

2024-01-05

Till Naturvetenskapliga områdesnämnden

Anhållan om att utlysa biträdande lektorat i marin seismisk sedimentologi

Styrelsen vid institutionen för geologiska vetenskaper (IGV) beslutade 18/12-2023 att föreslå en utlysning av ett biträdande lektorat i marin seismisk sedimentologi, ett ämne som kombinerar sedimentologi och marin-seismiska metoder för att studera stratigrafin och strukturen i havsbotten och underliggande geologi. Utlysningen fyller både lärarbehov efter pensioneringar och kompletterar vår forskning inom det maringeovetenskapliga området. Finansiering sker inom institutionens budgetram. Fördelningen kvinnor och män är ca 45% inom maringeologi och på IGV som helhet ca 40%. Nedan följer en beskrivning av ämnet och mera utförlig motivering, uttaget och uppdaterat från handlingarna till styrelsen i detta ärende, som ursprungligen var skrivna på engelska.

Magnus Mörth, prefekt

Description of the subject

Marine seismic sedimentology is a branch of geophysics combining the fields of sedimentology and seismic methods to image the stratigraphy and structure of subseafloor sediments and rocks that lie beyond the reach of conventional echosounders installed in research vessels. It follows the principles of bore hole-based field geological studies and uses reflected seismic waves, a form of deep penetrating sound pulse, to acoustically image the subsurface to depth's of 100s-1000s m below the seafloor. Seismic profiles are paired and interpreted along with sediment cores or outcrop sampling to verify lithologic interpretations and produce complete stratigraphic models. It is common to use so-called inverse modelling to integrate sediment cores and seismic profiles, where the seismic records are simulated using sediment physical properties measured in cores, to understand how a specific seismic signal responds to thin geological layers within a stratigraphic sequence. The field was established to provide high-resolution acoustic stratigraphic maps of sediment types, their structure and broad spatial extent. *Marine seismic sedimentology* has been used extensively in mineral resource exploration, but now has much more diverse applications in industry, for example for environmental assessments, and in research including glacial geology, palaeoceanography and palaeoclimatology. The research of a *marine seismic sedimentologist* could, for example, involve the internal geological structures of glacial landforms of importance for ice-sheet dynamics, in-turn critical for improved prediction of future sea-level rise, or sediment drift deposits containing palaeoceanographic information of past and present current flows and climate-related changes.

Department of Geological Sciences



Information about the subsurface geology of our oceans and seas will continue to be a vital component of our transition into a green economy and the sustainable use of marine resources. Construction of offshore wind farms and Carbon Capture and Storage (CCS) below the seafloor are two examples requiring a thorough understanding of the subsurface geology. CCS may involve storing carbon dioxide captured from industrial sources and storing them in geological formations. Mapping and understanding the subsurface geology and sedimentological architecture of these formations is critical for the successful implementation of CCS projects. Seismic surveys are commonly the first step in identifying potential storage sites and sedimentological studies of identified formations are key to assessing the storage capacity. Seismic surveys can also be used to monitor the movement and distribution of carbon dioxide within the storage formation and research within the subject of seismic sedimentology may address potential risks and uncertainties associated with CCS, e.g. leakage or migration into other formations or to the surface.

The need for an Assistant Lecturer in Marine Seismic Sedimentology

A marine *seismic sedimentologist* would greatly complement the existing research expertise at IGV, and be a useful asset for teaching, particularly in sedimentology and marine geophysical mapping. We have built a solid and unique expertise in mapping of the seafloor morphology and uppermost (1 – 10's meters below the seafloor) sediments, but we lack the skill-sets and technical expertise required to explore the deeper subsurface layers, shallow bedrock or lithified glacial tills, where seismic reflection methods are required. We have built up lab facilities to characterize and measure the physical properties of sediments, and maintain shallow-penetrating seismic equipment that can be upgraded. A marine *seismic sedimentologist* would fill the gap from Senior Lecturer Eve Arnold (retired 2021) in terms of expertise in sedimentology and also pick up the legacy from Tom Flodén in terms of deep seismic reflection mapping, which currently does not exist at any university in Sweden. Both Otto Hermelin's (Senior lecturer, retire 2024) and Barbara Wohlfarth's (Professor, retired from department work, maintains 10 % for VR engagement) retirements also implies reduction in teaching capacity. Moreover, Martin Jakobsson's assumption of the Vice Dean role in 2024 implies another significant reduction in teaching capacity, particularly in marine geophysical mapping.

