperate in the optimization of ^{212}Pb and ^{224}Ra delivery by calcium carbonate microparticles.

International

Prof., PhD Kevin M. Prise is the head of Radiation Biology department, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK. His group is focused in the optimization of bone-seeking radionuclides for targeted molecular radiotherapy. We are studying the efficacy, dosimetry and action mechanisms combination of different inhibitors and alpha-emitting radiopharmaceuticals. **Dr. Victoria**

Dune from his group plans to visit us few times in 2022-2025 (3-6 months per visit). *Activities 3-5 (see Research plan).*

Prof., PhD Daumantas Matulis (<http://www.bti.vu.lt/en/departments/department-of-biothermodynamics-and-drug-design/contacts>) is the director Life Sciences Center, Vilnius University, Vilnius, Lithuania. His team develops different molecular targets. We are going to synthesize and evaluate radionuclide-labelled novel molecular targets for cancer imaging and therapy.

PhD Jonas Venius (<https://www.nvi.lt/kontaktai-36/>) is the head of Medical Physics Department, National Cancer Institute, Vilnius, Lithuania. His team will be involved in preclinical dosimetry of novel radiopharmaceuticals. The visits of cooperation partners and students are planned.

PhD Kaspars Tars (<http://www.biomed.lu.lv/en/about-us/people/kaspars-tars-dr-biol/>) is the study director, senior researcher, Latvian Biomedical Research and Study Center, Riga, Latvia. His team will perform synthesis and characterization of new targeting ligands.

PhD Peteris Trapencieris (<https://www.osi.lv/en/about-ios/laboratories/laboratory-of-organic-chemistry/>) is the head of laboratory, Latvian Institute of Organic Chemistry, Riga, Latvia. His team will design and synthesize compounds with therapeutic potential against our defined targets.

Prof., PhD Ago Rinken (<http://gpcr.ut.ee/>) is the chair of bioorganic chemistry, Institute of Chemistry, Tartu University, Tartu Estonia. They will be involved in studying different cell receptors and the mechanisms of action of TRT.

COMMUNICATION and DISSEMINATION

The total number of publications during the career: **112** original scientific articles in peer reviewed journals, **21** review articles, **8** book chapters and more than **20** popular scientific articles.

For a complete list see <https://pubmed.ncbi.nlm.nih.gov/?term=juzeniene+A> or a publication list.

H-Index: 32. 10-index: 82. Citations: 6003 (without self-citations). Source: WEB of Science April 2022.

MOST IMPORTANT PUBLICATIONS (*corresponding author)

Publications relevant for the present group research activities

Original papers

1. Stenberg V.Y.,* Larsen R.H., Ma L.-W., Peng Q., Juzenas P., Bruland Ø S., **Juzeniene A.** Evaluation of the PSMA-Binding Ligand ^{212}Pb -NG001 in Multicellular Tumour Spheroid and Mouse Models of Prostate Cancer. *Int J Mol Sci* **2021**, 22, 4815. *Impact factor: 5.923*.
2. Li R.G.,* Napoli E., Jorstad I.S., Bønsdorff T.B., **Juzeniene A.**, Bruland Ø S., Larsen R.H., Westrøm S. Calcium Carbonate Microparticles as Carriers of ^{224}Ra : Impact of Specific Activity in Mice with Intraperitoneal Ovarian Cancer. *Curr Radiopharm* **2021**, 14, 145-153.
3. Li R.G.,* Lindland K., Tonstad S.K., Bønsdorff T.B., **Juzeniene A.**, Westrøm S., Larsen R.H. Improved Formulation of ^{224}Ra -Labeled Calcium Carbonate Microparticles by Surface Layer Encapsulation and Addition of EDTMP. *Pharmaceutics* **2021**, 13, 634. *Impact factor: 6.321*.
4. Stenberg V. Y., **Juzeniene A.**,* Chen Q., Yang X., Bruland O. S., Larsen R. H. Preparation of the alpha-emitting PSMA targeted radioligand [^{212}Pb]Pb-NG001 for prostate cancer. *J Labelled Comp Radiopharm* **2021**, 63, 129-43. *Impact factor: 1.921*.
5. Stenberg V. Y., **Juzeniene A.**,* Bruland O. S., Larsen R. H. In situ Generated ^{212}Pb -PSMA Ligand in a ^{224}Ra -Solution for Dual Targeting of Prostate Cancer Sclerotic Stroma and PSMA-positive Cells. *Curr Radiopharm* **2020**, 13, 130-141.
6. Napoli E.,* Stenberg V.Y., **Juzeniene A.**, Hjellum G.E., Bruland Ø S., and Larsen R.H. Calibration of sodium iodide detectors and reentrant ionization chambers for ^{212}Pb activity in different geometries by HPGe activity determined samples. *Appl Radiat Isot* **2020**, 166, 109362. *Impact factor: 1.513*.

