



November 21, 2003

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MR. LUTZ: Good afternoon, I'll call this meeting to order. It's a real honor for the Virginia Bioinformatics Institute of Virginia Tech to host this joint meeting of the Tobacco Commission and the Policy Advisory Board of the Virginia Bioinformatics Institute.

We have a very upbeat, informative agenda for today's meeting, and I appreciate the presentations, and I think they're truly outstanding.

I'd like to make a few introductions now. As you can see from where you're sitting, we have the VBI Policy Board people sitting here, and the Tobacco Commission people here, and the Virginia Tech people here.

On our board, we have John Alderman, who's been with us for a couple of years, Gary Clisham is a member of the Tech Board of Visitors, who has sat in on these meetings as a member of the Tech Board although he has not been a member of the board and he was appointed last year. Larry Framme has been with us for a year or two. Tom Rust is a member of the General Assembly and been on the board for a couple of years.

We have Hemant Kanakia, who will be joining us a little later today. He runs his own business in Northern Virginia and will join us about 3:30 or 4:00 o'clock. He brings a lot of technical knowledge to this board, including his Ph.D. from Stanford, so we're very happy to have him with us.

Bruno, I thought I'd turn things over to you to make some introductions.

DR. SOBRAL: Thank you all for being here. Other than myself who's just a cheerleader here, these are the people that actually do

1 most of the work that you're going to hear about today. Dave Sebring
2 over there is in charge of our corporate and federal relations. Lauren
3 Coble actually runs the institute. And Neysa Call is in charge of
4 education and outreach and public relations. Shannon is the one that
5 keeps me pointed in the right direction. So without those folks, it
6 wouldn't be possible to have this meeting. Everyone knows Dr. Steger
7 sitting over there to your left.

8 MR. LUTZ: This is a meeting for you folks, so I guess you
9 want to do a roll call, and then we'll turn it over to you.

10 MR. CURRIN: Thank you. Mr. Bryant?

11 MR. BRYANT: Here.

12 MR. CURRIN: Delegate Byron.

13 DELEGATE BYRON: Here.

14 MR. CURRIN: Delegate Johnson?

15 DELEGATE JOHNSON: Here.

16 MR. CURRIN: Mr. Secretary?

17 SECRETARY SCHEWEL: Here.

18 MR. CURRIN: Mr. Walker?

19 MR. WALKER: Here.

20 MR. CURRIN: Mr. Mayhew?

21 MR. MAYHEW: Here.

22 MR. CURRIN: Mr. Moody?

23 MR. MOODY: Here.

24 MR. CURRIN: Mr. Chairman?

25 DELEGATE KILGORE: Here.

26 MR. CURRIN: We have a quorum, Mr. Chairman. The
27 only official business is adoption of the minutes.

28 DELEGATE KILGORE: Do I hear a motion that we adopt
29 the minutes?

30 DELEGATE JOHNSON: So moved.

31 DELEGATE BYRON: Second it.

32 DELEGATE KILGORE: I have a motion and seconded
33 that we adopt the minutes. All those in favor, say aye. (Ayes.) Opposed?
34 (No response.)

35 That takes care of that.

36 MR. CURRIN: At the end, we have to open it up for
37 public comment.

38 DR. STEGER: I'd like to say I recall a meeting with the
39 Tobacco Commission where you voted to help us fund the Bioinformatics

1 Institute, and without that support, that institute would not exist today. I
2 think that's an investment that has proved to be a wise one. Bruno and his
3 people have done an excellent job in terms of research grants. Also laying
4 the foundation through generation of research and a new generation of
5 companies for the Commonwealth of Virginia. I can't thank you enough
6 for what you all have done, and we're very proud of what has been
7 accomplished. We look forward to a bright future. With that, I'll turn it
8 over to you.

9 MR. LUTZ: Thank you for that. Bruno, I'll turn it over to
10 you.

11 DR. SOBRAL: Thank you very much, Mr. Chairman. I'd
12 like to present the 2003 Annual Report, and I'll turn it over to Dr. Call.

13 DR. CALL: Good afternoon and happy Friday. It's my
14 pleasure to represent VBI on behalf of Virginia Tech, the investment
15 you've made in Virginia Tech, and we thank you very much. It's also
16 been my pleasure to put together the Annual Report for this year, which
17 encompasses the fiscal year 2002 and 2003 for VBI.

18 What you're looking at right now, we call it a preview
19 because this is a print of the Annual Report, but it will actually come off
20 the press with a hard copy. So we were waiting for that anxiously. You'll
21 receive a new one in the mail if you don't have it.

22 I thought I'd walk through the Annual Report and talk
23 about what inspired us in terms of this particular theme. When I first
24 started at VBI a couple of years ago, what inspired me was the fact that
25 the staff should vote on mottoes that we wanted to use as our calling card
26 and the motto that the staff selected was dealt with information.

27 So I tried to pick scientific information to display that
28 motto and the metaphor for that. So if you look at the cover, this is
29 actually the DNA blueprint. We took the design and blew it up. Inside
30 where you usually find the mapping of the Deno, we inserted images of
31 actual research projects at VBI.

32 Those are the images you see inserted in the Deno. With
33 that, the metaphor was established and the theme for the Annual Report.
34 We'll walk through this briefly.

35 The first section has to do with the directors. These two
36 pages tell us how VBI can become one of the top 30 research institutes
37 and how we can reach those particular goals. Then Dr. Sobral's message
38 and his return to VBI. Then the next section has to do with the buildings
39 that are being built and what we're doing. So we hope you'll enjoy

1 reading through this. This is what we're doing on campus. A preview of
2 the buildings will be open to you all tomorrow.

3 Then the next section of the Annual Report talks about the
4 two core facilities in VBI. The core infrastructure which supports the
5 research programs not only for VBI, but this establishes the core research
6 in Virginia and beyond. So all of these service platforms are available
7 for any research that could use them.

8 There's a tour, by the way, of these facilities today at 4:00
9 o'clock, and you're more than welcome to walk through and see those
10 platforms.

11 MR. LUTZ: Excuse me, you talk about the tour, that's in
12 this building?

13 DR. CALL: Yes, at 4:00 o'clock this afternoon.

14 MR. LUTZ: Will there be a tour of the supercomputer, is
15 that on the agenda?

16 DR. CALL: The Big Mac, as it's referred to. There's no
17 tour for that on our agenda.

18 MR. LUTZ: I'm sure if anyone wants to see that, you
19 probably could arrange that. That's the largest supercomputer of any
20 university in the world. If anybody during the course of this conference
21 would like to have a tour of that, I'm sure we can make arrangements to
22 do that.

23 DR. CALL: Actually, they told us to put the project
24 together for Virginia Tech for the conference area.

25 SECRETARY SCHEWEL: For better public relations,
26 I've read about the computer this week, I think it was in *Newsweek* or
27 now *World Report*, but that would really be good for public relations.

28 DR. CALL: The next section in the Annual Report starts
29 on page 14, and that's the actual research program. These programs run
30 through the end of June 30th, and there's 42 funded programs. That
31 involves agriculture, environment, and human health, and nutrition, and
32 focusing on problems in those areas specifically.

33 The next section of the report starts on page 34, Public
34 Relations, Public Relations and Outreach section. This section covers
35 some of VBI's first activities in this area. We structured different
36 conferences, and we also have a Ph.D. program here at Virginia Tech.
37 This involves genetics and bioinformatics and computational biology
38 graduate programs here.

39 MR. LUTZ: My son was here.

1 DR. CALL: The next section of the report begins on page
2 38 about VBI's faculty here and about the research program that we speak
3 about previously in the report.

4 Each of the faculty members that list the publications, the
5 grants that are currently funded, and a brief description of each of their
6 research programs. The faculty members will join us for the 4:00 o'clock
7 tour here and reception that we're going to have.

8 The last section of the report is Administration and
9 Finance. It captures our administrative team. The proof of the pudding,
10 as Dr. Sobral would say, all of our financial statements are summarized
11 and the activity to date. Also, that entails our grant portfolio. This
12 section also captures our funding partnerships. You'll see that portfolio
13 keeps on increasing daily, and Dr. Sobral's portfolio keeps up to date with
14 the wonderful cooperative effort we all have. Those partnerships include
15 what all the partners are working on. That's VBI 2003.

