September 11, 2009

MEMORANDUM

TO: The Educational Policy Committee:

Glynn D. Key, Chair
The Hon. Alan A. Diamonstein
Susan Y. Dorsey
Helen E. Dragas
Rahul Gorawara
Randal J. Kirk
The Honorable Lewis F. Payne
Don R. Pippin
E. Darracott Vaughan, Jr., M.D.
John O. Wynne, Ex Officio
Edmund W. Kitch, Consulting Member

and

The Remaining Members of the Board:

Daniel R. Abramson
A. Macdonald Caputo
W. Heywood Fralin
Robert D. Hardie
Austin Ligon
Vincent J. Mastracco, Jr
Warren M. Thompson

FROM: Susan G. Harris

SUBJECT: Minutes of the Meeting of the Educational Policy Committee on September 11, 2009

The Educational Policy Committee of the Board of Visitors of the University of Virginia met, in Open Session, at 8:55 a.m. on Friday, September 11, 2009, in the Board Room at the Rotunda; Ms. Glynn D. Key, Chair, presided.

The Hon. Alan A. Diamonstein, Ms. Susan Y. Dorsey, Ms. Helen E. Dragas, Rahul Gorawara, Randal J. Kirk, The Honorable Lewis F. Payne, Don R. Pippin, E. Darracott Vaughan, Jr., M.D., and John O. Wynne were present.

Also present were Daniel R. Abramson, A. Macdonald Caputo, Austin Ligon, W. Heywood Fralin, Vincent J. Mastracco, Jr., Robert D. Hardie, and Warren M. Thompson.

The Consulting Member from the Faculty Senate, Edmund W. Kitch, was also present.

Present as well were John T. Casteen III, Leonard W. Sandridge, Ms. Susan G. Harris, Paul J. Forch, Arthur Garson, Jr., M.D., Ms. Susan A. Carkeek, Marcus L. Martin, M.D., James L. Hilton, Ms. Patricia M. Lampkin, David J. Prior, Ms. Yoke San L. Reynolds, Ms. Colette Sheehy, Thomas C. Skalak, Sharon L. Hostler, M.D., Ms. Gertrude Fraser, and Ms. Jeanne Flippo Bailes.

The Chair opened the meeting by mentioning the six goals for the Committee in 2009-2010. They are student growth strategy, technology transfer, diversity recruitment and retention programs, enhancing AccessUVA, community engagement, and Commission on the Future of the University.

The Chair stated the purpose of the meeting today is to review technology transfer. She introduced Thomas Skalak, Vice President for Research, who stated that the intended outcomes for a technology transfer program include revenue generation, faculty recruitment and retention, knowledge transfer, innovation and economic growth, and to enhance the core student experience at the University. He provided statistics on the Patent Foundation deals as compared to disclosures, and revenues as compared to research grants. Patent Foundation revenues have dropped at the same time that research grants for faculty have increased. The white paper "Financial Model of the Future", "Intellectual Property" is attached to these minutes and provides essential background for the discussion.

Mr. Skalak compared the old model for technology transfer with the new model that is now being implemented, which expands and integrates University and Patent Foundation capability. The University is on target to hire a new Executive Director of UVA Technology Transfer and Ventures by the end of October, 2009, and they have implemented many of the new integrated technology transfer functions already.

Mr. Skalak said the University has assembled an outstanding Technology Transfer and Ventures Advisory Group composed of leading venture capitalists, UVa faculty, experienced entrepreneurs, corporate leaders, and directors of technology transfer. The external members of the Advisory Group are named on page 5 of the attached white paper. The Advisory Group has analyzed various new models, taking into consideration the range of innovations at UVa, long term returns, desired cultural changes, and institutional deal structures for licensing intellectual property.

Current revenue for the Patent Foundation is about $4.6 million, and is projected to increase 20% per year under the new model, which Mr. Skalak believes is a conservative projection. $7.5 million is necessary to break even, on operating expenses of $3 million. Mr. Skalak projected revenues of at least $44 million ten years from now. He believes they will pass the break even point within the next year. The baseline expectation is that the revenue will meet or exceed 10% of the research grant funding for the institution.

Mr. Skalak reviewed with the Board some of the inventions of University faculty and students that have been successfully brought to the market, including showing the Board a video clip on an ear tube insertion device designed by undergraduate students.

In closing, Mr. Skalak said there are some early successes with the new model, which are explained fully on page 6 of the attached white paper.

The Board engaged in a discussion of the new model and its implications for technology transfer. Mr. Kirk offered to assist in developing the model and the Chair accepted his offer.

