CONNECTICUT STEM CELL RESEARCH ADVISORY COMMITTEE
Minutes – Special Meeting
Tuesday, June 8, 2010—Continuation of Monday, June 7, 2010, Meeting

The June 7, 2010 special meeting of the Connecticut Stem Cell Research Advisory Committee "Advisory Committee" was reconvened on Tuesday, June 8, 2010, at the Legislative Office Building, Room 2B, Capitol Avenue, Hartford, Connecticut.

Call to Order: Noting the presence of a quorum, Robert Galvin, Chairman of the Advisory Committee, reconvened the meeting at 8:34 a.m. Members present: Treena Livingston Arinzeh, Ph.D.; Richard H. Dees, Ph.D.; Robert Galvin, M.D., M.P.H., M.B.A. (Chair); Gerald Fishbone, M.D; David Goldhamer, Ph.D.; Myron Genel, M.D.; Ronald Hart, Ph.D.; Ann Kiessling, Ph.D. (by phone); Robert Mandelkern; Paul Pescatello, J.D., Ph.D.; and Milton B. Wallack, D.D.S.

Advisory Committee Members Absent: Anne Hiskes, Ph.D. and Stephen Latham, J.D., Ph.D.

Other Attendees: Isolde Bates (UCONN); Marianne Horn (DPH); Diane Krause (Yale University); Marc LaLande (UCONN); June Mandelkern (Parkinson Rep. to Stem Cell Coalition); Chelsey Sarnecky (CI); Lynn Townshend (DPH); Daniel Wagner (CI); Paula Wilson (Yale); and Warren Wollschlager (DPH).

Opening Remarks—Commissioner Galvin:

Dr. Galvin mentioned that Dr. Kiessling is unable to attend the meeting in person and will be joining via Skype. Dr. Galvin welcomed everyone back and noted that good decisions have to be about allocating approximately $9,800,000 of grant funding. The Committee members discussed how to proceed. It was noted that in the past, the focus has been on encouraging new investigators and seed grants. Suggestion was made to focus on stem cell research, particularly human embryonic stem cell research that is not eligible for federal funding and its relevance to human health. Suggestion was also made to give priority to translational work that will lead to clinical application.

Continuation of Review of Core Grant Proposal 10SCD01:

The Committee discussed the recommendation to move proposal 10SCD01 from the "maybe" category to the "yes" category. Dr. Hart reviewed his rationale for recommending that the proposal be funded. He read Dr. Kiessling's e-mail which indicates that she recommends the approval of the Core proposal for $500,000 instead of $600,000 to limit technician time and supplies since it will take time to get the equipment organized. Excerpts from the Request for Proposals were read relative to the funding of Core grant proposals. There was general consensus that Core proposal 10SCD01 meets the criteria for funding a Core proposal in this

funding round. Dr. Hart suggested the formation of a scientific oversight committee consisting of someone from Yale University, someone from UCONN and at least one member from out of state to provide some oversight and to ensure that equipment and information is being shared. It was noted that California has an elaborate oversight system in place. Mr. Wagner mentioned that there is currently some oversight. He explained that in accordance with reporting requirements, all grant recipients must provide certain information; and if the requirements are not met, the grant recipient will not continue to receive funding.

Attorney Horn read the list of those eligible to vote on the UCONN proposals and those eligible to vote on the Yale proposals.

> **MOTION:** Upon a motion made by Dr. Hart, seconded by Dr. Wallack, the eligible Committee members voted unanimously in favor of putting Core grant proposal 10SCD01, Dr. Antic, principal investigator, into the "yes" category. MOTION PASSED.

Ms. Townshend reiterated that full funding considerations will be held to the end of consideration of all grant categories.

Further Discussion of the "Maybe" Seed Grant Proposals:

The Advisory Committee members discussed the "maybe" Seed grant proposals in further detail.

The Committee members discussed Seed grant proposal 10SCA18. There wasn't consensus; and therefore, a roll call vote was taken.