16 MR. CURRIN: We have with us today two other members
17 of our Commission who are new, and that includes Mr. Harrison Moody
18 from Dinwiddie County, and Mr. Mayhew from Pittsylvania County, and
19 Mr. Jerry Fouse, a member of my staff that runs our Southwest Virginia
20 office.

21 DR. SOBRAL: I want to walk through some of the
22 highlights of the quarter and achievements that we've made during that
23 period of time. For those of you that haven't seen me before, this will be
24 pretty informal, and if you want to stop me at any point and make any
25 kind of comment or question or anything like that, I'll be happy to do that.

26 We're going to basically go through this, and it talks about
27 the scientific programs. You'll hear a little bit about the construction, the
28 development, and then finally the administration and the finances.

29 I want to make one quick comment. We had the good
30 fortune recently of working with the NIH quite extensively on the
31 development of the road map, and you may have heard of this. The new
32 NIH director has asked all of the NIH institutes to work to develop a road
33 map of the future of biomedical research throughout the country, both
34 within NIH, as well as the extra programs and ones that we compete for.

35 One of the things that's come to my attention is that this
36 new area that they're calling Systems Biology, which is what we do in
37 bioinformatics, is a significant component. It has a lot of definitions and,
38 in fact, the retreat we were at, which was a beautiful facility, that was two
39 weekends ago. We talked for a whole day, and you can imagine scientists

1 spending a whole day trying to, we probably ended up with about 20
2 definitions.

3 There was one gentleman who came from the private
4 sector and made an interesting presentation where he said all of this is
5 great, but what's really going on is the industrialization of biological
6 research. The point is that this is entirely reorganizing the way that we do
7 research in biology. It is a complete turnaround, and it is one that we
8 think that the institute you all have helped create is square in the middle of
9 capturing this new opportunity. What it is, is essentially bringing
10 industrialization to biology, and the goal is to reduce the cost of gathering
11 data. In fact, this is what we've observed all the way through. It's much
12 cheaper to generate the data now because of all this industrialization. If
13 you'd take an opportunity to walk through our facility, you'll see lots of
14 robotics and computers, and that's what this is all about.

15 It's a factory model and lots of robotics, and in
16 implementing this kind of a model, this is not just about science, it's also
17 about how you can manage this. You require teams of continuously
18 committed and trustworthy excited scientists. I think that is Virginia
19 Bioinformatics Institute's largest asset. We have team-oriented high
20 quality scientists that are continuously committed, continuously excited
21 and trusting partners. That's what it's going to take to compete at the top
22 levels for the NIH dollars.

23 This is a crucial thing to think about in how we organize
24 the research. Our biologists need to start understanding the computer
25 science a lot better than they have, and I think we're at the forefront of
26 doing that.

27 The other point I'll make here is that I've examined many
28 millions of dollar projects that have been funded. In those projects, 90
29 percent of the budget goes to data management or data generation. Then
30 10 percent supports the discovery-based access to generate new products
31 for society, change health care, agriculture, and all these things that we're
32 trying to change.

33 So our core is extremely well positioned as well, and this is
34 what's required if you really want to bring in the big dollars to support big
35 projects.

36 SECRETARY SCHEWEL: Dr. Sobral, your last bullet
37 there about better understanding the logic of high level software
38 architecture, is the fact that this institute is located at Virginia Tech and
39 particularly strong computer and software related stuff compared to some

1 of the other institutions, is that a competitive advantage that you all have?

2 DR. SOBRAL: It was certainly a competitive advantage in
3 my decision to come here because I felt that the right approach to carve
4 out a niche was to take a very strong IT view of coming into this area.
5 Certainly not only the capabilities on campus, but we have 20 professional
6 software development teams within the institute as well. I think that's a
7 unique position and opportunity for Virginia as a whole because of the
8 strengths of IT here, but you're going to make sure that you take
9 advantage of that in your implementation.

10 MR. McNAMEE: What about the collaboration with
11 Wake Forest, does that, the Medical Center along with our technical
12 expertise and especially seeking out NIH grants?

13 DR. SOBRAL: Yes, a collaboration with Wake Forest,
14 Georgetown, Johns Hopkins, and we have a big relationship there as well.
15 That's crucial, and, in fact, the card we play from this institute's
16 perspective and all of those collaborations, yes, but you don't have any IT
17 or data management or computational resources, and that's true.

18 Meanwhile, we compliment very well with our medical
19 knowledge. Most medical schools don't really get these two parts and
20 maybe even this part very well, but I think we're at a very unique and
21 positive position.

22 This is just a couple of quotes from the road map itself so
23 you don't think this is Bruno making things up. The scale and complexity
24 of today's biomedical research problems increasingly, and look at the
25 word increasingly and look at the word demand, that scientists move
26 down the confines of their own disciplines and explore new organizational
27 models for team science. That's exactly what we're doing at this
28 institution. This demands that we break down barriers among disciplines,
29 as well as among our own institutes and centers.

30 It's absolutely crucial that you have to seek synergy, you
31 have to look for complimentary, and you have go on with this in a very
32 quick way rather than a very slow and everyone has to agree kind of way.
33 We need to challenge ourselves continuously.

34 The kind of things that came out in the road map have
35 made it even clearer that the decisions we've made in our organizational
36 structure that we put in place at this institute are right on the money. As a
37 result of that, we're going to just focus for a second on one grant where
38 the Virginia Bioinformatics Institute is actually providing bioinformatics
39 and genomics resources through our core facilities and our professional

1 software development for a consortium that involves 14 Mid-Atlantic
2 universities as well as a half dozen federal agencies and nine corporations.

3 This is a \$42 million project for five years. We have
4 within Virginia Tech a collaboration for veterinary medicine, and one
5 faculty member is working on a very important pathogen. The goal of
6 these centers is to provide a national infrastructure and it's a \$340 million
7 program within NIH to respond to infectious diseases and bioterrorism.

8 We not only have become a part of providing
9 bioinformatics for this consortium, but we beat out players like Tiger, and
10 some of you may have heard of Tiger, but we beat out the best in the
11 business here.

12 This is recently divided in countries, so there's one led by
13 the Mid-Atlantic, and that's the University of Maryland, and one in the
14 south region, which is Duke. The leaders of Duke have come to us
15 requesting and wanting to know whether we would be interested in
16 providing bioinformatics for their RC. We've started conversations with
17 New York on the same subject matter. Our long-term goal is that we'd
18 become the bioinformatics corporate headquarters along with our
19 program.

20 By the way, NIH told us very clearly at our kickoff
21 meeting about a month ago in Baltimore that the leverage by having a
22 VBI partner in this was enormous. This week, we're submitting
23 supplemental budgets on our initial requests for this program. I expect
24 this is going to be an open spigot to NIH.

25 Just to clarify this since it's been brought up, Mr.
26 Chairman, the original amount coming to Virginia Tech is about 2.2
27 million, of which 1.5 of that comes to VBI and the rest, but our first
28 supplemental budget just for one year that we're completing now is over
29 \$2 million. I expect by the end of this program the first five years of the
30 program and I'm not sure that it will be this big a number, but it will be a
31 lot bigger number for the budget. The business model that we put forth to
32 NIH is for investigators in the REC's core services, and they love the
33 idea. Now we're sending them the first supplemental budgets to support
34 that. That's why it's an open spigot.

35 This is to show you, and I know you can't read all this, but
36 you have the handout there in front of you. This is just to show you the
37 complexity that actually went in with the proposal. The proposal was
38 close to 1,500 pages long. The grant review was 90 pages long. We were
39 singled out as one of the really important cores. You can see all the

1 different government partners. This does a lot of infectious research.
2 This is the national funder, the National Institute of Health, and that's a
3 piece of that institute. Walter Reed, FDA, and Navy, and others.