With a position in *marine seismic sedimentology* IGV would build up a competence that can support the Swedish efforts in investing and potentially implementing Carbon Capture and Storage (CCS) in the seafloor of the Baltic Sea. The Swedish Geological Survey (SGU) has been assigned the task of beginning seismic surveys in the Southern Baltic already in 2024, and are at the stage of purchasing new seismic equipment. As there are today no academic groups working on marine seismics in Sweden, there is a need to build up such a competence. With this recruitment, we can support this venture by providing the next generation of seismic-competent marine geologists through our new program in Marine Geoscience and PhD subject, as well as exploring the research in this field.

The recruitment will target a person whose research interests are complementary to those within the marine geology and geophysics group, but whose skill set will allow them to branch out into topics like CCS in the Baltic. Their training and education will be grounded in geological science. Therefore, they would contribute to teaching of basic as well as advanced-



level practical and applied sedimentology. The need for a position in *marine seismic sedimentology* has been discussed at group meetings within the marine geology group, and the provided profile has been developed by the group's teachers.

STOCKHOLMS UNIVERSITET
Institutionen för geologiska vetenskaper

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Till
Områdesnämnden för naturvetenskap

Anställningsprofil för biträdande lektor i marin seismisk sedimentologi

Förslag från styrelsen vid Institutionen för geologiska vetenskaper

Ämne	Marin seismisk sedimentologi
Ämnesbeskrivning	Ämnet kombinerar områdena sedimentologi och marin-seismiska metoder för att studera stratigrafien och strukturen i havsbotten och underliggande geologi.
Huvudsakliga arbetsuppgifter	Forskning samt viss undervisning och handledning.
Behörighetskrav	Behörig att anställas som biträdande lektor är den som har avlagt doktorsexamen eller har utländsk examen som bedöms motsvara doktorsexamen. Främst bör den komma ifråga som avlagt sådan examen högst fem år före ansökningstidens utgång. Även den som har avlagt sådan examen tidigare kan dock komma i fråga om det finns särskilda skäl. Samtliga läraranställningar vid Stockholms universitet förutsätter att den sökande har förmåga att samarbeta och lämplighet i övrigt för att fullgöra arbetsuppgifterna.
Bedömningsgrunder	Särskild vikt fästs vid vetenskaplig skicklighet. Viss vikt fästs även vid pedagogisk skicklighet. Den vetenskapliga skickligheten kommer i första hand att bedömas inom ämnesområdet för anställningen. Viss vikt fästs även vid: <ul style="list-style-type: none"> • Förmåga att undervisa i maringeofysisk kartering och sedimentologi • Förmåga att använda och hantera högupplösta marina seismiska mätsystem från forskningsfartyg.
Uppmaning till företrädare av underrepresenterat kön att söka anställningen	
Finansiering	Inom institutionens budgetram.

<p>Anställningsvillkor</p>	<p>Anställningsformen biträdande lektor ingår i universitetets karriärväg ("tenure track") och regleras i Högskoleförordningen (SFS 2017:844).</p> <p>För denna anställning gäller att den biträdande lektorn anställs tills vidare, dock längst sex år. Anställningen kan förlängas till maximalt åtta år om särskilda skäl finns. Särskilda skäl kan t.ex. vara sjukfrånvaro eller föräldraledighet.</p> <p>Efter ansökan och prövning kan den biträdande lektorn befordras till anställning tills vidare som universitetslektor. Specifika kriterier för befordran från biträdande lektor till universitetslektor är fastställda av Områdesnämnden för naturvetenskap.</p> <p>Ansökan om befordran till universitetslektor ska inlämnas till fakulteten senast nio månader innan förordnadet som biträdande lektor löper ut.</p>
<p>Övriga upplysningar</p>	<p>Maringeologigruppen vid Institutionen för geovetenskaper forskar i huvudsak inom områdena marin geomorfologi, paleoceanografi, paleoglaciologi, paleoklimatologi, paleoekologi samt om vätske- och gasflöden i havsbottensediment. Expeditioner genomförs regelbundet med Stockholms universitets forskningsfartyg RV Electra och isbrytaren Oden.</p>
<p>Ansökan</p>	<p>Du söker anställningen via Stockholms universitets rekryteringssystem genom att klicka på knappen "Ansök". Du som sökande ansvarar för att ansökan är komplett i enlighet med annonsen och att den är universitetet tillhanda senast sista ansökningsdag.</p> <p>Vi ser gärna att din ansökan skrivs på engelska, då den kommer att granskas av internationella sakkunniga varvid engelska är arbetsspråket.</p> <p>Universitetets anställningsordning och anvisningar för sökande finns på webbsidan: anvisningar – sökande. Naturvetenskapliga områdets kriterier för befordran från biträdande lektor till universitetslektor finns på webbsidan: riktlinjer - anställning</p>