The Chair said technology transfer should be regularly on the agenda so that the Committee is continually assessing the structure of the model. The Rector said he would like to see regular metrics in the future.

Dr. Garson said the new model is just getting started. He thanked Mr. Skalak for his work.

The Chair thanked both Dr. Garson and Mr. Skalak for their efforts so far in restructuring technology transfer at the University.

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On motion, the meeting was adjourned at 9:50 a.m.

SGH:lah
These minutes have been posted to the University of Virginia's Board of Visitors website.
http://www.virginia.edu/bov/educationalminutes.html

ATTACHMENT

EDUCATIONAL POLICY COMMITTEE

"Financial Model of the Future"

"Intellectual Property"

"Financial Model of the Future"

Educational Policy Committee
"Intellectual Property"
(White Paper for BOV Meeting, 9/10-11/09)

One of the primary missions of a comprehensive university is "dissemination of knowledge." An important method of realizing this mission is through technology transfer – the process of transferring new ideas, inventions, processes, know-how, or services that are invented or created at the university to society, usually via commercialization in the private sector. This is the most common path for university inventions to produce the desired impact on society. We view this transfer process as "science and scholarship serving humanity." An important enabler of technology transfer is the protection of intellectual property (IP) through patenting, followed by licensing of that intellectual property to private companies. This process generates revenues to the university. It also is important for other desirable university outcomes, including recruitment and retention of faculty, economic growth in the region and the nation, and enhancing the core student experience at U.Va. The reason it helps to attract and retain faculty is that entrepreneurial faculty today seek out institutions that facilitate the transfer of their discoveries and inventions to commercialization, producing both personal financial gain for the inventors and the fulfillment of achieving service to society through their creations.

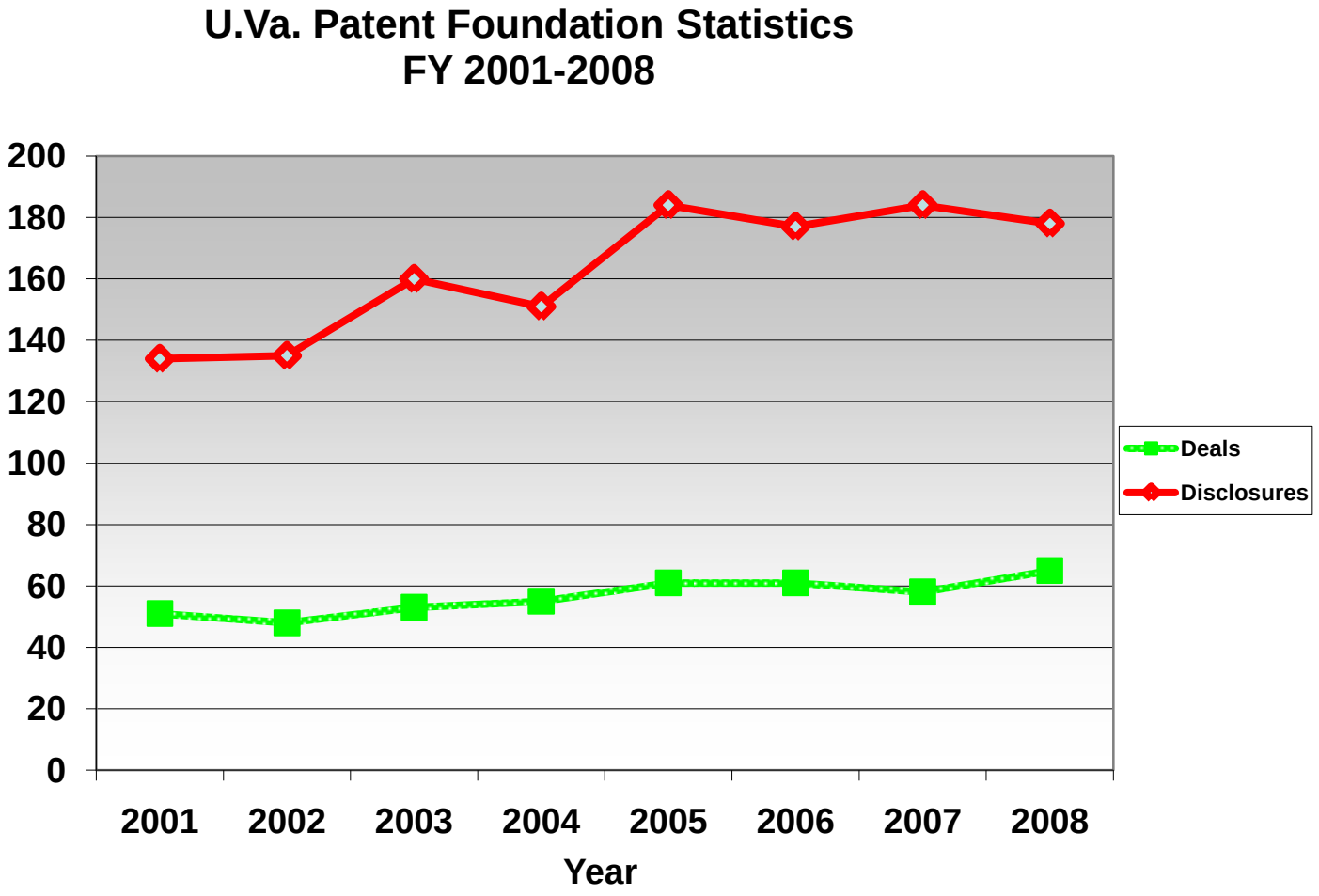
At U.Va., we have performed the function of technology transfer over the last 15 years through assignment of all U.Va.-invented IP to a U.Va. foundation called the U.Va. Patent Foundation (UVAPF). It is a 501c(3) foundation, providing the key attributes of agility in deal-making and staffing, flexibility in handling of revenues, and service as a corporate shield. In 2008, UVAPF had an Executive Director, 9 licensing staff, 2 business managers, 4 legal staff including 2 attorneys, and 1 communications staff. As shown