4 Then you look over here, and we have corporate partners
5 because academics aren't good at making vaccines and therapeutics, but
6 companies are. We're going to be responsible for feeding all the data and
7 supporting all the data coming out of this and feeding it to people who can
8 handle the counter measures and so forth.

9 You can see by the sheer complexity of this that this is no
10 longer just Virginia Tech. The world has very much changed and
11 organizations that capitalize on this are the ones that collaborate and can
12 work across disciplinary boundaries easily. We had less than two months
13 to prepare this whole draft. Right now we're in the process of a similar
14 one. Part of the tactics of some of these funding agencies is to give very
15 little time so the people that need to think about it for six months don't get
16 it done, but you've got to be ready to move when you need to.

17 Now, what are we doing, you may have seen this before,
18 but we've been telling federal agencies for close to three years that in fact
19 you have a problem with infectious diseases. Pathogens get into the
20 country by all sorts of ways. Even if we get rid of all the bad guys some
21 day, they'll still come in. Pathogens can attack humans and cows and
22 pigs and chickens and plants. There's a big opportunity to deal with this
23 in an integrated way, dissolves the disciplinary boundaries both in
24 academia as well as in the federal agencies. It's equally important that
25 both of them start thinking equally across boundaries rather than be
26 contained by them.

27 I remember when Jay Sebring and I were talking about
28 DOD and we put this chart up, get rid of the rest of this, and we care
29 about soldiers in the field. They've been coming to us now more and
30 more, including the Department of Homeland Security, and they said,
31 you've got it right, this is the way we need to do it because after 9-11,
32 things changed.

33 SECRETARY SCHEWEL: This is a marketing thing and
34 sort of converting weaknesses to strengths because you look at these
35 columns, that column is the strongest, is that correct?

36 DR. SOBRAL: Right, not only that, but no medical school
37 that I know of can do this part and bring it all together. You need IT to do
38 that.

39 One of the things we've been doing now for close to two

1 years with funding from DOD is that we've been building this pathogen,
2 it's basically an IT software system that brings together data from a
3 number of different places. It's using the cutting edge industry standards
4 IT architecture, and we won't get into that, but it's very important because
5 it's an architecture that supports collaboration, and a lot of the
6 architecture that's been built in the '90s software do not support
7 collaboration.

8 Players like Dell have used this type of architecture to kick
9 everyone else ahead of them off the table. It's an open architecture that
10 supports just in time the kinds of requests, and that's how Dell got where
11 they are. We're pioneering this type of architecture.

12 Here are a number of other different reports that we read in
13 CR system and what they have to deal with. There's an HHS report called
14 the National Health Information Infrastructure, and they said the number
15 one problem for this nation for health informatics is the lack of
16 interoperability between proprietary systems. Seventeen percent of our
17 health care dollars go to managing information and copying things over
18 again, and the health care dollars is a big budget.

19 The microbe project, and they're interested in a lot of these
20 pathogens has determined that one of the big problems is that we know
21 very little about these pathogens, so we need that data, and that's another
22 thing we're involved with. Dr. John Marburger, the science advisor from
23 OSTP, has stated that many of the technologies that we need to protect
24 ourselves from, terrorists are available with the exception of essentially
25 biological warfare. Director Harold Varmus in 1999 with an interagency
26 working group essentially said we need to create national centers for
27 biomedical computing. And I mentioned earlier, that's a huge new
28 opportunity. I've been worked very hard in Washington by the NIH for
29 three hours, and we need to apply that information here.

30 Other things that have been going on is that we've gotten
31 this little plant over here, and it's a relative of mustard, and it's been
32 sequenced, and it's very important for that reason. We've had a team here
33 at VBI and have gotten a 1.8 million grant from NSF. The goal is that by
34 the year 2010, we've gotten a new 1.8 million project from NSF. The
35 goal, the reason that it's called the 2010 project is that by the year 2010,
36 we will know the function of each of the parameters of that plant and then
37 leverage that. That could change agriculture.

38 That's basically lead by Vladimir Shulaev, one our faculty
39 with the University of Michigan. Almost every grant, the 40 odd that

1 were mentioned earlier, is collaborative. This is all really about team
2 science. He's with the Salk Institute. Almost every grant of the 40 odd
3 that were mentioned earlier is collaborative, and this is really about a team
4 science. Basically, the idea of understanding certain types of plant genes,
5 which is very important, and Vladimir has a unique platform to measure
6 technicals of the plant. He's one of the world's leading authorities in his
7 field.

8 We've also had what's called a hackathon, and this is when
9 programmers get together to build something very quickly. In fact, they
10 use this room and spend a couple of days here for very long periods of
11 time building something. This is a standard to handle biology data. This
12 was hosted by VBI and led by one of our scientists, and Sun sponsored it,
13 and developers are interested in this field from all over the world, came
14 over here and participated in this. We're positioned with the leadership in
15 that area as well.

16 We released a new version of a piece of software that we
17 developed here to support people doing DNA sequencing. It's now being
18 used by a number of different players, including international players. We
19 just got an email the other day from folks from the University of Puerto
20 Rico who are using it. This is helping a number of different projects
21 generate data. We've had more presentations than I care to remember.
22 We're being invited by almost every federal agency that has come to talk
23 about this.

24 Some of the recent ones I remember have to do with a
25 body that does standards from the federal government. They've been
26 interested in our software architecture as the standard that could be used
27 broadly in life sciences. At the end of that presentation, a person asked
28 me, does the Navotech community know about this, and I said, we usually
29 don't talk to them, but they said they need to see this. I said, introduce us
30 to them, and we'll be happy to talk to them.

31 The standards that we've been building into the software
32 could be useful across a larger array of different communities. I just got
33 back last week, and we had some very interesting conversations with
34 Nestle, and we hope to develop this into some projects.

35 There's an interest in global epidemiology of diseases that
36 are affecting the Third World, and they're looking to us to develop a lot of
37 the data management, global data management for different kinds of
38 projects. Nestle has funded some of these projects. This is a complex
39 problem. If you make products like food or tobacco or wine or things like

1 that, then you're interested because you're trying to sell a particular taste.
2 What they have realized is that you don't understand how that works, so
3 they're starting to fund that type of thing.

4 We were talking to them, and I talked to the Director of
5 Research there, and they would like us to come back and give a specific
6 presentation in a couple of areas that they feel very weak in, and they
7 happen to be areas that they need help with, so we're looking forward to
8 that one.

9 You heard Dr. Call earlier explain that although our
10 primary mission is not educational or outreach. We understand that you
11 can't do science without being involved. It is an important way to give
12 back to the communities. We currently have 28 graduate students that are
13 being mentored by our faculty and 22 undergraduate students. We help
14 administer various biology programs. We have a new interdisciplinary
15 program here at Virginia Tech, and 70 applicants are already processed
16 for the fall semester, I expect this number to be in the hundreds very soon.
17 That means we can pick the very best. We currently have 19 students in
18 this program. From the 70, 14 of the 19 are at VBI. Through our grants
19 and contracts, we're providing a half million dollars of graduate student
20 aid and most of it coming from the federal government.

21 We've recently worked together with the College of
22 Veterinary Medicine and others on campus to put together at the request
23 of the Governor's Initiative Program, which we call Host-Pathogen-
24 Environment Interactions. These happen to be human hosts, and we call
25 that Host-Pathogen-Environment Interactions. The idea is that these
26 happen to be human hosts that can be viruses, bacteria, things that are bad,
27 and then you have environmental factors.

28 In some cases, for those of you that have come through
29 agriculture, you know that depending on what diseases you've got out in
30 the field and what the weather is like, you do nothing because the weather
31 is going to take care of it. In cases like malaria, you also have an insect
32 vector. So by bringing all this together, and you can imagine all the
33 disciplines that would be involved.

34 At the center of this is something that we're calling
35 pathosystems biology, a marketing term, if you'd like, for the study of
36 infectious diseases in an integrated way in bringing all of the disciplines
37 to the table. So we're hopeful that the governor and the review team that
38 was put together will look favorably upon this. We're hopeful that this
39 will provide additional opportunities to grow this program.

