WISCONSIN LEGISLATIVE COUNCIL
PROPOSED REPORT TO THE LEGISLATURE

SPECIAL COMMITTEE ON NANOTECHNOLOGY

May 10, 2011

PRL 2011-10

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Special Committee on Nanotechnology

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May 10, 2011

CONTENTS

PART I

KEY PROVISIONS OF COMMITTEE RECOMMENDATIONS

The Special Committee on Nanotechnology recommends the following bill drafts to the Joint Legislative Council for introduction in the 2011-12 Session of the Legislature. These drafts are described in more detail in Part III of this report.

WLC: 0037/3, Relating to Establishing a Nanotechnology Information Hub and a Nanotechnology Council

- Directs the University of Wisconsin (UW) Board of Regents to establish a nanotechnology information hub in the UW-Extension (the "Extension") and maintain the hub for at least five years.

- Specifies that the general purposes of the hub are to promote the development of nanotechnology businesses and gather and disseminate information about environmental health and workplace safety related to nanotechnology.

- Sets forth numerous specific duties of the hub related to its general purposes.

- Establishes a nanotechnology council to set policies and priorities for the information hub and to develop and implement plans for the hub to sustain its own funding.

WLC: 0101/2, Relating to a Wisconsin Interagency Nanotechnology Council

- Creates the Wisconsin Interagency Nanotechnology Council, attached to the Department of Administration (DOA), consisting of representatives of the UW and eight state agencies.

- Directs the Council to meet periodically to discuss and report to one another on scientific research and emerging issues related to nanotechnology and to coordinate state activities related to nanotechnology.

- Directs the Council to establish a system to accept and review petitions submitted by members of the public alleging public health or environmental risks posed by nanoscale materials, and to make recommendations, including recommendations for legislation, based on its review of petitions.

PART II
COMMITTEE ACTIVITY

Assignment

The Joint Legislative Council established the Special Committee on Nanotechnology and appointed the chairperson by a May 7, 2010 mail ballot. The committee was directed to examine the human health and environmental concerns related to the manufacture, use, and disposal of nanomaterials and develop legislation to address these concerns. In particular, the Special Committee was directed to consider the establishment of methods to monitor nanomaterials by use of a nanotechnology registry system or the imposition of other disclosure requirements. The Special Committee was also assigned to develop strategies to facilitate the development of nanotechnology to create and retain jobs in Wisconsin, including ways in which government can help nanotechnology researchers, small firms, and start-ups address potential risks and meet regulatory requirements.

Membership of the Special Committee was appointed by June 30, 2010 and January 6, 2011 mail ballots. The final committee membership consisted of two Senators, two Representatives, and 10 public members. A list of committee members is included as ***Appendix 3*** to this report.

Summary of Meetings

The Special Committee held five meetings on the following dates:

September 16, 2010
September 30, 2010
October 26, 2010
December 7, 2010
March 2, 2011

At the September 16, 2010 meeting, committee staff presented background information on regulation of nanomaterials by the Environmental Protection Agency (EPA) and by the State of California and the City of Cambridge, Massachusetts.

The committee also heard testimony from the following invited speakers:

- Jim Alwood, Program Manager, Office of Pollution Prevention and Toxics' Chemical Control Division, U.S. EPA, Washington, D.C.
- Bradley Grams, B.Sc., B.A., Land and Chemicals Division, Chemicals Management Branch, Toxics Section, EPA, Region 5, Chicago.
- Paul A. Schulte, Ph.D., Manager, Nanotechnology Research Center, and Director, Education and Information Division, National Institute for Occupational Safety and Health, U.S. Centers for Disease Control and Prevention, Atlanta.
- Todd Kuiken, Research Associate, Project on Emerging Nanotechnologies, Woodrow Wilson International Center for Scholars, Washington, D.C.

The committee members discussed their expectations for the committee and identified additional information sources that they believe the committee should pursue.

At the September 30, 2010 meeting, the committee heard testimony from the following invited speakers:

- Tom Still, President, Wisconsin Technology Council.

- Charles Gibson, Professor, UW-Oshkosh and founder, Oshkosh Nanotechnology LLC.

- John Biondi, President and CEO, Xolve, Inc.

- Greg Krohm and Jennifer Wolf Horejsh, International Association of Industrial Accident Boards and Commissions (IAIABC).