below, revenues were $4.45 M in 2008, or about 1.4% of total U.Va. research grants.

	Patents	Deals	Disclosures	PF Revenue (x $1M)	U.Va Research Awards (x $1M)	PF Revenue as % of Res. Grants
2001	22	51	134	$7.47	$224.7	3.32
2002	17	48	135	$3.82	$257.1	1.49
2003	17	53	160	$6.30	$277.3	2.27
2004	16	55	151	$5.30	$295.9	1.79
2005	8	61	184	$6.04	$312.8	1.93
2006	15	61	177	$4.07	$288.6	1.41
2007	18	58	184	$5.24	$333.0	1.57
2008	12	65	178	$4.45	$314.2	1.42

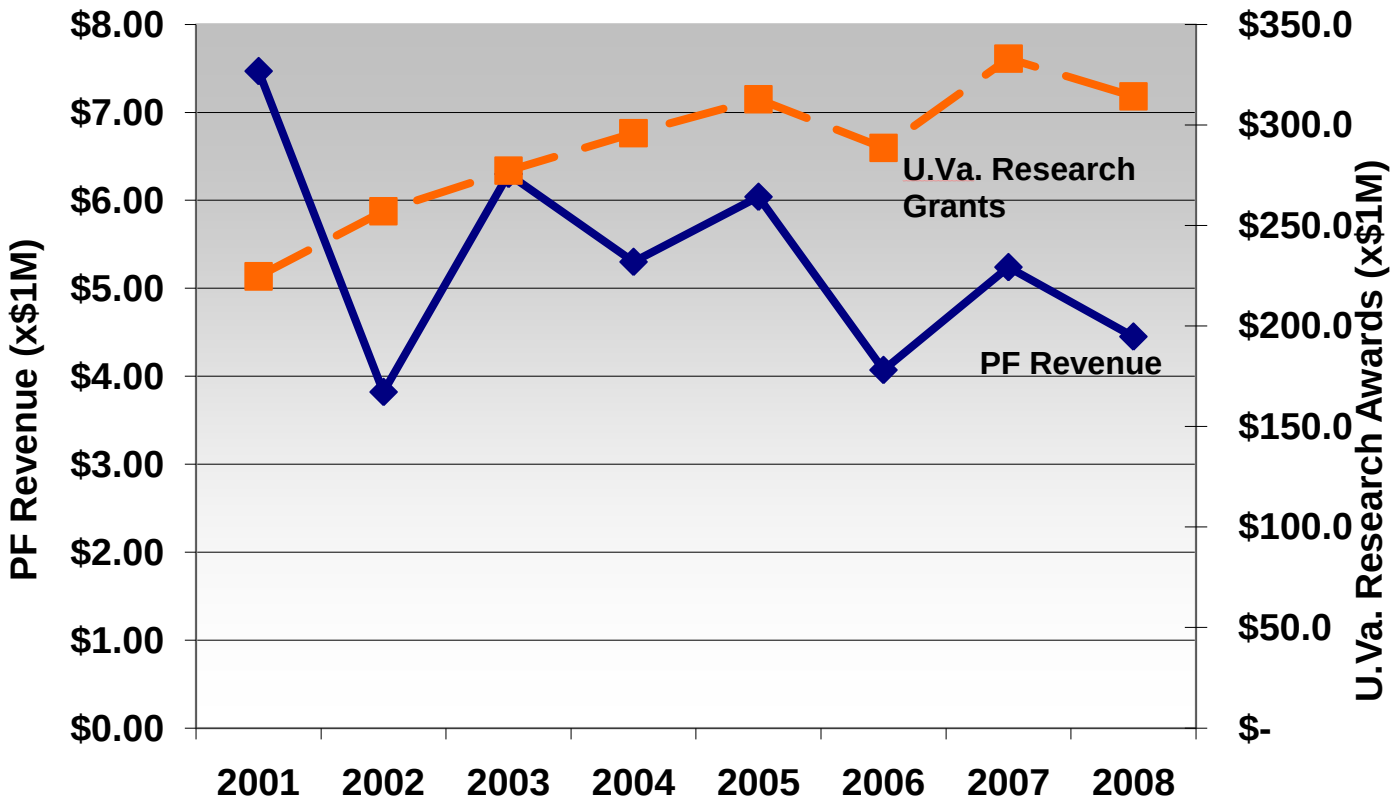
The national average performance is about 2% for this metric, while best-in-class programs (Stanford) typically average about 10%. This suggests that U.Va. has significant room to grow our technology transfer operations to generate increased revenue. Projecting a conservative increase in our total research grant level of 5% per year over 10 years, we project that U.Va. could realize revenues of $44 M by 2019, based on projected research grants of $440 M.