> **MOTION:** Upon a motion made by Dr. Wallack, seconded by Dr. Hart, the eligible Committee members voted in favor of putting seed grant proposal 10SCA18, Yale University, "Control of mRNA Translation in Neuronal Differentiation from hESC" Dr. Wells, principal investigator," into the "no" category. **VOTE: 7-1** (In favor: Arinzeh, Dees, Goldhamer, Hart, Kiessling, Mandelkern, Wallack; Opposed: Fishbone; Dr. Pescatello was not present for the vote). MOTION PASSED.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA30 "Molecular Mechanisms of Germ Layer Induction in Human Embryonic Stem Cells" Dr. Oron, principal investigator, into the "yes" category.

There wasn't unanimous consensus with respect to Seed grant proposal 10SCA22; and therefore, there a roll call vote was taken.

MOTION: Upon a motion made by Dr. Goldhamer, seconded by Dr. Pescatello, the eligible Committee members voted in favor of putting seed grant proposal 10SCA22, Yale University, "Identification and Characterization of Multipotent Cell Populations from Human Adipose Tissue for Application in Regenerative Therapies," Dr. Rodeheffer, principal investigator into the "yes" category. **VOTE: 7-1** (In favor: Arinzeh, Fishbone Goldhamer, Hart, Kiessling, Mandelkern, Pescatello, Wallack; Opposed: Dees; Dr. Pescatello was not present for the vote). MOTION PASSED.

There wasn't unanimous consensus with respect to Seed grant proposal 10SCA12; and therefore, there a roll call vote was taken.

MOTION: Upon a motion made by Dr. Arinzeh, seconded by Dr. Fishbone, the eligible Committee members voted in favor of putting seed grant proposal 10SCA12, Yale University, "Analysis of the Biological Function of Lin28 in Human Embryonic Stem Cells Using a Novel RNA Interference Method," Dr. Huang, principal investigator into the "no" category. **VOTE: 7-1** (In favor: Arinzeh, Dees, Fishbone Goldhamer, Hart, Kiessling, Wallack; Opposed: Mandelkern; Dr. Pescatello was not present for the vote). MOTION PASSED.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA16, Yale University, "In vivo Evaluation of Humans ES, IPS and Adult Brain Derived Neural Progenitor Cell Transplantation and Migration Using MRI," Dr. Shapiro, principal investigator, into the "yes" category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA13, Yale University, "The Role of Epigenetic Factor-HP1 in Regulating Human Embryonic Stem Cell Pluripotency and Differentiation," Dr. Cheng, principal investigator, into the "yes" category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA47, UCHC, "Discovering Treatments to Prevent Neurodegeneration in Huntington's Disease Using hESCs and Patient-Derived iPSCs," Dr. Drazinic, principal investigator, into the "yes" category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA36, UCHC, "Generation of a Novel Source of iPS Cells for the Treatment of Osteoarthritis," Dr. Guzzo, principal investigator, into the "yes" category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA28, UCHC, “Study the Role of Cytoplasmic RNA Binding Protein in Human Embryonic Stem Cells and During Neural Differentiation,” Dr. Palakodeti, principal investigator, into the “no” category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA23, UCHC, “To Develop Efficient Methodologies to Generate Customized Anti-Tumor Effecter T Cells from human Embryonic Stem Cells (hES) and induced Pluripotent Stem Cells (iPS) by TCRengineering Approach,” Dr. Chhabra, principal investigator, into the “yes” category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA32, UCHC, “Bone Regeneration Potential of Mesenchymal Cells Derived from ES Cells Versus Adult Mesenchymal Stem Cells,” Dr. Kalajzic, principal investigator, into the “no” category.

There was unanimous consensus from the eligible Committee members to move Seed grant proposal 10SCA40, UCONN, “The Lamin Interactome during Stem Cell Differentiation,” Dr. Krueger, principal investigator, into the “no” category.

Further Discussion of the “Maybe” Established Investigator Grant Proposals:

The Committee members discussed how to proceed with the Established Investigator proposals in the “maybe” category. A suggestion was made to reduce each of the proposals from approximately $1,000,000 to $725,000. Some concern was raised with making such a large reduction for all of the proposals. A suggestion was made to review each of the proposals in the “maybe” category to determine whether the budgets can be reduced individually and/or to reduce the length of time for each of the grants. A suggestion was also made to group similar proposals to be considered together.