- Al Shea, Deputy Secretary, Wisconsin Department of Natural Resources (DNR).

- Terry Moen, Project Manager, Wisconsin Onsite Safety & Health Consultation (WisCon), Wisconsin State Lab of Hygiene.

- Lynda Knobeloch, Senior Toxicologist, Division of Health, Wisconsin Department of Health Services (DHS).

- William Clare, Planning Section Supervisor, Bureau of Planning & Preparedness, Wisconsin Emergency Management, and Randi Wind Milsap, General Counsel, Wisconsin Department of Military Affairs.

The committee discussed issues that were raised by invited speakers that the committee wished to learn more about and possibly address through legislation, including the release of nanosilver into the environment, the need to provide various types of assistance to entrepreneurs involved in the nanotech sector, and methods to promote best practices.

At the October 26, 2010 meeting, committee staff presented, and the committee discussed, Memo No. 2, *Recommendations for Legislation*, which was a compilation of the recommendations that were made to the committee at its first two meetings. Discussion focused on the possible establishment of a clearinghouse for nanotechnology in Wisconsin. Members stressed the importance of notifying workers that they are working with nanomaterials, providing assistance to businesses, and addressing the potential health and environmental effects of nanomaterials.

The committee also heard testimony from the following invited speakers:

- Charles B. Hoslet, Managing Director, UW-Madison, Office of Corporate Relations.

- Brian Doudna, President, Wisconsin Economic Development Association (WEDA).

- Maliyakal John, Managing Director, WiSys Technology Foundation.

At the December 7, 2010 meeting, the committee concluded its discussion of items in Memo No. 2. Staff described WLC: 0037/1, relating to establishing a nanotechnology information hub and a nanotechnology council, which it had prepared based on the committee's previous discussion. The committee discussion focused on identifying obstacles and opportunities for businesses involved with nanoscale materials, how to balance concerns over potential health and environmental problems with promoting the nanotechnology industry, and determining which issues are appropriate for state versus federal regulation. The committee requested numerous changes to the draft based on this discussion.

Staff described Memo No. 3, *Options for Legislation--Interagency Collaboration on Nanotechnology*. The committee discussed options presented in the Memo, and asked staff to prepare a bill draft that would formalize an interagency workgroup, assign it to receive and investigate petitions on particular nanomaterials, and report its findings.

The committee also directed staff to prepare a letter to the Wisconsin Congressional Delegation, federal agency heads, and other federal officials requesting action on various issues related to nanotechnology.

At the March 2, 2011 meeting, committee staff presented two bill drafts and a draft letter addressed to the Wisconsin Congressional Delegation and various federal agencies. The committee reviewed the drafts and the letter and requested various modifications to them.

In its discussion of WLC: 0037/2, relating to establishing a nanotechnology information hub and a nanotechnology council, the committee requested several changes, including changes to the membership of the nanotechnology council. In its discussion of WLC: 0101/1, relating to a Wisconsin interagency nanotechnology council the committee requested changes to the membership of the interagency nanotechnology council, added a specific reference to occupational health, and a requirement that the interagency council post all determinations it makes to grant or deny petitions.

In its discussion of the draft letter, the committee requested that it urge the federal government to prioritize efforts to evaluate and address health and safety concerns related to nanomaterials, especially those found in wide use on consumer products, and to coordinate federal regulations with those of other countries.

PART III

RECOMMENDATIONS INTRODUCED BY THE JOINT LEGISLATIVE COUNCIL

This part of the report provides background information on, and a description of, the drafts as recommended by the Special Committee on Nanotechnology.

WLC: 0037/3, Relating to Establishing a Nanotechnology Information Hub and a Nanotechnology Council

Background

Nanotechnology is generally defined as the study and engineering of manipulating matter on an atomic and molecular scale. Materials reduced to the nanoscale often exhibit different properties than they exhibit on a macroscale. These unique properties provide great potential for applications in many industries such as medicine, electronics, and energy production, and in a wide array of consumer products. The committee heard testimony about the economic potential of nanotechnology and the potential for nanotechnology and nanomaterials to be used in processes and products that may be beneficial to the environment and human health.

