IIASA Research Program	IIASA Research Group	Research Interests Keywords	Methodologies Covered	Personal Webpage for Further Information (including link to publications)
ASA	CAT	Social media, Misinformation, Disaster risk reduction, Climate change, Decision Making	AI, Machine learning, Deep learning, XAI, QSAR, NLP, Computer vision, Data science	https://iiasa.ac.at/staff/abraham-yosipof
ASA	EM	Earth system modeling, carbon cycle, land use change	OSCAR model, reduced-complexity modeling	https://iiasa.ac.at/staff/thomas-gasser
ASA	EM	Natural disasters (e.g. forest fires), assessment of climate change impacts and adaptation options, economics of adaptation, estimation of the value of information, risk-optimal portfolios, innovative financial tools, asset-level economic modeling, global climate economic modeling, optimal land allocation for agricultural production.	Simulation modeling in general, optimization-based modeling (GAMS, GLPK) e.g. DICE, extensive use of large global climatic datasets (ISIMIP).	https://iiasa.ac.at/staff/nikolay-khabarov
ASA	EM	AI for food security; Food justice and equity; Agricultural commodity trade; Price forecasting; Forecasting for social good; Price analysis; Predictive analytics in food systems; Resilient food markets	Machine learning; Interpretable machine learning; Econometrics; AGRICAF (see link)	https://iiasa.ac.at/projects/cmaf
ASA	EM	Macroeconomics, income & wealth distribution, energy shocks, green transition, automation, monetary policy	Agent-based models, applied econometrics	https://iiasa.ac.at/staff/luca-fierro
ASA	EM	Applications to environmental decision-making	control theory, game theory, machine learning	https://iiasa.ac.at/staff/artem-baklanov
ASA	EM/CAT	Systems thinking, systems mapping, agent-based model, behavior, foresight, scenario, futures research, Arctic, migration, well-being	causal loop diagrams, fuzzy cognitive mapping, systems dynamics, agent-based modeling, scenario planning	https://iiasa.ac.at/staff/nikita-strelkovskii
ASA	NoDES	Earth Observation, Environmental state and change mapping and monitoring, Forest monitoring, Biomass mapping, Forest Regrowth and Resilience, Surface Roughness, Urban mapping, topography, Citizen Science	geospatial data processing and analytics, 3D reconstruction and modeling, signal processing in spatial and frequency domains, Satelite image processing and ML on satellite images, point cloud processing and analysis, time series analysis, Remote Sensing, Earth Observation, Photogrammetry, LiDAR, RADAR, satellite images, InSAR, UAV images, laser scanning,	https://iiasa.ac.at/staff/milutin-milenkovic
ASA	NoDES	Earth observation, remote sensing, environmental monitoring, citizen science, land cover, land use, land use management, machine learning	GIS, geospatial analyses, EO/remote sensing, citizen engagement, machine learning	https://iiasa.ac.at/staff/linda-see
ASA	NoDES	Earth observation, remote sensing, environmental monitoring, citizen science, land cover, land use, land use management, linear mixed models, cropland, crop experiments, statistical analyses, drivers of forest loss, latin america	GIS, spatio-temporal statistical analysis, EO/remote sensing, citizen engagement, crowdsourcing, crop experiments, cropland mapping	https://iiasa.ac.at/staff/juan-carlos-laso-bayas

ASA	SYRR	disaster risk reduction and management; climate adaptation; locally-led adaptation; multi-hazard risk assessment; resilience planning and assessment; urban areas; international development; indigenous knowledge; co-production; risk assessment	qualitative research design; qualitative data analysis; interviews and focus groups; thematic, content and discourse analysis; interdisciplinary and transdisciplinary methods; science/policy interface	https://iiasa.ac.at/staff/robert-sakic-trogrlic