After discussion, there was consensus to discuss grant proposals 10SCB29, 10SCB22, 10SCB19 and 10SCB16 in comparison with each other.

The Committee member discussed 10SCB21, UCHC, “The Epigenetics of Wolf-Hirschhorn Syndrome: A Stem Cell Approach” Dr. Bayarsaihan, principal investigator. There was consensus to move the proposal into the “no” category.

After further discussion on Established Investigator grant proposal 10SCB01, Yale University, “Regulation of VEGFR2 Signaling in Hemangioblast: Mechanism and Therapeutics,” Dr. Min, principal investigator, there was consensus from the committee members eligible to vote to move the proposal into the “no” category.

There wasn't unanimous consensus regarding Established Investigator grant proposal 10SCB07; and therefore, a roll call vote was taken.

> **MOTION:** Upon a motion made by Dr. Kiessling, seconded by Dr. Genel, the eligible Committee members voted in favor of putting Established Investigator grant proposal 10SCB07, UCHC, "Use of hESC- and iPSC- derived Skeletal Progenitors for Mammalian Limb and Digit Regeneration," Dr. Dealy, principal investigator, into the "yes" category and funding the proposal for two years at $500,000. **VOTE: 8-1** (In favor: Arinzeh, Dees, Fishbone Goldhamer, Hart, Kiessling, Pescatello, Wallack; Opposed: Mandelkern). MOTION PASSED.

With respect to Established Investigator grant proposal 10SCB06, UCHC, "Stem Cell Vaccine Against Cancer," Dr. Li, principal investigator, it was noted that Dr. Li is leaving the State of Connecticut; and therefore, the principal investigator will be changing. There was consensus from those eligible to vote to move the proposal into the "no" category.

The Committee members had a lengthy discussion about Established Investigator grant 10SCB23, Wesleyan, "Directing Differentiation of Embryonic Stem Cells to Epiblast," Dr. Grabel, principal investigator. The overall scoring for the proposal in comparison with other proposals was discussed. It was noted that there is little difference between a project that scored 3.8 and a project that scored 3.3. A suggestion was made to reduce the budget from a four-year grant to a three-year grant. Some of the economic benefits of the proposal were discussed. Due to a lack of unanimous consensus, a vote was taken.

> **MOTION:** Upon a motion made by Dr. Wallack, seconded by Dr. Hart, the eligible Committee members voted to put Established Investigator grant proposal 10SCB23, Wesleyan, "Directing Differentiation of Embryonic Stem Cells to Epiblast," Dr. Grabel, principal investigator, into the "no" category. **VOTE: 4-6** (In favor: Arinzeh, Galvin, Hart, Wallack; Opposed: Dees, Fishbone, Genel, Kiessling, Mandelkern Pescatello). MOTION FAILED and the proposal remained in the "maybe" category.

Dr. Genel made a motion that was seconded by Dr. Kiessling to move Established Investigator grant proposal 10SCB23, Wesleyan, "Directing Differentiation of Embryonic Stem Cells to Epiblast," Dr. Grabel, principal investigator, into the "yes" category and to fund the project for three years at $750,000. It was noted that if this proposal is moved to the "yes" category, other proposals would have to be moved to the "no" category.

> **MOTION:** Upon a motion made by Dr. Galvin, seconded by Dr. Wallack, the eligible Committee members voted unanimously in favor of tabling the decision on Established Investigator grant proposal 10SCB23, Wesleyan, "Directing Differentiation of Embryonic Stem Cells to Epiblast," Dr. Grabel, principal investigator.

After further discussion on Established Investigator grant proposal 10SCB18, UCONN, "Developing a Microscale Artificial Stem Cell Niche," Dr. Fan, principal investigator, there was consensus from those committee members eligible to vote to move the proposal into the "no" category.