The committee also heard testimony explaining that the novel properties of nanomaterials that make them attractive for commercialization--in particular, the high reactivity of relatively small amounts of materials--create unique risks to human health and the environment. Of particular concern is the risk to workers in the nanotech industry and research facilities who may be exposed to nanomaterials to a much greater degree than the general public.

The committee heard from numerous speakers about the need for a clearinghouse or ombudsman type of office in the state to coordinate the collection and dissemination of information and sharing of equipment and facilities related to nanotechnology. The committee heard from several state agencies that they have been sharing information with each other informally in an effort to keep abreast of the latest scientific and regulatory developments related to nanotechnology and the emerging information on best practices for protecting workers and emergency responders who come into contact with these materials.

The committee heard that scientific equipment needed to research and develop new applications for nanotechnology can be prohibitively expensive for some Wisconsin businesses. Several departments on UW campuses have partnered with the private sector to facilitate the use of UW facilities by businesses seeking to utilize nanotechnology in their existing products or manufacturing processes. These arrangements have been made on an ad hoc basis.

Description

In response to information received throughout the course of the study, the committee directed staff to create an entity to promote the development of nanotechnology in Wisconsin by serving as a central information source on the benefits, risks, and regulations related to nanotechnology, promoting collaboration between the public and private sectors, providing technical assistance to businesses and researchers, establishing a state educational program, and otherwise promoting the safe development of nanotechnology.

The draft directs the UW Board of Regents to maintain a nanotechnology information hub in the Extension, for at least five years, to promote the development of nanotechnology businesses in Wisconsin and to gather and disseminate information about environmental health and workplace safety related to nanotechnology. The Board of Regents must ensure that adequate staff is assigned to provide support to the nanotechnology information hub, including staff with technical expertise in nanoscale

materials and knowledge about the occupational and environmental human health effects of nanoscale materials.

Under the draft, the nanotechnology information hub must do all of the following:

1. Facilitate the sharing of specialized equipment and skills related to nanotechnology.

2. Arrange for periodic events to bring together people interested in nanotechnology.

3. Establish an interactive Internet platform for receiving and disseminating information on nanotechnology.

4. Monitor, compile, and disseminate emerging scientific research on nanoscale material uses, benefits, and risks.

5. Help businesses to identify and access resources to help them to comply with rules and regulations related to nanotechnology, implement best practices for handling nanoscale materials to protect worker safety, and otherwise minimize the risks associated with the use of nanoscale materials in products.

6. Inform businesses that are involved in nanotechnology or that use nanoscale materials in products about business development assistance programs.

7. Inform the public and businesses that are involved in nanotechnology about post-secondary education programs that prepare workers for careers related to nanotechnology.

8. Monitor and provide information on new and proposed state rules and federal regulations related to nanotechnology.

9. Inform interested parties about opportunities for federal, state, or other funding for nanotechnology research or other programs related to nanotechnology.

10. Inform the public about the benefits and risks of specific types of nanoscale materials and products containing nanoscale materials.

11. Inform emergency response personnel about the safe handling of nanoscale materials in emergency situations.

12. Collect information voluntarily provided by public and private sector entities in this state about the types and amounts of nanoscale materials being handled or manufactured and the locations of those activities.

13. Undertake other educational, public outreach, and grant activities related to nanotechnology.

14. Report to the appropriate standing committees of the Legislature on emerging nanotechnology health and safety information and, at the direction of the council, identify needed legislation relating to nanotechnology safety and development.

The draft creates a nanotechnology council to set policies and priorities for the nanotechnology information hub and to make grants for research and development related to nanotechnology. The nanotechnology council must meet at least twice each year and must develop and implement plans for the nanotechnology information hub to sustain its own funding.

The nanotechnology council consists of the following members (or their designees):

- The Director of the State Laboratory of Hygiene.

- The Secretary of the DNR.
- The Secretary of the Department of Agriculture, Trade and Consumer Protection.
- The Secretary of the DHS.
- The Secretary of DWD.
- The Secretary of the Department of Commerce.
- The Chief Executive Officer of the Wisconsin Economic Development Corporation.
- The Administrator of the Division of Emergency Management in the Department of Military Affairs.
- The President of the UW System.
- The Chancellor of the UW-Madison (only if the UW-Madison is not under the control of the Board of Regents of the UW System).
- The President of the Technical College System.
- The President of the Wisconsin Technology Council Board.