1 This is just a quick excerpt from the review and I think the
2 Review Panel composed of three or four members of the National
3 Academy of Sciences. This is just a quote, “excellent program, excellent
4 potential for future collaborative work with virtually all life and medical
5 science research programs, excellent potential for direct and indirect
6 statewide economic impact, probably the greatest such potential of all the
7 programs presented to us and certainly the program with expectations of
8 the most rapid return on the investment dollar.”

9 These are members of the National Academy of Sciences.
10 I was asked if we thought we could be number one in the world. I don’t
11 know if I said that necessarily, but I said certainly that’s our goal.

12 These are some major proposals that have been submitted
13 since the cutoff date for our report to you, and some of those aren’t in this
14 report because we always report on the quarter behind us. To give you an
15 idea of how things are wrapping up, we’ve got some major proposals, and
16 our proposal size and length is going up. You can spend a lot of resources
17 going after \$5,000 grants, or you can spend about the same resources
18 going after very large grants that are for very long periods of time.

19 Our position now is better, and we’ve been focusing more
20 on going after larger grants for longer periods of time. This is NIH, this is
21 DOD, this is the Department of Homeland Security. We have been asked
22 by Homeland Security to present white papers, and this is a very, very
23 unique opportunity for us. If we can get our foot in the door early when
24 budgets are still relatively flexible and smaller in terms of research
25 funding, if we get our foot in the door early, we will grow with their
26 budgets.

27 Then we have more NIHS, and this one is called NSF.
28 We’ve been directed by them to work with the University of Alabama in
29 Birmingham. Some of these we’re currently working on, and I want to
30 briefly draw your attention to the size of the programs here.

31 This is the one that they spent three hours beating me up
32 on. Why are they beating me up, because we’re running out of people to
33 essentially write these grants and do the work. That is our most crucial
34 future situation. We have to be able to have our full operational budget
35 for hiring more people so we can keep going after these funding
36 opportunities. The staff here can only do so much. We have 15 faculty
37 members, and look at the sizes of these. We need to think seriously about
38 how to do that. Otherwise, the next time they beat me up, I’ll just have to
39 tell them that I can’t do it and that there’s nobody there to do the work.

1 With that, I can say we're very excited.

2 I want to pause here and ask if there's any other questions
3 or comments, and if not, we'll move on to the construction and core
4 facilities update.

5 MR. CLISHAM: When you speak about this problem,
6 what is the major one?

7 DR. SOBRAL: It's personnel, the way these grants work
8 is that when I put in the grants as the principal investigator, I'm
9 responsible for the science that's happening. So I'm required to put, or it
10 says in the grant the principal investigator must allocate at least, and it's a
11 percentage, and there's only so much of that, I'm personally responsible
12 for the science, as I said, in the grant, so I'm required to put, it's actually
13 25 percent of the time to this program, and we only have so many 25
14 percents. Otherwise, we might not have any real responsibility, which, of
15 course, if I win that, then the next one comes, then I'm done because I
16 can't write any more grants. These grants are usually for five years. For
17 the next five years, Bruno is not writing any more grants.

18 We're basically in the situation that almost every one of
19 the faculty members right now, except for the most junior ones that are
20 just arriving. I'd actually been called back from Washington after that
21 three-hours. This is perfect for us, and can we find enough people to go
22 after this. It took us a week of conference calls and thinking and working
23 real hard because we're just implementing that other grant as well.

24 The real problem is we have 15 faculty members, and the
25 vast majority of them are completely filled for this. If another \$25 million
26 opportunity comes in January, we will not be able to write the grant. We
27 don't have anyone to do the work that can legally put themselves up on
28 the grant.

29 MR. LUTZ: Bruno, where is the scientific program on this
30 graph?

31 DR. SOBRAL: We are on year two, end of year three.
32 We're down between nine and 12, depending on how you look at it.

33 MR. LUTZ: The primary reason for that is lack of
34 funding?

35 DR. SOBRAL: Yes, operational monies or budgets. Lack
36 of increase. The university has done everything it could in the amount of
37 time that's been available. As you all know, the plan that would have
38 been taken over.

39 MR. RUST: You've now got three years under your belt.

1 Are you now able to call other universities and other groups to get more
2 help, and are they calling you and offering to come in and help on these
3 kinds of things? Granted that we're in tough economic times, but with
4 those kinds of potential collaborative efforts, will we be able to get over
5 this hurdle?

6 DR. SOBRAL: The answer to people calling, yes, every
7 time more. The problem is what we can do and collaborate with lots of
8 people, but as you know, part of the money that ends up here is the part
9 that we do. If we have no one here that can do any part, we get none of
10 the money. There is no way around this problem that I'm aware of except
11 for increasing the operational budget.

12 DELEGATE JOHNSON: This is like Economics 101, you
13 need personnel to get the 25 million?

14 DR. SOBRAL: I need money to pay salaries. That's what
15 the money is used for, to pay the salaries. The salary money does not
16 come out of the grant. Twenty-five percent of our effort goes into the
17 grant, you can draw it down. If you're going to hire someone at the level
18 that's required to compete for these things, they're going to want to know
19 that they have the operational budget to support the salary. I can't go to
20 them and say I've got this five-year grant to pay your salary out of this
21 grant because they will not come. They have tenure and they have
22 money, so to speak, where they are.

23 We cannot, the institute here, if you look at our six-and-a-
24 half-million-dollar budget, that supports our people here, and we have
25 almost 200 people. All those other people are essentially being funded off
26 the grant, but I cannot hire any faculty people that would compete for
27 these unless I have hard money to budget because they simply will not
28 come.

29 DR. SEBRING: Bruno, what kind of return do you get for
30 this?

31 DR. SOBRAL: There's going to be more slides about that
32 at the end and depends on how you want to count things. VBI has been
33 consistently doing anywhere between two and four times what has been
34 put into it as an operational budget. You have to remember we're still
35 infants and we're crawling. As you know, you still have to earn your
36 stripes and people have to get to know you, and at this stage, nobody has
37 heard of VBI.

38 When we were beginning to talk to this group in the RCE,
39 they said what's Virginia Tech doing here, they don't have a medical

1 school, what are they doing here? For a while, it was pretty much, what
2 are you doing here? Eventually, they took us seriously and so much so in
3 the kickoff meeting for the RCE, each one of the medical BIs that are
4 involved in this project got five minutes to present. I didn't do the
5 agenda, and the University of Maryland BI gave us one hour and a half to
6 present. So when you talk about turnaround in the space of November,
7 we were knocking at the door in November in less than a year's space.
8 Now, they see us as one of their greatest assets.

9 MR. LUTZ: Last time when you look at the success rate,
10 we were in the 45 to 50 percent range. We were successful in the 45 to 50
11 percent of the proposals that we submitted, which I recall is three or four
12 times the national average. Many of the other proposals had a success
13 rate of 15 percent. How have we done in that area in the last three to six
14 months?

15 DR. SOBRAL: In the upcoming cycle, we're at about the
16 same rate.

17 MR. LUTZ: Forty-five to 50 percent?

18 DR. SOBRAL: On the money side as well as the number
19 of proposals, so we continue to do extremely well in that area.

20 MR. CLISHAM: If this was a business, we're at the point
21 of demonstrating that you've got a product and the demand exceeds
22 supply and you need capital investment. Let's go to the investment
23 bankers and venture capital people and tell them here's what we've got.
24 Here's our success rate, and we've got four times the revenue. But all this
25 has to tie in that, and you don't really have to say, but you've got the
26 Tobacco Commission, and thank you all for that investment. This is an
27 incredible investment.

28 I think we've come out of this recession and things are
29 turning around. With a public, private partnership with people like GM
30 and IBM and so forth, isn't it time that we go and just say we need 200
31 million or so and put this thing together, I'm sure you've thought about
32 that.

33 DR. SOBRAL: Not in that level of detail, but I'd be
34 willing to walk into a high level conversation with one of the
35 organizations you mentioned with our story, but I would welcome any
36 kind of concept that people might have. As you know, corporations or
37 that kind of money usually is not something that you get every day. If we
38 had a large endowment that would bankroll the operation and one way
39 would be to figure out how to put that together. These things aren't easy

1 and fund raising isn't easy either.