The graph on the following page indicates that U.Va. patent disclosures have steadily increased over a five-year period, while the conversion of these disclosures to licensing deals has been relatively static. A patent disclosure is a simple declaration of a new patentable idea or invention to the UVAPF by the inventors. It is usually followed by filing of a provisional U.S. patent and seeking of a licensing partner in the private sector. Best national practices would produce a higher rate of conversion of disclosures to deals (2-1), rather than the 3-1 ratio currently achieved at U.Va. This higher deal flow increases the odds of achieving enhanced revenues.



The graph on the following page indicates that U.Va. research grants have increased steadily over 5 years, while UVAPF revenues have been static, and currently at 1.5% of total research grants. This indicates we have significant room for enhancement of revenues, given the national best practice of achieving 10% of research grants in revenues.

Patent Foundation Revenue & U.Va. Research Awards
FY 2001-2008



A major independent review of the UVAPF was conducted in 2008. The reviewers recommended that major changes in structures, people, incentives, and long-term investment were needed to achieve the desired performance in technology transfer. Responding to this recommendation and our internal mission objectives, we have assembled a U.Va. Technology Transfer and Ventures Advisory Group, analyzed the tech transfer model, and designed and implemented a new structure with significant turnover of UVAPF staff. Significant successes have already been realized using the new structures and operational processes in 2009.

The Advisory Group is composed of corporate executives, leading venture capitalists, successful serial entrepreneurs, U.Va. faculty, and regional investors. They have recommended a structure that promotes integration of licensing with

strategic priorities, marketing and licensing deal terms for maximal deal flow, building relationships with funders, and execution of corporate master agreements with U.Va. when appropriate. The external members of the Advisory Group are:

- **Charles Hamner, Chairman of the Board, The Hamner Institutes, NC**
- **Katherine Ku, Director, Office of Technology Licensing, Stanford**
- **David Day, Director, Office of Technology Licensing, U of Florida**
- **Robert Zivin, Corporate Director, Johnson & Johnson, NJ**
- **William Hawkins, CEO, Medtronic, Inc., Minneapolis, MN**
- **Richard Ferrari, Managing Director, DeNovo Ventures, Palo Alto, CA**
- **Garheng Kong, Limited Partner, Intersouth Partners, NC**
- **A.G.W. Biddle III, Novak Biddle Venture Partners, Bethesda, MD**
- **Christopher Holden, General Partner, Court Square Ventures, Cville, VA**
- **Jonathan Sackier, Angel, investor, M.D., and entrepreneur, Cville, VA**
- **Gregg Fairbrothers, Director, Dartmouth Entrepreneurial Network, Tuck School of Business, Dartmouth Univ.**
- **Fred Hutchison, Hutchison Law Group, NC**
- **Gary Evans, CEO, ANGLE Technology Group, Charlottesville, VA**