The council also has five public members, each of whom represents one of the following specific interests relevant to nanotechnology. These members are nominated by the Governor, selected from a list of names submitted by organizations representing the relevant interest. These members are confirmed by the Senate and serve staggered three-year terms:

- Environmental.
- Consumer protection.
- Public health.
- Economic development.
- Technology transfer.

WLC: 0101/2, Relating to a Wisconsin Interagency Nanotechnology Council

Background

The committee heard testimony from a number of speakers regarding the known and potential risks of nanotechnology and nanomaterials to human health and the environment. Of particular concern are risks to workers who may be exposed to nanomaterials at a higher level than the general public, and the effects of nanomaterials that are already in wide use in consumer products. With regard to consumer products, there is concern about the risk both to the direct users of the product and to the general public when nanomaterials in these products enter into wastewater and the environment in general upon disposal. The long-term effects of many of these materials on humans and the environment are unknown.

Federal regulations may not require special testing of nanomaterials prior to their use in consumer products, since the applicability of chemical regulations are generally based on the chemical

structure of materials, not on their size. Thus, nanosilver is subject to the same regulations as "regular" silver, although the properties of the two substances are substantially different. Further, federal regulations often do not apply to the use of substance unless a threshold amount of the substance is used, stored, or manufactured. Since nanomaterials are used in relatively small quantities as compared to traditional chemicals, their use is often not subject to regulation. Further, the equipment and materials needed to conduct studies on the health and environmental effects of nanomaterials are expensive and considerable expertise is required to work with and analyze the effects of these materials.

Although the committee did not reach a consensus in support of establishing new state regulations applicable to nanomaterials, there was agreement that the effects and safety of nanomaterials warrant further study and monitoring. The committee developed a petition process under which members of the public may petition the state to analyze the safety of nanomaterials by reviewing scientific literature and issuing various recommendations, for state or federal action, based on its analysis.

Description

The draft creates the Wisconsin interagency nanotechnology council, attached to the DOA, consisting of representatives of the UW and eight state agencies, as follows:

- The Secretary of DOA.
- The Secretary of the Department of Agriculture, Trade and Consumer Protection.
- The Secretary of the Department of Commerce.
- The Administrator of the Division of Emergency Management in the Department of Military Affairs.
- The Secretary of DHS.
- The Secretary of DNR.
- The Director of the State Laboratory of Hygiene.
- The Secretary of DWD.

The draft directs the council to meet periodically to share information on nanotechnology and to coordinate state activities related to nanotechnology.

The draft directs the council to establish a system to accept and review petitions submitted by the members of the public alleging public health or environmental quality risks posed by nanoscale materials, and to make recommendations based on its review of a petition.

A petition must allege that a particular nanoscale material or use of a nanoscale material that is present in this state, or reasonably expected to become present in this state, would pose a potential risk to the health of Wisconsin citizens, including workers who may be exposed to the material, or to environmental quality.

A petition must include all of the following:

1. Identification of objective, peer-reviewed scientific data or other reliable literature indicating the likelihood of the risk alleged in the petition.

2. Information on all of the following:

- Regulation of the nanoscale material or use by other jurisdictions, if any.

- Alternatives to the nanoscale material or use.

- Whether risks related to the nanoscale material or use may be avoided or mitigated by labelling, manufacturing or handling restrictions, disposal requirements, or other methods.

3. Any other information reasonably requested by the council to support the evaluation of the petition.

The council must perform an initial review of each petition to determine whether it is reasonably probable that the allegation of risk in the petition has merit. The council must inform the petitioner of its determination, in writing, within 60 days after the council receives a complete petition, including any additional information requested by the council.

If, upon initial review, the council determines that an allegation of risk in a petition has merit, it must analyze the allegations contained in the petition. In conducting this analysis, the council must assign tasks, as appropriate and necessary, to the agencies represented on the council for the evaluation of public health, occupational health, or environmental risk associated with a nanoscale material or use identified in the petition.

The council may direct an agency to utilize its existing authority and interagency processes to facilitate the evaluation of a petition. The council may direct an agency to conduct or arrange for testing of nanoscale materials.