2 Most of the interaction we've had with companies sponsor
3 research, which is really like a grant, and doesn't actually solve the
4 problems that we have, but if you or anyone else has an idea on how to
5 convince a private interest to give us that level of resources, I'd be more
6 than happy to work with you. It's important to remember we are a
7 research institute and we are a public university. For example, the
8 National Center for Biomedical Computing, the NIH requires that
9 whatever you build there, these resources be available.

10 MR. CLISHAM: Do you have any public, private joint
11 ventures?

12 DR. SOBRAL: We've gotten our first gift here at Virginia
13 Tech. We have a group here at Virginia Tech that's gotten our first gift
14 from Dr. Colter.

15 MR. FRAMME: Why would a private entity contribute to
16 the degree that Gary suggests without getting that value back to them?

17 DR. SOBRAL: That's the reason I'm not sitting inside one
18 of those companies right now. It's a tough proposition.

19 MR. FRAMME: If they put money in and the primary
20 purpose of which was to hire faculty, which could then go out and support
21 a grant proposal that NIH would give. NIH would not grant that proposal
22 if the results were to go back to a private entity.

23 DR. SOBRAL: That's correct.

24 MR. FRAMME: I don't see how that can work?

25 DR. SOBRAL: I don't have an answer for Gary's idea but
26 what I'd do, I'm willing to talk to anyone that thinks that they might have
27 a good way. I can tell you that one thing we did back in San Diego when
28 I was working there, we were a nonprofit 501C3, and we worked out a
29 deal with the benefactor companies to have first rights of refusal on
30 intellectual property, and for that, they put a lot of money into that
31 institute. Other places like Scripts saw these kind of things being done
32 before. It's basically giving you a hamburger today or you can't actually
33 own it or you get in trouble with the NIH. There are business models that
34 will allow that.

35 MR. CLISHAM: These creative arrangements and getting
36 intellectual property --

37 DR. SOBRAL: As you know, if we get into a intellectual
38 property, there are business models that have been successful in doing
39 these kinds of things and getting the first right of refusal, and that does

1 not, if they don't, they actually like that because it has a higher likelihood
2 of being commercialized.

3 The other model I'm very familiar with is a model that's
4 been used to essentially charge companies access to their database and
5 they took 15 years in developing the databases before they went down that
6 route. You need to get all the people in these companies hooked on your
7 data system and then say I'm going to pull the plug, and each of those
8 companies would be paying \$100,000 a year.

9 Interestingly enough what just happened is that NIH came
10 and said, we'll give you double of what the companies did if you pay for
11 everyone including the companies. Said great, we'll do that, but we're
12 not going to complete the old contract in case you ever change your mind.
13 They actually doubled what they were getting from the companies by
14 getting NIH's approval. I would very much welcome any ideas that any
15 of you have about how to do or how to support our operational budget,
16 and we'll need to do that.

17 MR. LUTZ: Bruno, would you be able today to show this
18 committee, you and your support personnel, took the 12 million and
19 leverage that money to bring you where you are today? You shared that
20 with me during one of our meetings.

21 DR. SOBRAL: We were going to do that, and we have
22 some very nice slides, and just bear with me for another minute. We
23 really want to show you that.

24 MS. COBLE: I'm Lauren Coble, and I'm Associate
25 Director of Administration and Finance. Other than finance, facilities fall
26 under me. We're going to go on a tour tomorrow morning, which I think
27 is scheduled for 10:00 o'clock. On the left-hand side as you kind of look
28 at the middle there and all the way on the left, that is what we refer to as
29 the Bioinformatics I facility. That's a facility currently under
30 construction, and we'll be moving into that facility in early December,
31 and we're very excited about that.

32 We'll be moving about 80 people, VBI here, and then we'll
33 have new faculty that'll be joining us in January and bringing their
34 research teams to round out the full occupants for that building. We're
35 planning on maintaining a lease on this facility here while we're waiting
36 for a space for two facilities to be completed.

37 The construction on Bioinformatics Number II is currently
38 under way, and we anticipate by this time next year, we'll be moved into
39 Bioinformatics II as well. There's a lot of changes on the horizon for

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BVI facility-wise.

I've been in the new facility, and I don't think there's anything quite like it on campus today. I'm quite pleased with how it's turned out. All in all, we'll end up with over 130,000 square feet, total of 18 wet labs. We have a mix of disciplinary faculty members here, and we don't need the wet lab space. Biologists and biophysicists and plant personnel. Having that mix of faculty and the various facilities within the facilities themselves is really what makes VBI special and building the facilities to facilitate that interdisciplinary interaction with the faculty makes us special, I think. You'll see more about that tomorrow morning.

VBI has two core facilities, a core laboratory facility and a core computational facility. For those of you that haven't visited those, we have a tour scheduled at 4:00 o'clock this afternoon. Our core facility lab offers genomics, transcriptomics, proteomics, and metabolomics. We have state-of-the-art equipment, and some of which has been purchased with Tobacco Commission funds. As part of the core laboratory facilities, we also have the growth chambers, which are really exciting. You can take a look at those as well.

Originally, I believe we had approved funding for greenhouses for, and some of the early faculty who arrived at VBI said that we can do better with this money and leverage it and be on the cutting edge of this. That's really an exciting part of our core computational facilities.

Our core computational facilities, we have received support from IBM and Sun, and we have benefited by some of these shared resource grants, have provided some of this IBM equipment, and we have our Sun, 1,500, and, Bruno, you're going to have to help me with some of this because this is not my area of expertise, but we do offer high performance computing database and high speed connectivity and database administration. We have our own team of database administrators. We have found that's one of our hottest commodities, and just about every grant that goes out the door, we provide that kind of service.

One of our most recent happenings to our core computational facility was the acquisition of the TimeLogic system. Bruno, I'm going to ask you to help me with it.

DR. SOBRAL: It's basically a special set of hardware that does bioinformatics very quickly. It's very small and fits right into that big Sun server TimeLogic. TimeLogic is the number one organization in

1 the world that produces these. I'll take this opportunity to say that we
2 have the first commercial spinout, which is in collaboration between one
3 of our faculty members and a faculty member at the College of
4 Engineering and Building Systems that are similar, but we think much
5 improved over this. It has already received Japanese venture capital. It's
6 a small organization right now, but essentially on the cutting edge of some
7 very important technology.

8 For those of you that have been involved in the creation of
9 this organization, and it's one of our milestones and objectives is to spin
10 out opportunities for economic development, and we spun out our first in
11 a little less than three years.

12 MS. COBLE: As Bruno mentioned, we received a gift of
13 125,000, an equipment gift. We received a gift of 175,000, that was an
14 equipment gift. And we hosted a reception here for Bill May, and we've
15 been very pleased to have our first corporate gift of that size. As I said,
16 that was from Beckman Coulter.

17 This is a summary of our awards and proposals through
18 September 30th. If you'll look at that first column, it indicates we have
19 awarded 30.6 million as the total awards. Those are total awards to date
20 and extends to a period of 2010. We have 45 awards and 34 pending and
21 55 declined for a total of 134 proposals submitted for a total of 136,000,
22 that's a tremendous amount of activity as far as writing proposals and
23 getting them out the door.

24 DELEGATE KILGORE: How much time does it take to
25 write a proposal or a grant proposal?

26 DR. SOBRAL: Depending on the grant, we would like to
27 spend six months, but sometimes they don't give you six months, but it
28 takes at least two months of concerted effort by a number of people. It's
29 got to be a team effort. It takes a minimum, just a straight minimum of
30 two months and more like four to six months. Another thing I wanted to
31 mention here, you'll notice that we've continued a funding ratio of about
32 one out of two, which is substantially larger than the national average.
33 There's a famous quote from a chemistry laureate that says the best of us
34 win 30 percent of our grants, so I think we're doing extraordinarily well.

