Develop materials and methods

Build educational research group

CCSE Centre for Computing in Science Education

Vision "an international hub for research-based integration of computational methods in education"

Build culture for teaching and learning

Disseminate nationally and internationally

Personell

Financed by DIKU


Skramstad,
Manager


Caballero,
Prof. II (20%)


Odden,
Post. Doc.


Lockwood,
Prof. II (20%)


Sand,
PhD-student


Aiken,
PhD-student

Leadership group CCSE (20%)


Malthe-Sørenssen,
Physics


Mørken,
Mathematics


Tellefsen,
KURT/ProFag


Nederbragt,
Bioscience


Sølna,
Administration


Sandve,
Computer Science


Hjorth-Jensen,
Physics


Henriksen,
Physics

ProFag


Haraldsrud,
Sen. Lect. (40%)


Løvold,
Lect. (50%)

Honours-programm/Physics


Sveinsson,
Post-doc (tenure track)

S-ASSESS (NRC, FInnUt)


Hannah Sorbø,
PhD-student


Marin,
Sci. Programmer

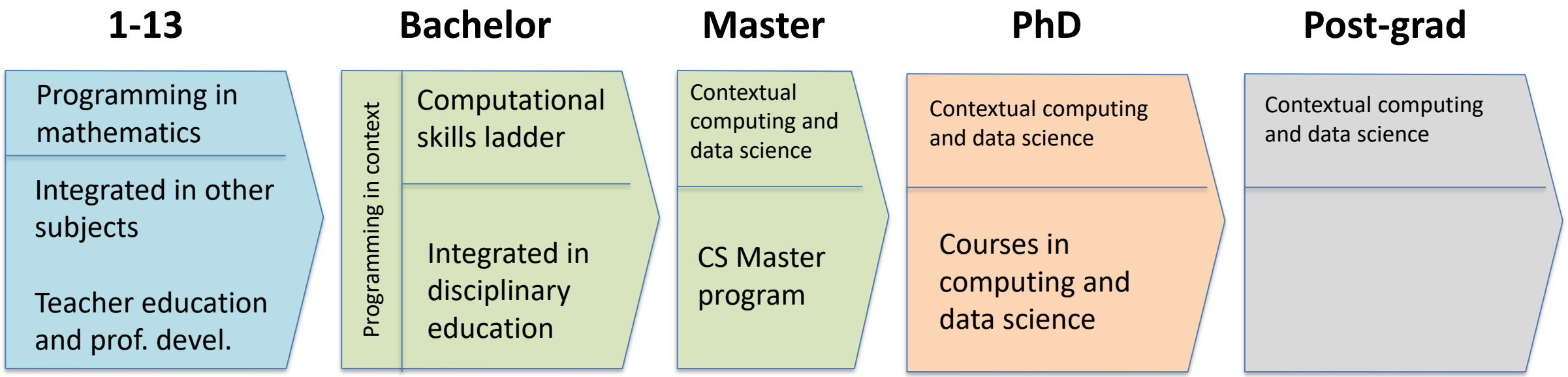
Ten-year progress plan

Present state (2016)	*Progress*
Existing culture with some excellent practices, student engagement	
Math and programming in first semester	
Full CSE integration in 2 of 6 courses, partial in others	
2 textbooks published	
Research basis is sparse	

Five-year-goal (2021)	*Progress*
Initiated research-based approach to curriculum change with students	Ok
Pilot extension to biology	Ok
Pilot adaptation at external partner	Ok
Pilot school program	Ok
Full CSE integration in 4 of 6 courses	Ok
4 textbooks published	3 of 4
Pilot studies of learning outcomes and teaching methods in 3 courses	Ok-

Ten-year-goal (2026)	*Progress*
Internationally leading hub	
Extension to 3 other disciplines at UiO	
Adaptation at 2 external partners	
Running school program	
Full CSE integration in 6 of 6 and 2 advanced courses.	
4 textooks published	
Internationally recognized - computational science education	

Integration across the educational timeline



ProFag:
Programming in a disciplinary context for school teachers

CCSE
Center for Computing in Science Education

CompSci

CompSci is a 8.7 MEUR MSCA COFUND program (2021-2026) that combines a disciplinary doctoral program with intensive training in computing – providing the skills needed to digitally transform science, industry and society.

Hovedtrekk i plan for 2021-2026

Theme 1: Educational development
Integration with experimental methods
Instruction: LA program, PhD training
Learning material: doconce, textbooks
Develop assessments and student evaluation

AI and statistical thinking?