The council must prepare a report setting forth the results of its analysis and distribute the report to the petitioner, the Governor, and to the appropriate standing committees of the Legislature and post it on an internet website as directed by the council. The report may include any of the following:

- Recommendations for the collection and reporting of information related to the import, manufacture, or use of the nanoscale material in the state.

- Recommendations for research or studies relating to the nanoscale material that the state should conduct, encourage, or monitor.

- Recommendations that existing regulatory authority should be exercised by one or more state agencies to address identified or potential risks related to the nanoscale material or use.

- Recommendations for federal regulations that should be developed or implemented or research that should be conducted or sponsored by the federal government.

- Recommendations for state legislation that should be developed or enacted to address identified or potential risks related to the nanoscale material or use.

PART IV

OTHER ACTION OF THE COMMITTEE

At its December 7, 2010 meeting, the Special Committee directed Senator Harsdorf, Chair of the Special Committee, and Senator Mark Miller, Vice-Chair of the Special Committee, to send a letter to the Wisconsin Congressional Delegation and the following federal agency heads and federal officials, requesting action on various issues related to nanotechnology:

- Environmental Protection Agency.
- National Nanotechnology Initiative.
- President's Office of Science and Technology Policy, Occupational Safety and Health Administration.
- Consumer Product Safety Commission.
- National Institute for Occupational Safety and Health.
- U.S. Chemical Safety and Hazard Investigation Board.
- Department of Agriculture, Food and Drug Administration.

The committee heard testimony from several speakers indicating that the development and commercialization of nanotechnology are happening faster than the ability of the research community and governmental agencies to evaluate risks and respond appropriately to protect the public. Some speakers urged the committee to recommend new state regulations to address these concerns, while others disagreed, arguing that regulations would put Wisconsin businesses at a competitive disadvantage. It was stated that since these materials and products are in use and in the stream of commerce throughout the country, the federal government should take the lead role in both conducting research to assess risk and in implementing regulations, as needed to effectively address those risks.

The letter which was drafted at the request of the committee, urges the federal government to continue, and in some cases expand, its efforts to evaluate risks to human health, including occupational health, and the environment that nanotechnology may pose, and to develop and implement regulations, as needed, to address those risks.

This letter is included as **Appendix 2** to this report.

The letter was approved by the committee by mail ballot on a vote of Ayes, 13 (Sens. Harsdorf and Miller; Reps. Berceau and Strachota; and Public Members Benedict, Cernohous, Cronin, Gruetzmacher, Hamers, Hansmann, Lisensky, Owen, and Peterson); Noes, 0; and Not Voting, 1 (Public Member Hamilton).

Appendix 1

Committee and Joint Legislative Council Votes

The following drafts were recommended by the Special Committee on Nanotechnology to the Joint Legislative Council for introduction in the 2011-12 Session of the Legislature.

Special Committee Vote

The Special Committee voted, by an April 25, 2011 mail ballot, to recommend the following two drafts to the Joint Legislative Council for introduction in the 2011-12 Session of the Legislature. The votes on the drafts were as follows:

- WLC: 0037/3, relating to establishing a nanotechnology information hub and a nanotechnology council, passed by a vote of Ayes, 12 (Sens. Harsdorf and Miller; Rep. Berceau; and Public Members Benedict, Cernohous, Cronin, Gruetzmacher, Hamers, Hansmann, Lisensky, Owen, and Peterson); Noes, 1 (Rep. Strachota); and Not Voting, 1 (Public Member Hamilton).

- WLC: 0101/2, relating to a Wisconsin interagency nanotechnology council, passed by a vote of Ayes, 11 (Sen. Miller; Rep. Berceau; and Public Members Benedict, Cernohous, Cronin, Gruetzmacher, Hamers, Hansmann, Lisensky, Owen, and Peterson); Noes, 2 (Sen. Harsdorf and Rep. Strachota); and Not Voting, 1 (Public Member Hamilton).

Appendix 2

State of Wisconsin
JOINT LEGISLATIVE COUNCIL

Co-Chairs
MARY LAZICH
Senator

JOAN BALLWEG
Representative

LEGISLATIVE COUNCIL STAFF
Terry C. Anderson
Director
Laura D. Rose
Deputy Director

April 19, 2011

(Wisconsin Congressional Delegation)

(Federal Agency Heads, incl. the Environmental Protection Agency, National Nanotechnology Initiative, President's Office of Science and Technology Policy, Occupational Safety and Health Admin., Consumer Product Safety Commission, National Institute for Occupational Safety and Health, U.S. Chemical Safety and Hazard Investigation Board, Department of Agriculture, Food and Drug Admin.)