35 The other thing I want to draw attention to here is now up
36 to 15 and 14 are on the ground. What you're actually seeing here is the
37 result of roughly 10 or 11 people of which more than half are assistant
38 professors. Most of our senior people, that's our strategy in building the
39 institute. We start off with more junior people and you don't have, it's

1 harder to move those big guns if no one's ever heard of you. The second
2 half of our build-out is to get 33 faculty and specifically targeted senior
3 people, then we'll have a much easier time getting them. The problem is
4 that the resources to get them aren't there.

5 This is a glimpse of the kind of things that you can
6 multiply by two or three if we can get to our full funded operational best.

7 DELEGATE JOHNSON: Other than salaries, what kind of
8 expenses do you budget for?

9 DR. SOBRAL: Taking the services of the core generating
10 data, if you'll recall from an earlier side, there were 90 percent. The use
11 of the supercomputer, the use of that laboratory generating data, a small
12 amount of things like travel, but the vast majority is generating data or
13 managing data and the salaries of the people to do that.

14 MR. LUTZ: Does that answer your question?

15 DR. SOBRAL: If you take that to the six months and
16 multiply that by five or six of our faculty members might be involved in
17 one of those particular grants and you say they're spending 30 to 40
18 percent of their time working on the grant, that's a lot of effort. We're
19 competing with the best in the business. People like Princeton, Cal. Tech,
20 you name it, those are the people that we're trying to get.

21 MR. RUST: Following up on Delegate Johnson's
22 question, and you're talking about more faculty, but when you get the
23 faculty person, do they not bring with them other people as part of their
24 team and does that not require additional equipment and space, so it's not
25 just salaries, is it?

26 DR. SOBRAL: That's an excellent question. To hire that
27 faculty member, we need hard money salary and we need what's called a
28 startup package. A startup package would include for our faculty for a
29 three-year period an investment for them to equip their lab, to hire
30 technicians, and doing something with the lab or a programmer. I think
31 our average startup package is around \$600,000 to \$700,000 over a three-
32 year period of time.

33 For each of those faculty lines, these were key ones
34 because they were the young assistant professors. If we go out and get a
35 senior member who was established somewhere and a big name, it's
36 easily a million dollars if not more. You've got the hard money salary
37 plus the startup or you can imagine between 600,000 and a million for
38 each one of those. We're down on some faculty.

39 DELEGATE BYRON: Because of the dynamics of this

1 and being a signature project for you, has there been any outreach to your
2 alumni in regard to their interest in this, this is fairly new in the last six
3 years, but I would think there's certainly a lot of folks that are interested
4 in what you're doing.

5 DR. SOBRAL: There has been some, and we've had some
6 alumni have helped, and I think a lot more can be done.

7 DELEGATE BYRON: You must have some dynamic
8 graduates out there in the business world that have some connections.

9 DR. STEGER: In the last year, 26 percent of the budget,
10 every unit on campus is reaching out for private support, and it's a very
11 competitive environment for dollars in every sector, but I think in the last
12 few weeks, we've identified a couple of potential major donors that'll be
13 working with us, but it takes time to develop the credibility. VBI doesn't
14 have any alumni, so there's always emotional ties to fundraising. There's
15 interest in this and it takes a while to develop all of it. Some corporations
16 are more receptive than others. At the end of the day, there's no such
17 thing as corporate giving, the company gives and gets something back,
18 got to have that value equation or it doesn't work. They just don't give
19 you money without some kind of strings attached to it.

20 DELEGATE BYRON: What do you see as your time
21 frame to improve yourself as far as what you're doing?

22 DR. SOBRAL: We've certainly come out of the box
23 strong and besides our build-out, we have to deliver, and this goes back to
24 the problem. We really need to focus on the larger projects that we have
25 been awarded and make sure that we deliver the absolute best execution
26 possible. We can hire more people, otherwise we can hire more people
27 and there'll be no other grants. This is the balancing act and this is why
28 they were beating me up for three hours because what I kept telling them
29 is that we have been awarded this RCE. I'm in charge of that, and I've
30 got to put together this team and get this worked up.

31 I'm just saying that if we can build out the institute to a
32 final level, which is my first order of business, then I will say by the time
33 that's completed, we'd be in a strong position. My original plans were to
34 certainly by 2006 or 2007 should be squarely positioned, we're still frozen
35 on year two. The other part of that is though as time passes, the costs get
36 higher.

37 MR. LUTZ: Any other questions?

38 MS. COBLE: I'll just point out that our average award
39 grant is around \$600,000, and our average pending grant is right around

1 two million. We're turning the corner and playing in a much bigger
2 market than we originally started out at.

3 This is my favorite slide because it identifies all of our
4 funding partners. We have a very broad base unlike a number of others.
5 Seventy-six percent of our funding comes from federal grants, and 15
6 percent comes from DOD-related, and 11 percent from USDA, and 11
7 percent from NIH. Six percent from academic partners, and we've
8 doubled that almost this year.

9 This next slide refers to the updated information. You can
10 see on the left-hand side the total expenditures we've made to date based
11 on investments made by the Tobacco Commission. The total is \$12.6
12 million. Together, the universities have provided VBI a little over seven
13 million, we have a total of 19 million.

14 On the output side, we have \$42 million has gone back into
15 the State of Virginia. Thirty million of that is VBI awards and contracts,
16 and that has occurred at other institutions within the Commonwealth and
17 other private corporations within the Commonwealth.

18 This slide identifies the total of 45.9 million. At VBI, we
19 have 30 million total awards, and the Virginia Tech departments that
20 we've partnered with, we have almost \$6 million awarded. Those are
21 awards they've won based on their partnership with VBI.

22 Other universities like Ohio State and a whole host of
23 others come up to about 9.4 million. That includes our initiative funding
24 from universities when reported grants and contracts.

25 Do we have a chart about the Johns Hopkins initiative?
26 The university has matched Johns Hopkins with an understanding that
27 finishing up the second year and one million dollars is provided by
28 Virginia Tech to VBI and one million dollars is provided by Johns
29 Hopkins through a Johns Hopkins counterpart to VBI. They're spending
30 their million dollars there, and we're spending our million dollars here.
31 We're finishing up year two of that.

32 It's a five-year program for a total of \$5 million. This set
33 of slides breaks out that \$5-million investment and breaks out the award
34 that we won from that investment.

35 VBI alone and Johns Hopkins University in collaboration
36 has about 28 million worth of awarded grants totaling 43. We concede by
37 breakout that Johns Hopkins plays an important part. Our diversity hasn't
38 changed much, and all of the Johns Hopkins funding has gone to support
39 NIH grants. That's dropped a little bit here because some changes on the

1 federal side. When we pull the Johns Hopkins funding out, a total of 18.5,
2 and Virginia Tech has provided 5.9 million. We still have on the output
3 side 38.4, and that's still a pretty good return.

4 This is another slide without Johns Hopkins. This slide is
5 solely investments to the university provided they support the Johns
6 Hopkins collaboration.

7 DR. SOBRAL: This is about the end of the second year.
8 The collaboration is without the School of Public Health, which is the
9 number one school of public health. When you're setting up new
10 collaboration, it takes time for everyone to get on with each other and to
11 figure out what they're doing. There's only been two awarded, and the
12 majority are pending. Four have been declined, but that's a substantial
13 amount of return for the situation when you have a situation where it's
14 essentially setting up relationships as well and gather that trust.

15 You can also see that the amounts pending, and that's
16 almost \$40 million. All of this is NIH, and I think that was one of the
17 major adjustments and objectives by investing this money in this
18 collaboration to help the portfolio grow. Every last penny invested there,
19 this return is coming out of NIH.

20 MS. COBLE: This is the next slide. Here is the next slide.
21 This is a total award of 2.68 for VBI, and 3.6 overall.

22 The difference between the 3.6 and 2.6 is essentially a
23 million dollar award.

24 DELEGATE JOHNSON: You say the amounts of the
25 grants have gone up?

26 MS. COBLE: Yes.

27 DELEGATE JOHNSON: Does that mean the cost has
28 gone up or the quality of the grant better than before? Are we getting
29 more money now or about the same?