A significant change in the operational system is that U.Va. will now provide the annual operating budget for the UVAPF (currently $3M) and revenues will flow to U.Va. via a newly defined distribution formula consistent with national

practices (10% off the top for tech transfer administration/ 30% to inventor/30% to inventor's lab, school, and department/30% to university) that provides enhanced incentives for inventors and their departments at all levels of royalty revenue. This new model provides financial stability for the UVAPF's operations and allows for stronger integration of U.Va. contract negotiations and licensing actions. About 35% of the UVAPF licensing staff have been replaced in 2009, and an interim Director is serving until we hire a new Director. U.Va. is making a second major investment by creating a new position within the university, Executive Director of U.Va. Tech Transfer and Ventures, who will report to the Vice President for Research. This individual's primary charge is to achieve an integration of our tech transfer operations, enhance deal flow and revenues, and build new relationships with outside partners that are conducive to maintaining a highly innovative and entrepreneurial environment in our U.Va. research operations. This position has been posted, and we plan to complete hiring by the end of October 2009. Following this hire, we will then recruit a new permanent Director of the UVAPF.

Some early successes achieved in 2009 using the new model approach, as executed by existing U.Va. personnel, include a $4M master agreement with a top-ten pharmaceutical company; closure of a $4.5 M Series A finance round by a start-up company that received U.Va. seed investment and assessment; U.Va. was named a "Top 10 Center for Biomedical Research" for the 2nd year in a row by the Hartwell Foundation; and U.Va. received high scores along with Stanford, Duke, and Michigan for a potential $10M endowment by the Coulter Foundation for our translational research and commercialization efforts. The latter endowment possibility, in 2010, provides a substantial 1-1 leveraging opportunity for development in the current U.Va. campaign, for matching gifts of $10M to provide substantial benefits to humanity.

The projected UVAPF revenues in 2009 are $6.25 M, a 35% increase over 2008. The total number of issued U.S. patents for 2009 is 25, the highest level U.Va. has ever achieved. Given that research funding is also at an all-time high

(except for one year in which a major senior researcher was hired), at $327 M, we expect future gains in technology transfer revenues.

Innovation is one pan-university initiative that is beginning to be addressed in multiple schools of U.Va. National and global market conditions also indicate that enhanced understanding and practices driving effective innovation are highly desirable. U.Va. can be a global leader in defining "How does one innovate?", linking theories of arts and creativity, human motivation, organizational networks, quantitative social science, basic core science, engineering practices, and commercialization pathways. Based on this understanding, U.Va. can be a leader in linking our array of superb basic discovery programs to societal needs, values, and markets. A test mechanism for this - "Design Gatherings" - will be initiated with Hearst Business Media as a partner in 2009-2010, using either Morven or Boar's Head Pointe as the venue. Following our successful first U.Va. Venture Summit that brought over $10B in active VC funds to grounds in 2009, we will hold the 2nd Annual U.Va. Venture Summit in March, 2010. We are supporting a U.Va.-wide business concept competition in 2009-10. We have been awarded a new National Science Foundation (NSF) grant to organize the NSF's national meeting on innovation in March, 2010.

In the next global era, economic and social well-being will be achieved via an evolving paradigm that causally links knowledge creation, innovation, entrepreneurship, human dignity, and societal freedom. Foremost among these, entrepreneurship is a critical driver that moves new concepts to commercialization. As noted by economist Paul Romer, "No amount of savings and investment, no policy of macroeconomic fine-tuning, no set of tax and spending initiatives can generate sustained economic growth unless it is accompanied by the countless large and small discoveries that are required to create more value from a fixed set of natural resources." The central thought here is that "countless" discoveries are required. Our new U.Va. tech transfer model adds the new dimension of harnessing these countless discoveries by linking the people that make them to external partners to accelerate innovation, wealth creation, and societal good.

The central elements of a strong innovation economy are educational systems, diverse viewpoints in the research process, and collaboration. With this combination, greater risks can be taken and greater leaps achieved. In a recent study, The Information Technology & Innovation Foundation (July, 2008) reported data showing that active government support of innovation and early-stage research is critical to today's economy, with twice as many of the 2004-2006 R&D 100 Awards for new product innovation going to ideas from publicly-funded research teams compared to privately funded teams. Remarkably, only five of the 2006 awards went to Fortune 500 company-derived products, compared to about forty in 1970. This shows the current importance of publicly-funded translational research at universities to today's innovation economy, in which large corporations have largely abandoned early-stage, risky innovation projects. The public sector is now highly innovative when measured in comparison to the private sector. We expect many U.Va. projects to produce new design-driven innovations for consideration, rather than only technologies determined by market pull. Further, the direct gain to local economies is usually about $4 for every $1 received from state sources at a public institution.