Re: Federal Programs Related to Nanotechnology

Dear ( ):

The Special Committee on Nanotechnology was created by the Wisconsin Joint Legislative Council to examine the human health and environmental concerns related to the manufacture, use, and disposal of nanomaterials, to consider the monitoring of nanomaterials, and to develop strategies to facilitate the development of nanotechnology to create and retain jobs in Wisconsin, including ways in which the government can help the public and private sectors address potential risks and meet regulatory requirements.

The committee has explored a wide range of issues related to nanotechnology. The activities of the committee can be reviewed at: http://legis.wisconsin.gov/lc/committees/study/2010/NANO/index.html.

The committee heard testimony about the impressive economic development potential of nanotechnology from a number of businesses and research facilities in Wisconsin that are at the forefront of this emerging industry. The committee conducted a review of numerous federal programs and policies that impact nanotechnology and received testimony that raises concerns about various potential health, safety, and environmental impacts of nanomaterials. As a result of its months of inquiry and study, the committee is seeking your help to effect positive changes in federal policies and programs that will enable nanotechnology businesses to develop and prosper in this emerging industry and also ensure that adequate resources and attention are focused on the health, safety, and environmental concerns related to nanotechnology that have been identified. The committee believes these issues are best addressed at the federal level to ensure uniform regulation and to allow for the most efficient use of resources. Accordingly, and with recognition that federal

agencies are at different stages in the development of their approaches to nanomaterials, the committee makes the following recommendations:

Workplace Safety – The committee commends the National Institute for Occupational Safety and Health (NIOSH) for its excellent research and advocacy to protect the health and safety of workers exposed to nanoscale materials. The committee urges NIOSH to continue this work and urges other federal agencies to take note of this work and incorporate the information and recommendations developed by NIOSH into regulatory efforts to ensure safety of products and to protect the environment. The committee also recommends that OSHA require material safety data sheets to provide information about any nanomaterials intentionally included in a material, and urges the federal government take the lead in establishing and disseminating best practices for handling of nanomaterials.

Chemicals Regulation – The committee recommends that the federal government continue to evaluate and update its system of regulating chemicals to ensure that the regulations are effective in addressing the unique characteristics of nanomaterials. The committee heard testimony indicating that chemicals regulations developed prior to the common usage of nanomaterials are inadequate as applied to nanomaterials because they are based solely on chemical composition of materials. The committee supports efforts undertaken by the Environmental Protection Agency (EPA) to address this issue by requiring stricter testing of certain nanoscale chemicals and encourages the agency to continue and expand this effort. The committee also strongly urges EPA to consider revising reporting requirements that are currently based on volume to ensure that use of nanomaterials is adequately reported, and to share information on use of nanomaterials with state regulatory bodies to the greatest extent possible.

Federal Nanotechnology Research – Currently, research funding focusing on the risks of nanotechnology encompasses only a small portion of total federal research funding devoted to nanotechnology. Although the nanotechnology industry has significant potential to improve our overall quality of life, it is imperative to proactively identify and manage any potential risks so that human health and the environment are protected. Taking these proactive steps will also help ensure that the nanotechnology industry does not suffer setbacks that may result from a loss of public confidence in this technology. Therefore, the committee requests that the federal government grant high priority to funding research related to the environmental, health, and safety aspects of nanomaterials, especially with respect to nanomaterials with wide distribution in consumer products. The committee also recommends that research into these aspects of nanomaterials consider the impacts of materials throughout their entire life cycle, including production, use, and disposal.

Regulation of Consumer Products – The committee recommends that the federal government significantly expand and expedite research into the need for regulation of consumer products containing nanomaterials, and develop regulations as needed to protect consumers and the environment. We also recommend that federal agencies strive to coordinate regulation of consumer products with regulatory trends and developments in other countries, particularly Canada and the European Union, to ensure that U.S.-made products remain competitive in other markets and products imported into the United States are safe. We recommend as well that relevant federal agencies remain abreast of research activities in other countries and that the experiences of other countries be considered when designing federal efforts to study and regulate nanotechnology.