30 MS. COBLE: It takes, as Bruno said before, it takes the
31 same amount of people to write a hundred thousand dollar grant as it does
32 a million. Right now, the average grant pending is over \$2 million, and
33 the average amount awarded is about 600,000. Our funding ratio of about
34 45 percent depending on which slide you look at, between 45 and 47
35 percent.

36 DR. SOBRAL: Just to make sure your question is
37 answered, we're competing for larger grants that run over a longer
38 duration of time, and so that's larger, and the total amount is larger. The
39 problem is that once you get the larger ones, you're hooked. Then you're

1 competing for bigger things. As I mentioned that MCV that I was
2 working on, they're going to be awarding, every one of the top
3 universities is competing for that, so the competition is very widespread
4 and I would think it's a real problem getting that 30 percent, although
5 we're very close, and we can't really write any more. So we're closed for
6 business, and we can't write any more.

7 MR. FRAMME: Going back to what Gary said and the
8 sources of money to hire additional people. If we assume for purposes of
9 argument, in the future, there's this sort of private public thing, and it's
10 not going to bring us money in the near future, then in order to hire and
11 unless we do, we cannot grow beyond what we're seeing on these and we
12 can't bring more money into Virginia and we can't hire more Virginians
13 without more money, hire faculty. If we can't get that money in the short
14 run from public/private initiatives, what are the other possible sources for
15 that money?

16 DR. SOBRAL: There's other people here that might want
17 to talk about that question. But it has to be reoccurring money and you've
18 got to get it every year.

19 MR. FRAMME: If it doesn't come from the state budget,
20 you're not going to be able to hire faculty and you're not going to get
21 money from the legislature. You just can't hire these faculty, you just
22 can't leverage that money.

23 DR. SOBRAL: It's just a spiral and it's not going to hold
24 ground. We could be a world class institution, but we've got to get this
25 funding.

26 MR. FRAMME: We talked about this three years ago, and
27 it was all maybe we can do this and probably we can do it, and the
28 Tobacco Commission took a real chance on this, and it's paid off and it's
29 proven. If we get that additional money or get jobs in Southwest Virginia
30 and other parts of the state.

31 DR. SOBRAL: One quick thing, and one of the things that
32 was said was what state government would not want to put money into
33 this?

34 MR. CLISHAM: How much money do you need?

35 DR. SOBRAL: Right now, 6.6, close to 13, 700,000 or
36 800,000 startup for each one of those, 20 million bucks plus another
37 double for the operational budget.

38 SECRETARY SCHEWEL: It has to go to six or 12?

39 DR. SOBRAL: It took two years to hire 15, I don't think

1 we can hire more than eight of these people a year. If you find these
2 people and convince them to come here, you could go from, and we can
3 take it in steps, but remember the longer we space all this out, the more
4 the competition is running too, whatever figure we use.

5 DELEGATE BYRON: I realize what you're trying to do,
6 but from the equity side, I realize what you're trying to do. You can't
7 keep writing grants if you don't have people, but what would you
8 envision that you would like to see balanced on the chart and at what
9 point do you have enough? Do you ever get to a point where you say we
10 have enough people and we can accomplish our goals with what we've
11 got?

12 DR. SOBRAL: Thirty-three, we're about halfway there.
13 Thirty-three faculty is our goal.

14 MS. COBLE: Our annual budget of 25, a million dollars,
15 and we're not there yet. Right now, the budget is about ten million, that's
16 annually. We still haven't met that, but it's an annual budget of 24 to 25
17 million with the university.

18 DELEGATE BYRON: What is the breakdown as far as
19 who is funding?

20 DR. SOBRAL: We received 12.8, and that's supported
21 fully up and running 33 faculty positions, a total of 125 hard funding
22 positions staff and faculty. Out of that, if we realize that full funding, we
23 would then have an annual expenditure, and this is over several years. If
24 this is fully funded and up and running, the annual expenditure from those
25 awards of 25 million a year. If you have \$25 million of expenditures a
26 year, then you have to award that, that probably would be \$75 to \$80
27 million on the book because those have been spent out. What we have
28 now is state funding of six and a half. When that came about or when the
29 budget was prepared, there's been difficulty with the state general funding
30 and the money from the Commonwealth.

31 The Commission was asked to help fund the initial startup
32 of VBI, and we had over \$12 million funding from the Tobacco
33 Commission. That's what formed the basis of moving forward. If you
34 look at the 12 million, you arrive at about six-and-a-half million operating
35 support, and that's half of what we asked for.

36 The Tobacco Commission money hit it for that two-year
37 period of time, we're still spending some of the money. The university
38 made a decision that there were no state dollars possible at that time to
39 fund the six-and-a-half-million dollars. While we were cutting \$72

1 million out of the university's budget, we reallocated from the total
2 university enough money to underwrite half of that operating fund, six-
3 and-a-half million.

4 Bruno has a guaranteed base of six-and-a-half-million
5 dollars in the budget. The budget has been submitted to the
6 Commonwealth for consideration, and we've asked for additional funding
7 to be made available in the next two years to move us toward that 12.8
8 and all together, that'll bring us about 14 million. We realize with that
9 budget we expect at some point that we would expect to have annual
10 expenditures off of that of 12 to 14 million or roughly \$25 million.

11 SECRETARY SCHEWEL: So the 12 or 14 or whatever
12 the number is, that would be used to pay operating costs?

13 MR. SEBRING: Operating costs.

14 SECRETARY SCHEWEL: Now, the grants you paid for
15 some of the same things. I'm having a little trouble because the example
16 that Bruno gave, I'm still not sure of the relationship of the grant and the
17 payment of \$12 million.

18 DR. SOBRAL: Based on the six-and-a-half-million dollar
19 operational budget, that would fund about 40-odd positions of the hard
20 money. The institute has almost 200 people, and that's where that grant
21 money is going. As was mentioned, if we get to our originally proposed
22 budget, that would fund about 120 or so many people or something like
23 that. So we're really talking about 400 people. The grants would be
24 paying for the other people. I had a team of 20 software people, and
25 they're paid off the grant. If I cannot write another grant, and that grant
26 goes away, these people don't have a salary. They don't have a job either.

27 MR. RIDENOUR: Fifteen faculty positions is what he's
28 referring to, and we guarantee those. Then the plan at that level would be
29 about another or a total would be about another 30 positions, staff
30 positions. So a total of roughly 48 positions. Bruno said we had 200
31 people, and that 200, most of the remaining above 40 are being paid for
32 with the grant. As people come in and the salaries, that impacts us, so,
33 but you have to remember that activity is generating economic activity for
34 the Commonwealth and the faculty members we have are generating that
35 kind of activity.

36 When Bruno gets a grant, we take that salary savings, and
37 we invest it to grow research. We're actually or we're constantly working
38 those dollars is what I'm trying to say.

39 MR. RUST: For every state or university funded-position

1 will generate another four positions. It's about a four-to-one ratio and
2 paid for by external money.

3 DR. SOBRAL: That's roughly, we've had our first
4 company, and as we grow older, more things happen. Actually if you
5 start counting those kinds of things in the future, the leverage is much
6 more than that.

7 MR. FRAMME: When you look at the state money, it's
8 actually about a one, a three-to-one, or a five-to-one ratio. When you look
9 at the educational system at the university, we are developing and
10 growing an internationally recognized center that dramatically increases
11 the prestige of Virginia Tech internationally as well as the
12 Commonwealth, so when you endow this program, we become an MIT
13 level, at least if we develop the potential that we've talked about. It's
14 more than just economics. This is just another level.

15 SECRETARY SCHEWEL: In terms of the top 30 or the
16 top level, is there anything else or are there other things going on that
17 have this sort of steep slope growth or explosive growth and research
18 activity or an opportunity to get in the top and --

19 DR. STEGER: Transportation research is a growth. We
20 think the group that's guiding that technology has the potential, and it's
21 hard to predict at the end of every day where that will go. I wish there
22 were.

23 MS. COBLE: I did want to point out that we have
24 collaboration with the College of Engineering, and we have awarded
25 scholarships to four engineering faculty members who come and work
26 here at VBI one day a week for an academic year. This is something
27 where they submit proposals to us and the quality of their research is in
28 collaboration, and they have joined us for this year, and we anticipate this
29 will be a very successful relationship and will continue it for another year.
30 We've been very pleased to have this collaboration.