7. **Juzeniene A.**,* Bernoulli J., Suominen M., Halleen J., Larsen R.H. Antitumor Activity of Novel Bone-seeking, alpha-emitting ²²⁴Ra-solution in a Breast Cancer Skeletal Metastases Model. *Anticancer Res* **2018**, 38, 1947-55. *Impact factor: 2.480*.

Review

8. **Juzeniene A.***, Stenberg V.Y., Bruland Ø. S., Larsen R.H. Preclinical and Clinical Status of PSMA-Targeted Alpha Therapy for Metastatic Castration-Resistant Prostate Cancer. *Cancers*. **2021**, 13(4), 779. *Impact factor: 6.639*.

CONFERENCES related to the present research group activities

Oral presentations

Juzeniene A., Stenberg V.Y., Bruland Ø.S., Larsen R.H. "Dual-alpha" - an expanding technology for development of targeted alpha therapies. International symposium of radiopharmaceutical therapy, NOV 18-20, Helsinki, Finland. *World Journal of Nuclear Medicine* **2019**, 18(2): 205–225.

Juzeniene A. "Dual-alpha" - an expanding technology for development of targeted alpha therapies. Second Annual meeting of Network in Radiation Oncology (NIRO), Oslo, Norway, JAN 17, **2020**.

Abstracts and Posters

Kvasheim M., Rootwelt-Revheim M.-E., **Juzeniene A.**, Stokke C. Quantitative imaging of Pb-212. Annual congress of European Association of Nuclear medicine (EANM), OCT 4-6, 2021-S-1520-EANM, **2021**.

Stenberg V., **Juzeniene A.**, Ma L.W., Bruland O.S., and Larsen R.H. Targeting of metastatic prostate cancer with alpha particle generating Pb-212-labeled PSMA seeking ligands. Annual Meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), ELECTR NETWORK, JUL 11-14, 2020. *Journal of Nuclear Medicine* **2020**, 61.

Stenberg V., **Juzeniene A.**, Bruland O.S., and Larsen R.H. "Dual-alpha" - an expanding technology for development of targeted alpha therapies. Second Annual meeting of Network in Radiation Oncology (NIRO), Oslo, Norway, JAN 17, **2020**, *BEST POSTER AWARD*.

SPECIAL TRAINING COURESES

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| 2005 | Courses in Laboratory Animal Science (organized by the Norwegian School of Veterinary Science, Oslo) designed for researchers who plan and carry out animal experiments. |
| 2009 | Test i norsk – høyere nivå (Bergenstesten, skriftlig) |
| 2011 | Leadership courses for young researches organized by Stride AS |
| 2016 | User course in radiation protection for work with open radioactive sources (organized by Norwegian University of Science and Technology (NTNU), Trondheim, Norway) |

GRANTS (in which I am involved with the research activities for the development of TRT)

- 2021-2025 Industrial PhD (the contract is under preparation), the Norwegian Research Council, Oslo, Norway
- 2019-2022 Industrial PhD (project number 304591), the Norwegian Research Council, Oslo, Norway
- 2018-2022 Innovation Project in Business (project number 282220), the Norwegian Research Council, Oslo, Norway
- 2018-2022 Industrial PhD (project number 290639), the Norwegian Research Council, Oslo, Norway
- 2021-2023 Researcher fellowship (project number 2020028), the South-Eastern Norway Regional Health Authority, Oslo, Norway
- 2017-2020 Researcher fellowship, Inven2, Oslo, Norway
- 2016-2020 Industrial PhD (project number 259820), the Norwegian Research Council, Oslo, Norway