ASA	SYRR	Systems ecology, network analysis, sustainability, urban metabolism, resilience, environmental assessment	network analysis, integrated assessment, systems dynamics	https://iiasa.ac.at/staff/brian-fath
ASA	SYRR	climate adaptation; locally-led adaptation; adaptation planning and governance; resilience assessment; community development; nature based solutions	scenario planning; decision-making under deep uncertainty; optimization; qualitative data analysis; monitoring and evaluation analysis	https://iasa.ac.at/staff/jung-hee-hyun
ASA		digital and natural ecosystems, resilience, human-Earth systems, sustainability tranformation	complex adaptive systems, optimal control, network analysis, decision-making under uncertainty	https://iiasa.ac.at/staff/elena-rovenskaya
ASA/BNR	NoDES/AFE	Forest observation and modeling, climate change impact, carbon budget	Geospatial analyses, remote sensing, citizen engagement, forest modeling (G4M)	https://iiasa.ac.at/staff/dmitry-shchepashchenko
BNR	AFE	large-scale global/regional gridded crop modelling, sutinable agricultural land use, crop management, soil health & indicators (including soil organic carbon & erosion)	EPIC-IIASA model; GIS & geospatial data infrastructures; integrated assesment in multi-dimensional scenario space	https://iiasa.ac.at/staff/rastislav-skalsky
BNR	BEC	Macroecology, Conservation, Biodiversity, Vertebrate ecology, Ecological modelling, Traits, Ecological functions, Food systems-biodiversity relationships, Biodiversity and wind-energy development, Biodiversity-land use-climate change nexus	Statistical modelling, Spatial analyses, Quantitative synthesis, Metanalysis, Functional diversity and biodiversity indicators, PREDICTS database, Space-for-time, Vulnerability analyses	https://iiasa.ac.at/staff/adrienne-etard
BNR	BEC	conservation planning, ecological modelling, biodiversity indicators, food-climate-water-biodiversity nexus, Europe, biodiversity policy, forest management, biodiversity	IBIS.iSDM, prioritizr, bayesian analyses, machine learning, deep learning, scenario planning and analyses, science/policy interface, remote sensing	https://iiasa.ac.at/staff/martin-jung
BNR	IBF	REDD+, LTS and NDC commitments, ETF, GHG inventories, mitigation potential and MRV for LULUCF sector, Integration of climate and biodiversity targets, Carbon Markets, Climate finance.	GHG emission inventories (IPCC, C40); science-policy interface, policy analysis, multicriteri analisis, projections, general equilibrium models	https://iiasa.ac.at/staff/zuelclady-araujo-gutierrez
BNR	WAT	Water management, water allocation, water policy analysis, climate change adaptation	Hydro-economic modeling, optimization, ECHO model, political-economy	https://iiasa.ac.at/staff/taher-kahil
BNR	WAT	Water quality/pollution (nutrients, sediments, temperature, plastics), socio-environmental impacts on water quality, climate impact attribution, regional - global hydrology	SWAT(+) Model, intergrated assessments and coupling	https://iiasa.ac.at/staff/albert-nkwasa
BNR	WAT	water securty; water related environmental issues; remote sensing for hydrology; spatial modelling;	Spatial modelling; Integrated assesment modelling; GIS and geospatial data	https://iiasa.ac.at/staff/emilio-politti

BNR	WAT	alternative water sources; wastewater reuse; water demand; water-food-energy nexus; nature based solutions; drought impact assessment	hydrological modeling; water quality modeling; gis analysis; environmental accounting	https://iiasa.ac.at/staff/dor-fridman
ECE	ICI	Simple climate models; climate projections	Simple climate models (MAGICC, FaIR)	https://iiasa.ac.at/staff/zeb-nicholls
ECE	PM	Air pollution and GHG mitigation strategies, Emission inventory and scenario, NMVOCs(Non-mathan volatile organic compound) emission modeling, chemical species, emission processing for Air Quality Modeling	GAINS Model; Integrated Assessment Modelling; Policy; SMOKE; SPECIES	https://iiasa.ac.at/staff/younha-kim