31 DR. SOBRAL: These are some of my favorites, and these
32 have been very successful with the leadership of NIH. The first one, one
33 of the things I least like to hear from anyone when I'm trying to plan
34 something is, well, do you really think we can do that or are we aiming
35 too high. As my dad said, if you don't aim high, you'll never get higher.

36 The second one is, and this is something that I learned. If
37 you've got to get everybody to agree, you'll never be able to do anything.
38 Sometimes you just have to push forward despite what people may be
39 complaining about, and that's also the next one. If you're going to think

1 about it, the competition has blown by you and you don't know it.

2 The last one is from an ex-president, and the reason I say
3 that, that every morning at 8:00 o'clock in the morning, our wonderful
4 plans are blown to smithereens, and the process of planning is
5 fundamentally important. We plan every day real time looking for the
6 future.

7 So I just want to particularly thank the Tobacco
8 Commission members that are here today for everything they've done to
9 allow us to have this opportunity. We feel like children in a candy store
10 and we're very happy to have everyone coming to work here on a daily
11 basis just looking forward to having an opportunity to make things
12 happen. Without what you have done, we certainly could not have
13 accomplished that.

14 MS. COBLE: We have one last item involving our
15 numbers, and we want to talk about that for a few minutes. And that's at
16 the very back of your packet.

17 MR. SHELTON: We'll very quickly, and I think we've
18 talked about a lot of these numbers in the last few minutes. We've taken a
19 look at the sources and uses of our funds in trying to continually monitor
20 and evaluate the overall activity through various ones in our academic
21 initiatives including all the good things you heard we're doing here at
22 VBI.

23 The first pages of these schedules should say at the top,
24 Years 2003 and 2004 as of October 31st. This is the annual budget and
25 what we've put in, in terms of base budget or recurring budget.

26 Then there's a one-time budget, and then it shows some
27 outcomes. You've heard Bruno and Mimmis mention the six-and-a-half-
28 million-dollar budget and you'll see we have listed there in that first
29 column the recurring budget that we have through investments and
30 through the university.

31 In the base and one-time column, we're reflecting the
32 overhead from activities that we do, the sponsored side, and all of those
33 overhead funds are put back into the program. One of the benefits we
34 have from being able to manage this program on a stand-alone basis is that
35 we're able to carry over monies at the end of the year and reinvest those
36 and manage them in a good efficient manner on a continual basis. Some
37 of those monies from the prior year are carried over into this year as we
38 make expenditures. That reflects \$10 million worth of total resources on
39 a combination of a base and one-time basis for the current year.

1 The column on the right-hand side then shows the actual
2 activity and where we received money and how much we spent. We
3 received \$9 million as of October 31st that were available to us and spent
4 2.7 million of those funds.

5 In the outcome section, this is a repeat of some of the
6 things you saw on the slides, so I won't go through them. As you move
7 down the outcome section, you saw the number on the slide of 93 million
8 for this part of the activity. Proposals made and awards, and then down
9 below that, you'll see the 27.9 million. The 27, as Mimmis mentioned,
10 would occur or part of it on an annual basis.

11 To date, as of October 31st, recorded in our accounting
12 system, there's an expectation of approximately ten-and-a-half-million-
13 dollars worth of expenditure activity this year. That activity or that
14 number will change throughout the year as awards are finalized and things
15 within those projects change. Then at this point in time, we would have
16 spent 3.3 million in activities during the first four months of this year.

17 The next section shows the fund balance for the Tobacco
18 Commission funds. I'll wait until the next schedule to talk to you about
19 that.

20 On the next page, you'll see the Johns Hopkins initiative
21 that was mentioned before. For the university, we've put in three million
22 of that investment that was mentioned, the five years' worth, one million a
23 year. At this point in time, we still have \$2.2 million of that to spend.
24 Lauren showed you the outcomes out of that, and those are in the middle
25 section of that where we're talking about the numbers, 2.7 million of
26 awards actually received and our expenditures against it. The Johns
27 Hopkins activity, as Lauren mentioned, is just really gearing up at this
28 point in time. The benefits of that one are still to come.

29 The Johns Hopkins information is shown in the middle part
30 of that. They operate on a calendar-year basis, so their numbers are two
31 million in that little middle section versus our three million, and that's
32 because we work on a fiscal-year basis.

33 Those two pages combine that first schedule I showed you,
34 plus this page, and work to the totals that you were shown per sections.
35 That part was faxed, as the chairman asked me to do. Do you have any
36 questions on those numbers?

37 Finally, and it's important, I think, to show with the
38 Tobacco Commission, we have a summary of that support that you have
39 provided to VBI. That's on a page that says Funding History for the

1 Tobacco Commission, and hopefully, that's the last page in your packet.
2 We did receive an initial funding commitment of \$3.2 million and 1.9
3 million for equipment, for a total of 5.1 million. We subsequently
4 received six-and-a-half-million dollars for the annual budget number that
5 we talked about for the second year. Then in '02 and '03, we were
6 awarded an additional one million of support.

7 The bottom part of that page shows you how we used those
8 funds to support our base activities. Those activities have occurred over
9 the last three years to the large part as we've been able to gear up our
10 operations and use the resources we had as those funds were needed to
11 fund the startup in the first couple of years of VBI's existence.

12 In the next to the last column on this page, you'll see a
13 number of \$139,000. That was the last of the initial allocation that existed
14 on June 30th, of '03, and was in our accounts from the award made by
15 you. We spent that money right after the end of the year. Then the last
16 one or that \$1 million was received. At this point in time, we were getting
17 reimbursed on a reimbursement basis rather than an advance on that. We
18 spent those monies in the first part of the year, and the Tobacco
19 Commission cut a check and sent it to us, and we received it a week or
20 two ago.

21 We have now received and expended all of the 12.6 million
22 of support. I would add my voice to say it's indispensable to us in making
23 this project go.

24 MR. LUTZ: Thank you very much for that presentation.
25 Are there any comments?

26 We're running a little late, and we have several other items
27 on our agenda. Is there anyone that would like to bring up any other
28 matters or any other points or observations?

29 DELEGATE KILGORE: I would just like to say on behalf
30 of the Tobacco Commission folks that when you first approached the
31 discussion of the \$12.6 million, we were really taking a gamble, but I just
32 want to tell you how much we appreciate your hard work in seeing that
33 this dream became fulfilled, and we appreciate that. It makes us certainly
34 feel good that you all have worked so hard using these dollars wisely, and
35 we all thank you very much.

36 MR. LUTZ: Thank you very much.

37 It's very clear we wouldn't be here at this institution
38 without funding from folks like the Tobacco Commission, and we
39 certainly appreciate it. There's so much more potential out here that I

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don't think we realize and certainly when it comes to these financial challenges, we're very optimistic, and I think we all realize what can be done in the future.

Do you have any comments?

DELEGATE KILGORE: Would anyone like to ask any other board members any questions? All right.

Or does anyone from the public have any comments? If not, counsel, do you have anything?

MR. FERGUSON: No.

NOTE: At this point, the transportation itinerary and schedule of events for November 21 and 22, 2003 are discussed; whereupon the meeting is adjourned.

CERTIFICATE OF THE COURT REPORTER

I, Medford W. Howard, Registered Professional Reporter and Notary Public for the State of Virginia at Large, do hereby certify that I was the Court Reporter who took down and transcribed the proceedings of the Virginia Bioinformatics Institute, Policy Advisory Board and Virginia Tobacco Indemnification and Community Revitalization Commission, Executive Committee, when held on Friday, November 21, 2003, at Virginia Polytechnic Institute and State University/Virginia Bioinformatics Institute, Blacksburg, Virginia.

I further certify that this is a true and accurate transcript to the best of my ability to hear and understand the proceedings.

Given under my hand this 22nd day of December, 2003.

Medford W. Howard
Registered Professional Reporter
Notary Public for the State of Virginia at Large

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