English translation

Assistant professor* in Marine seismic sedimentology

Subject	Marine seismic sedimentology
Subject description	The subject combines the fields of sedimentology and marine seismic methods to study the stratigraphy and structure of the seafloor and sub-bottom geology.
Main responsibilities	Research and in addition some teaching and supervision.
Qualification requirements	<p>In order to qualify for the position as assistant professor, the applicant must have completed a doctoral degree in Sweden or an equivalent degree from another country. In the first instance, an applicant should be considered who has received such a degree no more than five years before the deadline for applications. However, an applicant who has received such a degree earlier may be considered under special circumstances.</p> <p>All teaching positions at Stockholm University require the ability to collaborate and the general ability and suitability to perform one's duties.</p>
Assessment criteria	<p>In the appointment process, special attention will be given to research skills, and some consideration will also be given to teaching skills.</p> <p>The assessment of research skills will focus primarily on merits within the subject area of the position.</p> <p>The following will also be considered:</p> <ul style="list-style-type: none"> • Ability to teach within marine geophysical mapping and sedimentology. • Ability to operate and utilize high-resolution marine seismic systems from marine research vessels.
Gender considerations	
Funding	Within the department's budget.
Terms of employment	<p>This position (in Swedish, "biträdande lektor") is a tenure track position, and the qualification requirements and terms of employment are regulated by the Higher Education Ordinance (SFS 2017:844).</p> <p>For this tenure track position, the assistant professor is employed until further notice, but no longer than six years. The</p>

	<p>contract may be extended to a maximum of eight years under special circumstances, such as due to sick leave or parental leave.</p> <p>An assistant professor may, on application, be promoted to a permanent position as associate professor. Specific criteria for promotion from assistant professor to associate professor have been established by the Faculty of Science.</p> <p>An application for promotion to associate professor should be submitted to the faculty at least nine months before the appointment as assistant professor expires.</p>
<p>Additional information</p>	<p>The marine geology group at the Department of Geological Sciences focuses on the fields of marine geomorphology, paleoceanography, paleoglaciology, paleoclimatology, paleoecology, and sub-bottom fluid flows. Expeditions are carried out regularly with Stockholm University's research vessel RV Electra and Swedish icebreaker Oden.</p>
<p>Application</p>	<p>Apply for the position in Stockholm University's recruitment system by clicking the "Apply" button. It is the responsibility of the applicant to ensure that the application is complete in accordance with the instructions in the job advertisement, and that it is submitted before the deadline.</p> <p>We would appreciate if your application is written in English. Since it will be examined by international experts, English is the working language.</p> <p>The University's rules of employment and instructions for applicants are available at: Instructions – Applicants. The criteria for promotion within the Faculty of Science are available at: Guidelines – Employment</p>

In the event of a discrepancy between the English translation and the Swedish original, the Swedish version takes precedence.

Förteckning över tänkbara sökande. Ange kön (k/m) samt nuvarande arbetsplats:

Tegan Levendal	Debmarine Namibia	K
Ruth Beckel	Uppsala University	K
Amando Lasabuda	University of Oslo/University of Sydney	M
Arne Lohrberg	Kiel University	M
Karin Landschulze	NLA Høgskolen Bergen	K
Helene Meling Stemland	Bergen University	K
Danielle Marie Howlett	University of Bergen	K
Fabian Tillmans	University of Bergen	M
Albina Gilmullina	University of Bergen	K

Malin Waage	UiT	K
Christopher Sæbø Serck	University of Oslo	M
Sirikarn Narongsirikul	Conoco Phillips	K
Jørgen André Hansen	Norwegian Def. Research Establishment	M
Thea Sveva Faleide	Norwegian Geotechnical Institute	K
Volodya Valeriev Hlebnikov	University of Oslo	M
Mohammed O. F. Zizi	PGS	M
Aleksandr Montelli	University of Cambridge	M
Jiten Patel	Victoria University of Wellington	M
Ayobami Abegunrin	MARUM, Bremen	M
Masoud Aali	Dalhousie University	M
Dallas Sherman	Scripps Institution of Oceanography	F
Jingxuan Wei	Texas A&M University	M

Beskrivning av hur institutionen kommer att arbeta för att informationen om den lediga anställningen effektivt ska nå tänkbara sökande (kan också beskrivas i missivet):

Institutionen kommer att arbeta med en rekryteringsgrupp bestående av Helen Coxall, Sarah Greenwood, Richard Gyllencreutz, Matt O'Regan och Martin Jakobsson. Gruppen kommer att arbeta med flera kanaler för att nå ut så brett som möjligt, tex:

- Arbetsförmedlingen
- Social media (LinkedIn, Research gate etc.)
- Nationella och internationella nätverk
- Riktade brev till tänkbara sökande