ECE	PM	Air quality management; Emission inventory and scenario analysis; Greenhouse gases mitigation; Fluorinated greenhouse gases; Co-benefits; Cooling - refrigerants and energy efficiency; Energy economics; Science to policy	GAINS Model; Integrated Assessment Modelling	https://iiasa.ac.at/staff/pallav-purohit
ECE	PM	technology and policy assessment; energy efficiency; mitigation analysis of production and end-of-pipe system; zero emission system; energy and material system; environment impact assessment;	GAINS model; MESSAGEix model; model coupling between IAMs and GAINS;	https://iiasa.ac.at/staff/shaohui-zhang
ECE	PM	carbon and nitrogen cycling; global coupled carbon and nitrogen budget; co-reduction of GHG and N emissions; sustainable development goals(SDGs); halving nitrogen waste; carbon neutrality	CHANS model; GAINS model; cost-benefit analysis; GLEAM model; integrated assessment	https://iiasa.ac.at/staff/xiuming-zhang
ECE	PM	hydrogen, emission inventories, fugitive emissions, biofuels, oil&gas, renewables, diffusion of new technologies, transport sector technologies and policies, energy geopolitics	GAINS model, Bass model, Integrated Assessment Modeling	https://iiasa.ac.at/staff/thiago-brito
ECE	PM/TISS	technology and policy assessment; non-CO2 greenhouse gases (CH4, N2O, F-gases); mercury pollution and policy; Minamata convention; industrial emissions; non-technical mitigation measures; mitigation costs	GAINS model development; emission inventories; science/policy interface	https://iiasa.ac.at/staff/flora-brocza
ECE	PM/TISS	circular economy, material circularity, circularity in white goods, plastic pollution, organic waste management, waste management systems, air pollution and GHG mitigation strategies	GAINS model, MFA, emission inventories, policy	https://iiasa.ac.at/staff/adriana-gomez-sanabria

ECE	PM/TISS	air quality management; GHG mitigation; energy systems; energy-water nexus; change management; CDR; science to policy; unconvential ideas;	GAINS Model; optimization; cost-effectiveness analysis; integrated assessment; machine learning; applied mathematics;	https://iiasa.ac.at/staff/fabian-wagner
ECE	S3	Industrial ecology; built environment; household appliances; critical minerals; sand crisis; material footprints; urban mining; environmental impact assessment and mitigation	Dynamic material flow analysis (MFA); Prospective life cycle assessment (LCA); MRIO; MESSAGEix-Buildings (STURM, GLANCE); Geospatial modelling	https://iiasa.ac.at/staff/xiaoyang-zhong
ECE	S3/TISS	Buildings, Energy Demand, Heating and cooling, Material stocks and flows, Climate change mitigation and adaptation scenarios, Circular economy, Decent housing, Indoor thermal comfort	MESSAGEix-Buildings model, Integrated Assessment Modelling, Buildings energy demand modelling, Life Cycle Assessment, Material flow analysis	https://iiasa.ac.at/staff/alessio-mastrucci
ECE	S3/TISS/IACC	Decent Living Standards; Integrated Assessment Modelling; minimum energy needs; inequality; human needs; justice and equity; emissions trajectories; post-growth;	DESIRE, minimum energy requirements, some LCA/IO, MESSAGE, emissions harmonization and infilling	https://iiasa.ac.at/staff/jarmo-kikstra
ECE		Energy systems modeling, technology cost learning, CO2 removal technologies	Optimization, bi-level game, MESAAGE-ix	https://iiasa.ac.at/staff/yoga-pratama
EF	EELC	Quantitative Macroeconomics, Applied Microeconometrics, Inequality, Labor Economics, Family Economics, Health, Human Capital Accumulation	overlapping generations models, life cycle models, panel data analysis	https://iiasa.ac.at/staff/yuliya-kulikova
