

19 PROF. BENGT SUNDELIUS: Thank you very much. Have a
20 seat and we will continue the dialogue. And this report
21 is on the table outside for those of you who want to get
22 into details. In any good seminar we have a discussant.
23 Dr. Starnes Walker has agreed to be the first discussant
24 to have some reflections on the findings, priorities and
25 also put them in perspective of the U.S. perspectives.

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1 Are there different priorities, commonalities and so
2 forth. Dr. Starnes Walker, director of research, DHS.
3 DR. STARNES WALKER: Well, it's a pleasure to be here,
4 and I think what strikes me as being embodied within the
5 ESRIIF report first of all is within the word itself, and
6 that's research and innovation. There's a common ground
7 across the sciences that looks at discovery, invention
8 and how it applies to the world we live in today. And
9 with the security environment that we have in this world
10 and the evolving threats, those threats can be of course
11 as stated by our speakers today both in man-made and
12 natural disasters. So we have tried to look at the
13 framework in a very similar way within the Department of
14 Homeland Security as is embodied again within the ESRIIF
15 report, and it strikes me as I looked within the first
16 cluster of security cycles of preventing, protecting,
17 preparing, responding and recovering to these threats,
18 embodied in that of course is the science that we look
19 at and say what are the strategic areas of investment
20 that are important that we can nurture? I'm also
21 reminded that many discoveries occur over very long
22 periods of time so we have to distill these efforts into
23 some strategic focus areas. I'm very pleased to say
24 that within DHS S&T we've spent a great deal of this
25 year to try to bring this to more of a focus area. In
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1 fact we have just published the focus areas for research
2 that is available on our website and to kind of overlay
3 against this threat matrix that we have in front of
4 U.S.. the ESRIIF report talks about the importance of
5 interoperability, and I'm reminded, in early days of
6 research that I was involved in, and many of U.S. when
7 we started our research careers in science, the
8 importance of relating it to operation tactical type of
9 capabilities and the feedback that you have between that
10 operating environment to the researcher in the
11 laboratory. And it's important to have that so that
12 you're always looking at an observation of the science
13 and how it relates to the real world and the
14 applications. I think one of the really valuable tools
15 is that as the agenda is developed for ESRIIF, that the
16 utilization of things like operations research to work
17 downward into what is the problem you want to address,
18 what is the underlying science that we understand today,
19 what are the key components we wish we had and how you
20 do you move forward from there. You then have to work
21 across the science communities, and of course in this
22 case, because we're dealing with the human aspects, this
23 includes the physical sciences, the human behavioral
24 social sciences. There's an integration across these
25 fields that is much more encompassing than you've had in

1 years past, I believe. Because many times you find
2 separate organizations and institutions within each of
3 these communities that haven't overlapped. I think the
4 opportunity of discovery is probably very high when you
5 bring these communities together that haven't worked
6 together. I always remind people that discoveries occur
7 in seams of disciplines where physics, math, chemistry,
8 biology intertwine. Likewise, if we integrate that with
9 human behavioral and social sciences, I think the future
10 of discovery is even greater where that can apply to the
11 importance of improving the human capabilities to
12 address these common threats that we have globally. Of
13 course we were reminded earlier by our speakers about
14 the 18 sectors of industry the U.S. looks at, which is
15 common across Europe and the globe, of how we live in an
16 interconnected society, and much of this is cyber
17 enabled. Many of the things that we deal with and have
18 the challenge is in the areas of interoperability, and
19 again the science that underlies that interoperability
20 is most important for U.S. to be able to understand in a
21 better way. I think that this is the opportunity that
22 we have. One of the things that I'm very pleased to say
23 is that within the Department of Homeland Security's
24 investments in science and technology, we've taken, as
25 shown by our previous speaker, the role that research

1 will play in this in trying to bring forth with
2 partners. And we have a business process and an
3 organizational structure that really is reaching out
4 globally, and that's one of the reasons we find this
5 gathering so important, is to bring this large community
6 together because we all feel that again the
7 cross-cutting areas of science will be a catalyst for
8 these discoveries. Within our investments in science
9 and technology, which is actually within DHS small in
10 comparison to many of the other federal organizations
11 within the United States, it behooves U.S. to be able to
12 leverage the investments across the U.S. Government and
13 with our European partners. This is something that we
14 have within the National Science Foundation within the
15 United States, certainly within the Department of Energy
16 national laboratories, with industry, with other sectors
17 of other government agencies, and with working across
18 the academic communities of the world we have our DHS
19 Centers of Excellence. We now have 12 of these centers,
20 but actually those centers comprise almost 240 academic
21 institutions. And these institutions again look for
22 international partners across the academic community,
23 and we certainly encourage that. Likewise with the
24 programs of sabbaticals that we have between the
25 academic institutions, many of these centers encourage

1 movement of both their research faculty to those
2 institutions of similar interests across Europe, and we
3 find that this is an important means of enhancing
4 discoveries. So we encourage that through our
5 activities. I think that overall I can say that I
6 believe we have an extremely good collaboration in
7 research. I believe that we can always make it better,
8 and I think it's an opportunity with this community to
9 then be able to work together in a more close union in
10 the areas. And, again, science is meant to be something
11 that is not partitioned or something that's constrained.
12 It's really meant as something to broadly reach across
13 in these challenges. And it seems to me that the areas
14 that we have lined out for challenges only is going to
15 create a greater unity, and I'm very pleased to see
16 that, one, that we have this forum together and also
17 with ESRIIF in terms of what they will be setting up as
18 the research agenda. I also point out that we also need
19 to balance between basic research and innovation. Many
20 times great strides occur by taking chances. And so one
21 of the things that we have tried to emphasize in our
22 investments within DHS is a balance between innovation
23 and basic research. So that's something that we will
24 continue to encourage, and I am very pleased to say that
25 we have a number of international partners with our

1 innovation programs under way. And I'll talk a little
2 bit more about that tomorrow and some of the examples.
3 But it's a pleasure to be here. I know I'm standing
4 between you and lunch, and we also need a few minutes
5 for questions, so I think I will keep my comments to
6 those that I've shared with you. And thank you very
7 much.