Theme 2: Education research
Computational literacy
Impact in mathmatics (1 PhD)
Impact in chemistry (1 PhD)

Theme 3: Culture for teaching and learning
Internal and external seminars
ProFag for teachers

Theme 4: Dissemination
Extend to MSc and PhD
Beyond science
Circle-U

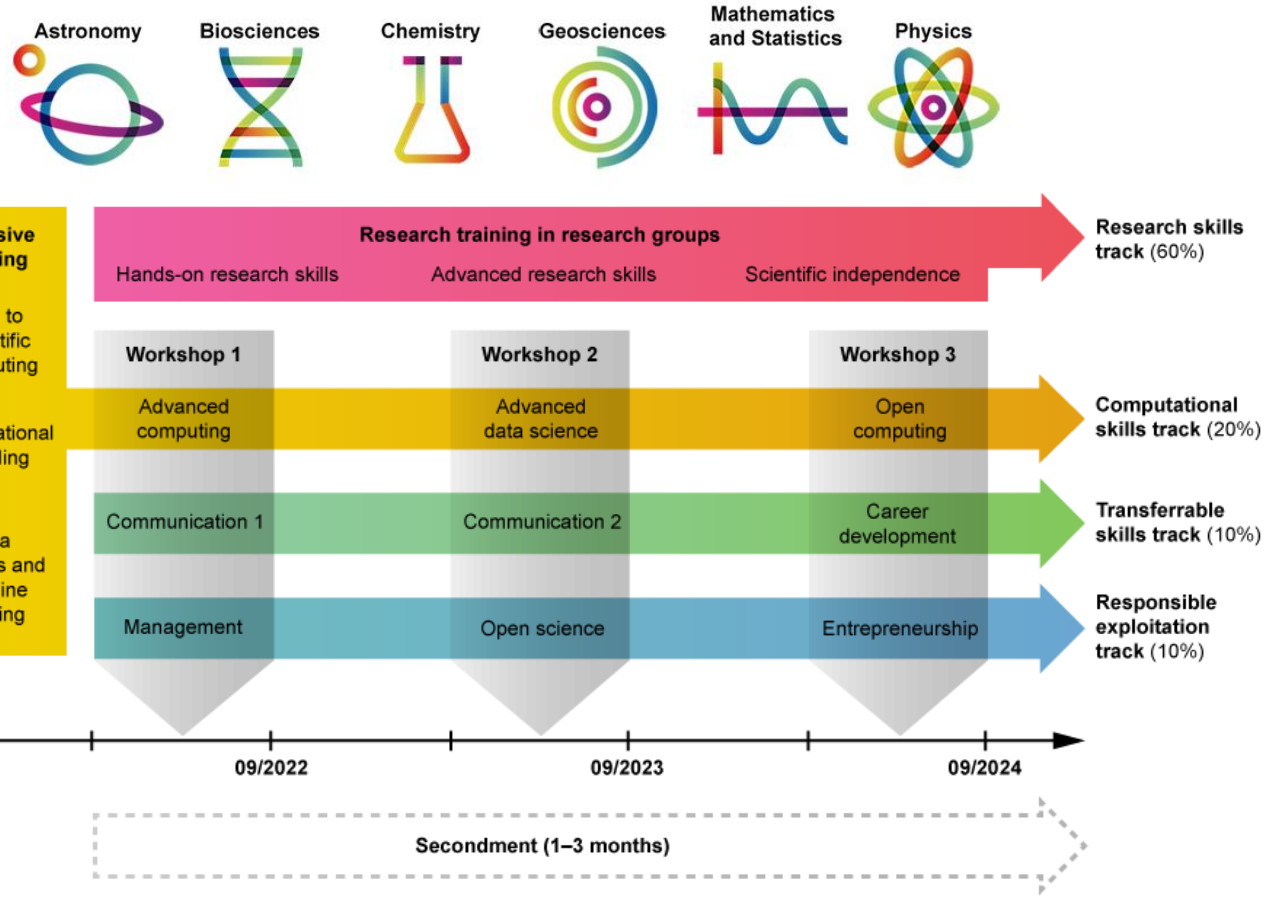
CompSci

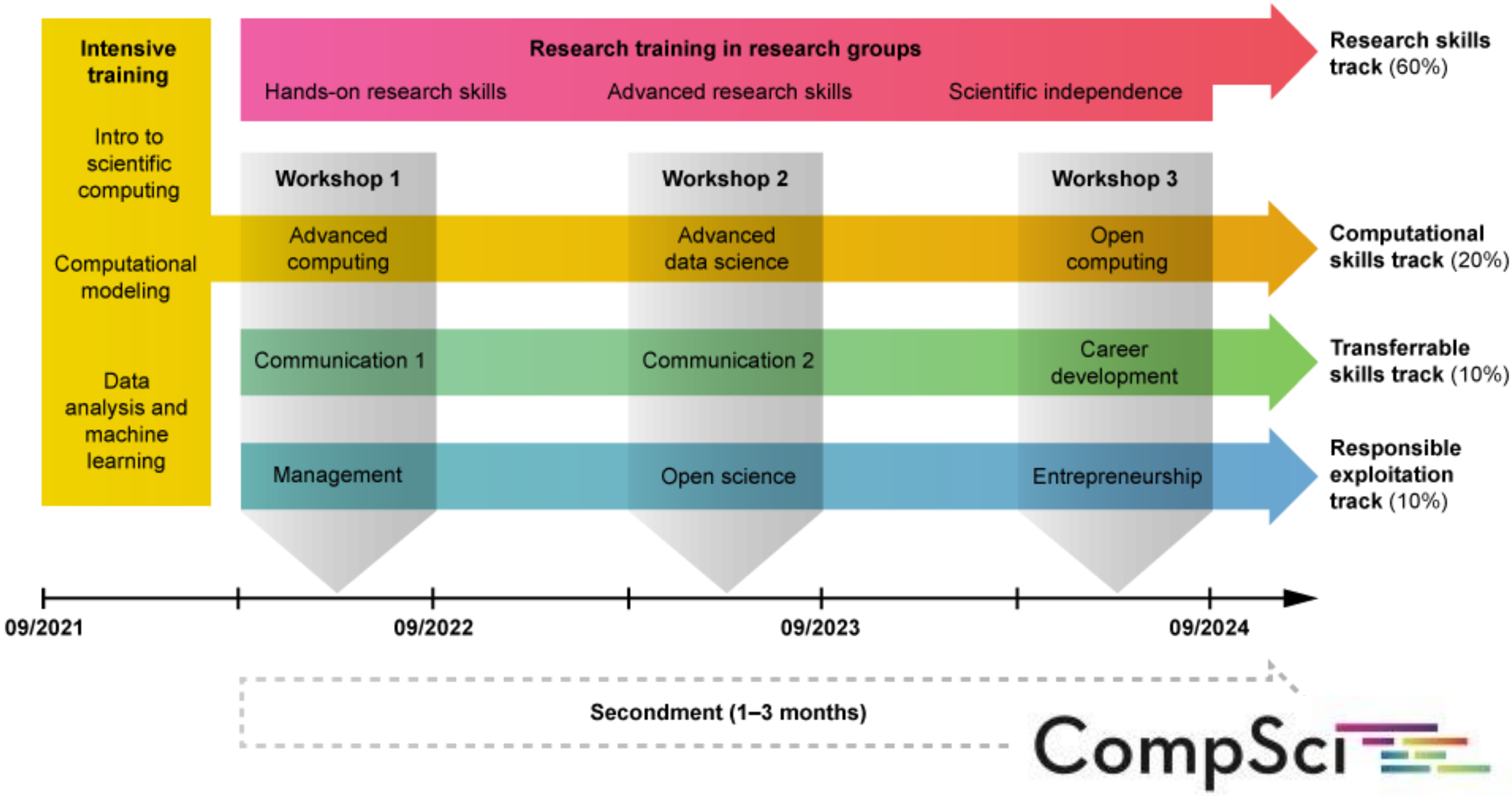
MSCA doctoral training program

32 PhD students: 16 starting 2021, 16 starting 2022

Focus on *research training* and *training in transferable skills*

Transferable skills = computational skills, traditional transferable skills, innovation skills




Intensive training
Intro to scientific computing
Computational modeling
Data analysis and machine learning
Research training in research groups
Hands-on research skills
Advanced research skills
Scientific independence
Research skills track (60%)
Workshop 1
Workshop 2
Workshop 3
Advanced computing
Advanced data science
Open computing
Computational skills track (20%)
Communication 1
Communication 2
Career development
Transferrable skills track (10%)
Management
Open science
Entrepreneurship
Responsible exploitation track (10%)
09/2021
09/2022
09/2023
09/2024
Secondment (1–3 months)
CompSci