EF	EF	Modelling disaster risk decisions, economic modelling of the recycling sector, Modelling behaviour under stochastic shocks, theoretical health economics,Macro-economic aspects of integrated assessment models (IAMs)	Optimal control models (standard and distributed), Dynamic optimisation (for stochastic and deterministic models), dynamic system modelling, general and partial equilibrium models	https://iiasa.ac.at/staff/michael-freiberger
EF	EF	modeling of disruptive changes in environmental economics and (theoretical) models, population dynamics, energy transition, optimal environmental taxation, optimal behavior with strategic interaction (market entry and deterrence)	Optimal control (standard, age-structured, with random shocks), dynamic optimization, dynamic games	https://iiasa.ac.at/staff/stefan-wrzaczek
EF	EF	Economic effects of the interaction between demographic changes and intergenerational transfers. Computable general equilibrium models using realistic demography and National Transfer Accounts (NTA) data.	General equilibrium model of overlapping generations (CGE-OLG); optimal control; population projections; demographic modeling	https://iiasa.ac.at/staff/miguel-sanchez-romero
EF	EF	Financial Economics (Asset Pricing and Optimal Asset Allocation) applied to climate finance. Macroeconomics, Economics of Climate Change (Energy transition)	Dynamic Programming (Analytical and Numeric: Finite Difference Method); Martingale Approach; Solving PDEs using Deep Neural Networks	https://iiasa.ac.at/staff/ibrahim-tahri

EF	EF	Environmental, Development and Behavioral Economics. Impact assessment and Policy evaluation.	Applied Econometrics (Panel data analysis, Spatial regression, Difference in difference, Instrumental variables, Bartik instrument, etc.). Geospatial-information-system (GIS). Micro-simulation.	https://iiasa.ac.at/staff/kimi-vu
EF	EF	Regional energy transitions, impacts of energy transitions on multidimentional poverty, wellbeing measurement	Applied Econometrics, Operations Research	https://iiasa.ac.at/staff/omkar-patange
POPJUS	EQU	Just transitions; climate change impacts and adaptation; Loss and Damage; climate and biodiversity nexus; co-creation; ethical and socioeconomic aspects of the grand global challenges; climate risk management	social science methods; qualitative systems analysis methods; quantiative economic modelling; transdisciplinary research methods and co-creation	https://iiasa.ac.at/staff/thomas-schinko
POPJUS	EQU	Climate & Biodiversity Justice; Environmental Ethics; Carbon Capture & Geoengineering; Scenario Development	Interdisciplinary research, applied ethics	https://iiasa.ac.at/staff/elliott-woodhouse
POPJUS	EQU	Climate Finance; Insurance & Nature-based Solutions; Wildfire Risks; Climate change impacts	Econometrics, spatial statistics, earth observation	https://iiasa.ac.at/staff/timothy-foreman
POPJUS	MDM	Population projection; Demographic modeling; Human Capital; Labor Force	Microsimulation; cohort-component models; statistical model	https://iiasa.ac.at/staff/guillaume-marois
POPJUS	MDM	Demography; population projections; education; downscaling; urban/rural	Population projections	https://iiasa.ac.at/staff/anne-goujon
POPJUS	MDM/MIG	Migration, population projections, population reconstruction	Bayesian statistics, machine learning, cohort component models	https://iiasa.ac.at/staff/dilek-yildiz
POPJUS	MIG	Migration, human mobility in the context of climate change, environment population interactions, climate impacts on health and well-being, environmental concerns and behavior, sustainable development	Applied econometrics/statistics, data science, demographic methods, experiments, impact evaluations, forecasting and projection approaches	https://iiasa.ac.at/staff/roman-hoffmann
POPJUS	MIG	Migration, Demography, Bayesian Methods, Applied Statistics, Computational Statistics, Development Economics	Bayesian Statistics, Compuational Statistics, MCMC, Variational Inference, Econometrics	https://iiasa.ac.at/staff/gregor-zens; https://gregorzens.github.io