The Committee members discussed 10SCB29, 10SCB22, 10SCB19 and 10SCB16 in comparison with each other. Dr. Kiessling explained that all of these grant proposals deal with some aspect of reprogramming. Each of the applicants scored between 2.8 and 3.2 and received similar Peer Review enthusiasm. Dr. Kiessling mentioned that the Peer Reviewers expressed some concerns with respect to at least one of the aims in each of the proposals. She noted that there is no overlap with any of these proposals. A suggestion was made to fund all four proposals but for a shorter duration. Another suggestion was made to move the two "maybe" proposals (10SCB29 and 10SCB22) to the "no" category and to fund the two "yes" proposals (10SCB19 and 10SCB16) but for three years at $750,000.

> **MOTION:** Upon a motion made by Dr. Dees, seconded by Dr. Hart, the eligible Committee members voted unanimously in favor of:
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> - moving Established Investigator grant proposals, 10SCB22, Yale University, "Epigenetic Mechanisms During Cellular Reprogramming," Dr. Xiao, principal investigator, and 10SCB29, Yale University, "Epigenetic Regulation of Reprogramming," Dr. Park, principal investigator, into the "no" category; and
> - keeping Established Investigator grant proposals 10SCB16, Yale University, "Transcriptional Control of Pluripotency in Human Embryonic Stem Cells," Dr. Ivanova, principal investigator, and 10SCB19, Yale University, "Regulations of Lin28 in Human Embryonic Stem Cell Self-Renewal and Differentiation," Dr. Qui, principal investigator, in the "yes" category but funding them for three years at $750,000 each.
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> **VOTE: 7-2** (In favor: Arinzeh, Dees, Goldhamer, Hart, Kiessling, Pescatello, Wallack; Opposed: Fishbone, Mandelkern; MOTION PASSED.

The amount of grant funds requested with all of the proposals currently in the "yes" category is approximately $12,100,000. There was consensus not to make any additional individual reductions at this time but to review each of the Established Investigator grant proposals currently in the "yes" category to see if any can be moved to the "no" category.

The Committee members discussed Established Investigator grant proposal 10SCB36.

> **MOTION:** Upon a motion made by Dr. Kiessling, seconded by Dr. Fishbone, the eligible Committee members voted to keep Established Investigator grant proposal 10SCB36, Yale University, "Reconstitution of Human Hematopoietic System by

HSCs derived from Human Embryonic Stem Cells in Humanized Mice," Dr. Flavell, principal investigator, in the "yes" category but to reduce the length of the project to two years rather than four years at $500,000 rather than $1,000,000; **VOTE: 4-5** (In favor: Fishbone Hart, Kiessling, Wallack; Opposed: Arinzeh, Dees, Goldhamer, Mandelkern Pescatello); MOTION FAILED and the proposal remained in the "yes" category at the proposed amount of $1,000,000 over four years but to re-evaluate the proposal after two years.

A discussion ensued on reducing all of the Established Investigator grants from four years to three years. Dr. Goldhamer reiterated his concerns and noted that reducing the length of the grant reduces productivity because the researchers would be constantly writing grants. The Committee members again discussed options for reducing the "yes" category to $9,800,000. A suggestion was made to eliminate the three Established Investigator grant proposals from the "yes" category with the lowest scientific merit as ranked by the Peer Review Committee. Several members expressed a preference for funding more grants for a shorter period of time rather than eliminating some of the grants.

MOTION: Upon a motion made by Dr. Hart, seconded by Mr. Mandelkern, the Committee members voted to keep only the following Established Investigator grant proposals in the "yes" category, all at four-year grants with the exception of 10SCB19, which is recommended to be reduced to a three-year grant:

- 10SCB36 $1,000,000
- 10SCB30 $992,500
- 10SCB05 $947,975
- 10SCB03 $1,000,000
- 10SCB02 $832,608
- 10SCB12 $1,000,000
- 10SCB19 $750,000

VOTE: 6-5 (In favor: Arinzeh, Dees, Galvin, Hart, Mandelkern, Pescatello; Opposed: Fishbone Goldhamer, Genel, Kiessling, Wallack); MOTION CARRIED.

Dr. Wallack expressed frustration with not funding more Established Investigator grant proposals, especially because of the uncertainties with funding for future years; and he suggested reconsidering the vote to fund more Established Investigator grant proposals at reduced amounts. Dr. Galvin noted the support for Stem Cell research from the current Administration and noted that it will be important for the Committee members to urge support of Stem Cell research and health care with the change in the Administration. There was no support to reconsider the motion just taken.