We appreciate your consideration of these requests, and appreciate the efforts that have already been made by the federal government in support of and with the intent of better understanding nanotechnology. Please feel free to contact us with any questions or comments, or regarding other ways that we might work together in support of this emerging field.

Sincerely,

Senator Sheila Harsdorf, Chair
Special Committee on Nanotechnology

Senator Mark Miller, Vice-Chair
Special Committee on Nanotechnology

SH:MM:jal

Appendix 3

Joint Legislative Council

[Joint Legislative Council Members Who Selected and Appointed Committee and Its Membership]

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This 22-member committee consists of the majority and minority party leadership of both houses of the Legislature, the co-chairs and ranking minority members of the Joint Committee on Finance, and 5 Senators and 5 Representatives appointed as are members of standing committees.

Joint Legislative Council

[Current Joint Legislative Council Members Receiving Committee Report]

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This 22-member committee consists of the majority and minority party leadership of both houses of the Legislature, the co-chairs and ranking minority members of the Joint Committee on Finance, and 5 Senators and 5 Representatives appointed as are members of standing committees.

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Appendix 4

Nanotechnology

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STUDY ASSIGNMENT: The Special Committee is directed to examine the human health and environmental concerns related to the manufacture, use, and disposal of nanomaterials and develop legislation to address these concerns. In particular, the Special Committee shall consider the establishment of methods to monitor nanomaterials by use of a nanotechnology registry system or the imposition of other disclosure requirements. The Special Committee shall also develop strategies to facilitate the development of nanotechnology to create and retain jobs in Wisconsin, including ways in which government can help nanotechnology researchers, small firms, and start-ups address potential risks and meet regulatory requirements.

14 MEMBERS: 2 Senators; 2 Representatives; and 10 Public Members.

LEGISLATIVE COUNCIL STAFF: Mary Matthias, Pam Shannon, and Larry Konopacki, Senior Staff Attorneys; and Julie Learned, Support Staff.

Appendix 5

Committee Materials List

(Copies of documents are available at www.legis.state.wi.us/lc)

Other Materials Submitted to the Committee

- Document, submitted by Maria C. Powell, Ph.D., Community-Based Participatory Researcher, Midwest Environmental Justice Organization, Nanotechnology Citizen Engagement Organization, to Members of the Special Committee on Nanotechnology, responding to a letter submitted by Dr. Dietram Scheufele on September 25, 2010 (November 2010).
- Document, submitted by Maria C. Powell, Ph.D., Community-Based Participatory Researcher, Midwest Environmental Justice Organization, Nanotechnology Citizen Engagement Organization, responding to documents submitted to the Special Committee on November 30, 2010 (December 2010).
- Letter, submitted by Maria Powell, Ph.D., Lead Community-Based Participatory Researcher, NanoCEO, Midwest Environmental Justice Organization (February 28, 2011).

April 25, 2011 Mail Ballot

- WLC: 0037/3, relating to establishing a nanotechnology information hub and a nanotechnology council.
- WLC: 0101/2, relating to a Wisconsin interagency nanotechnology council.
- Letter to the Wisconsin Congressional Delegation and the federal agency heads regarding nanotechnology programs.

March 2, 2011 Meeting (Madison, WI)

- WLC: 0037/2, relating to establishing a nanotechnology information hub and a nanotechnology council.
- WLC: 0101/1, relating to a Wisconsin interagency nanotechnology council.
- Draft letter to the Wisconsin Congressional Delegation and the federal agency heads regarding nanotechnology programs.

January 26, 2011 Meeting (Madison, WI) (Cancelled)

December 7, 2010 Meeting (Madison, WI)

- Memo No. 3, *Options for Legislation--Interagency Collaboration on Nanotechnology* (November 30, 2010).
- WLC: 0037/1, relating to establishing a nanotechnology information hub and a nanotechnology council.

October 26, 2010 Meeting (Madison, WI)

- Memo No. 2, *Recommendations for Legislation* (October 19, 2010).
- PowerPoint presentation, *Be Bold Wisconsin, Making Wisconsin More Competitive*, submitted by Brian Doudna, President, Wisconsin Economic Development Association.
- PowerPoint presentation, submitted by Maliyakal John, WiSys Technology Foundation (October 26, 2010).
- PowerPoint presentation, *A Brief Introduction to the Office of Corporate Relations*, submitted by Charles Hoslet, Managing Director, Office of Corporate Relations, University of Wisconsin (UW)-Madison (October 26, 2010).
- Information from Public Member George Lisensky.
- Suggestions from Charles Hoslet, Managing Director, University of Wisconsin-Madison, Office of Corporate Relations.

September 30, 2010 Meeting

- Letter, to Representative Chuck Benedict and Senator Mark Miller, Special Committee on Nanotechnology, from Dietram A. Scheufele, Ph.D., University of Wisconsin-Madison (September 25, 2010).
- PowerPoint presentation, submitted by Jennifer Wolf Horejsch, The Rewards and Risks of Nanotechnology for Businesses (September 30, 2010).
- PowerPoint presentation, submitted by Bill Clare, Planning Section Supervisor, and Randi Wind Milsap, General Counsel, Wisconsin Department of Military Affairs.
- Document, *The Future of Research in Wisconsin*, prepared by Tom Still, President, Wisconsin Technology Council.
- Testimony of Al Shea, Deputy Secretary, Wisconsin Department of Natural Resources (September 30, 2010).
- PowerPoint presentation, *Nanotechnology in Public Health*, submitted by Lynda Knobeloch, Ph.D., Environmental and Occupational Health, and Carrie Kahn, Department Legislative Liaison.
- 2010 Inventory Fee Statement, Wisconsin Emergency Management, submitted by Randi Wind Milsap, General Counsel, Department of Military Affairs.
- Booklet, *An Information Guide, EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT, Wisconsin Statute 323.60*, submitted by Randi Wind Milsap, General Counsel, Department of Military Affairs.
- Pamphlet, *Safe Nanotechnology in the Workplace*; *an Introduction for Employers, Managers, and Safety and Health Professionals*, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- *Approaches to Safe Nanotechnology; Managing the Health and Safety Concerns Associated with Engineered Nanomaterials*, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- *CDC Current Intelligence Bulletin 60*, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- Tables, Part 1 - Comparative Performance, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- *Safety and Health Program Assessment Worksheet*, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- ACGIH Nanotechnology Health and Safety: Case Studies in the Occupational Setting, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.
- PowerPoint presentation, *Nanotechnology*, submitted by Terry Moen, WisCon Program Manager, Wisconsin

State Laboratory of Hygiene.

- Brochure, *WisCon, Onsite Safety & Health Consultation in Wisconsin*, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene, submitted by Terry Moen, WisCon Program Manager, Wisconsin State Laboratory of Hygiene.

- Presentation, submitted by Tom Still, President, Wisconsin Technology Council.

September 16, 2010 Meeting

- GAO Report to the Chairman, Committee on Environment and Public Works, U.S. Senate, *Nanotechnology, Nanomaterials Are Widely Used in Commerce, but EPA Faces Challenges in Regulating Risk* (May 2010).

- Memo No. 1, *Regulation of Nanotechnology in California and Cambridge, Massachusetts* (September 9, 2010):

    - Enclosure 1, Letter, from Jeffrey Wong, Ph.D., Chief Scientist, DTSC, regarding chemical information call-in carbon nanotubes (January 22, 2009).

    - Enclosure 2, *California Health and Safety Code Sections 57000-57020,* DTSC.

    - Enclosure 3, Berkeley, California Municipal Code, Chapter 15.12, Hazardous Materials and Wastes Management.

    - Enclosure 4, *Recommendations for a Municipal Health & Safety Policy for Nanomaterials*, A Report to the Cambridge City Manager, submitted by Cambridge Nanomaterials Advisory Committee, Cambridge Public Health Department (July 2008).

- PowerPoint Presentation, by Todd Kuiken, Ph.D., Research Associate, Project on Emerging Nanotechnologies**,** Woodrow Wilson International Center for Scholars, Washington, D.C

- PowerPoint Presentation, by Jim Alwood, Office of Pollution Prevention and Toxics.

- PowerPoint Presentation, by Bradley R. Grams, Environmental Scientist, Chemicals Management Branch, Land and Chemicals Division, EPA Region 5.

- PowerPoint Presentation, by Paul A. Schulte, Ph.D., Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.