With all of the Core, Seed, and Established Investigator proposals currently in the "yes" category, the grant funds required would be $9,822,922.

Vote on Funding for Core Grant Proposal:

The Committee members voted to fund each of the proposals remaining in the "yes" category as follows:

> **MOTION:** Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Core grant proposal 10SCD01, UCHC, "Stem Cell Physiology and Chemistry Core," Dr. Antic, principal investigator, in the amount of $500,000; **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

Vote on Funding for Established Investigator Grant Proposals:

> **MOTION:** Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB12, UCHC, "Generation of Hematopoietic Stem Cells and T-cell Progenitors from Human ESCs," Dr. Lai, principal investigator, in the amount of $1,000,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

> **MOTION:** Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB19, Yale University, "Regulations of Lin28 in Human Embryonic Stem Cell Self-Renewal and Differentiation," Dr. Qui, principal investigator, in the amount of $750,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

> **MOTION:** Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB30, UCHC, "Modeling Parkinson's Disease Using Human Embryonic Stem Cells and Patient-Derived Induced Pluripotent Stem Cells," Dr. Li, principal investigator, in the amount of $992,500. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

> **MOTION:** Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB05, Yale University, "Mechanical Control of Neural Stem Cell Fate," Dr. Bordey, principal investigator, in the amount of

$947,975. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB03, Yale University, "Use of Human Embryonic Stem Cells and Inducible Pluripotent Stem Cells to Study Megakaryoblastic Leukemia," Dr. Krause, principal investigator, in the amount of $1,000,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Established Investigator grant proposal 10SCB02, Yale University, "Co-Differentiation of hESC-Derived Retinal and Retinal Pigment Epithelial Progenitors," Dr. Rizzolo, principal investigator, in the amount of $832,608. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted in favor of providing funding for Established Investigator grant proposal 10SCB36, Yale University, "Reconstitution of Human Hematopoietic System by HSCs derived from Human Embryonic Stem Cells in Humanized Mice, in the amount of $1,000,000. **VOTE: 8-1** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Mandelkern Pescatello, Wallack; Opposed: Kiessling) MOTION PASSED.

Vote on Funding for Seed Grant Proposals:

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA23, UCHC, "To Develop Efficient Methodologies to Generate Customized Anti-Tumor Effecter T Cells from human Embryonic Stem Cells (hES) and induced Pluripotent Stem Cells (iPS) by TCRengineering Approach," Dr. Chhabra, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA36, UCHC, "Generation of a Novel Source of iPS Cells for the Treatment of Osteoarthritis," Dr. Guzzo, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA47, UCHC, "Discovering Treatments to Prevent Neurodegeneration in Huntington's Disease Using hESCs and Patient-Derived iPSCs," Dr. Drazinic, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA16, Yale University, "In vivo Evaluation of Humans ES, IPS and Adult Brain Derived Neural Progenitor Cell Transplantation and Migration Using MRI," Dr. Shapiro, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA13, Yale University, "The Role of Epigenetic Factor-HP1 in Regulating Human Embryonic Stem Cell Pluripotency and Differentiation," Dr. Cheng, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA38, Yale University, "Efficient Gene Targeting in Human Embryonic Stem Cell via Recombineering Based Long Arm Targeting Vector," Dr. Dong, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA22, Yale University, "Identification and Characterization of Multipotent Cell Populations from Human Adipose Tissue for Application in Regenerative Therapies," Dr. Rodeheffer, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted in favor of providing funding for Seed grant proposal 10SCA30, Yale University, "Molecular Mechanisms of Germ Layer Induction in Human

Embryonic Stem Cells" Dr. Oron, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA24, UCHC, "Novel Roles of Long Non-Coding RNAs in Human Embryonic Stem Cells," Dr. Yang, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA21, UCHC, "Regulating Caspase Activity to Enhance Differentiation Efficiency of Human Embryonic Stem Cells," Dr. Wang, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted in favor of providing funding for Seed grant proposal 10SCA06, UCONN, "Nuclear Receptor Control of Human Epidermal Stem Cells," Dr. Aneskievich, principal investigator, in the amount of $199,894. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA29, UCONN, "Generation of Layer V Pyramidal Neurons from Human Embryonic Stem Cells," Dr. Filipovic, principal investigator, in the amount of $199,945. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Genel, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted unanimously in favor of providing funding for Seed grant proposal 10SCA05, Yale University, "The Role of Dormant Replication Origins in Ensuring Genome Integrity in Human Embryonic Stem Cells" Dr. Ge, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh, Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

MOTION: Upon a motion duly made and seconded, the eligible Committee members voted in favor of providing funding for Seed grant proposal 10SCA35, Yale University, "Maturation of Human Embryonic Stem (hES) Cell-Derived Cardiomyocytes *in vitro* Using 3D Engineered Tissue Model System," Dr. Lee, principal investigator, in the amount of $200,000. **VOTE: 9-0** (In favor: Arinzeh,

Dees, Fishbone, Goldhamer, Hart, Kiessling, Mandelkern Pescatello, Wallack) MOTION PASSED.

Vote on Reserves:

The Advisory Committee members considered the remaining grant proposals for a reserve category in the event one or more of the funded proposals does not come to fruition or there are funds remaining.

MOTION: Upon a motion made by Dr. Hart, seconded by Dr. Genel, the eligible Committee members voted unanimously in favor of putting the following grant proposals in order of highest ranked as the reserved grant proposals for future consideration if the opportunity arises:

Established Investigator proposals in rank order:

- 10SCB16, Yale University, "Transcriptional Control of Pluripotency in Human Embryonic Stem Cells," Dr. Ivanova, principal investigator, for three years in the amount of $750,000.
- 10SCB17, UCHC, "Development of Novel Translational Approaches for the Repair of Human Osteoarthritic Cartilage Explants Using Embryonic Stem Cell-Derived Chondrocytes," Dr. Drissi, principal investigator, in the amount of $999,754
- 10SCB07, UCHC, "Use of hESC- and iPSC- derived Skeletal Progenitors for Mammalian Limb and Digit Regeneration," Dr. Dealy, principal investigator, for two years in the amount of $500,000
- 10SCB23, Wesleyan, "Directing Differentiation of Embryonic Stem Cells to Epiblast," Dr. Grabel, principal investigator

Seed grant proposals in rank order:

- 10SCA18, Yale University, "Control of mRNA Translation in Neuronal Differentiation from hESC" Dr. Wells, principal investigator, in the amount of $200,000
- 10SCA12, Yale University, "Analysis of the Biological Function of Lin28 in Human Embryonic Stem Cells Using a Novel RNA Interference Method," Dr. Huang, principal investigator, in the amount of $200,000
- 10SCA28, UCHC, "Study the Role of Cytoplasmic RNA Binding Protein in Human Embryonic Stem Cells and During Neural Differentiation," Dr. Palakodeti, principal investigator, in the amount of $200,000
- 10SCA32, UCHC, "Bone Regeneration Potential of Mesenchymal Cells Derived from ES Cells Versus Adult Mesenchymal Stem Cells," Dr. Kalajzic, principal investigator, in the amount of $200,000
- 10SCA40, UCONN, "The Lamin Interactome during Stem Cell Differentiation," Dr. Krueger, principal investigator, in the amount of $200,000.

Public Comments:

Mr. Wollschlager mentioned that a copy of the draft Annual Report will be provided to the Committee members, and a meeting may have to be scheduled to obtain approval of the Annual Report. Mr. Wollschlager stated that this is the last year to submit an Annual Report because the law changed. Mr. Wollschlager acknowledged Denise Lieper who was instrumental in getting the program up and running. He noted that Ms. Lieper will be retiring at the end of the month.

Paula Wilson thanked the Committee members on behalf of Yale University for the Stem Cell Research grant program.

Dr. Galvin thanked the Committee members for their time and expertise.

MOTION: Upon a motion duly made and seconded, the Advisory Committee voted unanimously in favor of adjourning the meeting at 12:45 p.m.

Respectfully submitted:

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Dr. Robert Galvin, Chair