

ACTA DE SELECCIÓN DE PROYECTOS

SUBCOMISIÓN DE CIENCIAS NATURALES Y EXACTAS

La Sub-Comisión de Ciencias Naturales y Exactas del Comité de Programa de la Comisión Nacional de Iniciativas Científicas para el Milenio, creada por las Resoluciones Afectas N° 21 de 04 de agosto de 2016 (Ryder), N° 22 de 16 de agosto de 2016 (Freund, Galán y Braunstein), N° 25 de 25 de agosto de 2016 (Gerbeau), N° 26 de 25 de agosto de 2016 (Siebe) y N° 04 de 19 de enero de 2017 (Willig), fue convocada para la selección de Propuestas del **Concurso 2017 Núcleos Científicos Milenio en Investigación en Ciencias Naturales y Exactas**.

En esta oportunidad la selección de las propuestas a entrevistar se realizó mediante tele/videoconferencia, y participaron de la selección todos los miembros del Comité: Dres. Pierre Braunstein, Hans-Joachim Freund, Jorge Galán, Jean-Frédéric Gerbeau, Stuart Ryder, Claus Siebe y Michael Willig.

A la fecha no se encuentra completamente tramitado el acto administrativo de nombramiento de la nueva integrante del Comité de Programa, Dra. Marina Picciotto, por lo que su participación en el proceso de selección fue en calidad de Evaluadora Par invitada por Comité de Programa, en vista de su vasta experiencia en este tipo de evaluaciones.

Pablo Fuentes, Encargado de Relaciones Internacionales de la Iniciativa Científica Milenio, actuó como Secretario del Comité.

Las Propuestas de **Núcleos Nuevos** presentadas al concurso, y que fueron declaradas como admisibles, correspondieron a las siguientes:

N°	Tipo	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta
1	Nuevo	Rodrigo Ricardo	Alzamora	Núcleo Milenio de Fisiología Epitelial
2	Nuevo	Ruben Andrés	Ananías	Núcleo Milenio de investigación avanzada en secado y procesos relacionados de transporte de calor y masa en madera
3	Nuevo	María Estela	Andrés	Núcleo Milenio para el Estudio del Cannabis (NMEC)
4	Nuevo	Mario	Aranda	Núcleo Milenio de Biotecnología Fúngica para el Descubrimiento de Drogas (MN-FB4D2)
5	Nuevo	Patricia Marcela	Arévalo	Núcleo Milenio para la evolución de galaxias y AGN (MEGA)
6	Nuevo	Soledad Viviana	Bollo	Núcleo Milenio Nanobiosensores y aplicaciones diagnósticas (NANO-DIAG)
7	Nuevo	Sebastian	Boltana	Núcleo Milenio de Investigación e Innovación Acuícola
8	Nuevo	Francisca	Bronfman	Núcleo Milenio en Regeneración de la Conectividad Neuronal ReConnect
9	Nuevo	Alejandro Rodrigo	Bruhn	Núcleo Milenio en enfermedades respiratorias críticas agudas (ARCI)

Nº	Tipo	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta
10	Nuevo	Susan	Bueno	Núcleo Milenio en Nuevas Terapias Antimicrobianas
11	Nuevo	Raimund	Bürger	Núcleo Milenio en Análisis Numérico de Ecuaciones Diferenciales Parciales
12	Nuevo	Ricardo Mauricio	Cabrera	Núcleo Milenio para la Investigación en Enzimas: Estructura, Evolución, Ingeniería y Diseño (SEED)
13	Nuevo	Guillermo Felipe	Cabrera	Núcleo Milenio de Aprendizaje Automático para la Rápida Clasificación de Eventos Masivos
14	Nuevo	Monica Andrea	Caceres	Núcleo Milenio de Reparación, Tratamiento y Salud
15	Nuevo	Andrea	Calixto	Núcleo Milenio Metabolitos de la dieta en la protección y regeneración neuronal
16	Nuevo	Margarita	Calvo	Núcleo Milenio para el Estudio del dolor (MiNuSPain)
17	Nuevo	Jorge	Campusano	Núcleo Milenio de Neuroquímica Aplicada (NUMINA). Sistemas monoaminérgicos en insectos como blanco de interés agronómico
18	Nuevo	Gloria	Cardenas	Núcleo Milenio de Materiales Avanzados para Aplicaciones Energéticas (AMEA)
19	Nuevo	Carlos Alberto	Cardenas	Núcleo Milenio En Ciencia Computacional de Materiales
20	Nuevo	Cristian Andres	Carvajal	Núcleo Milenio en Hipertensión, Enfermedad Renal y Cardiovascular
21	Nuevo	Gino	Casassa	Núcleo Milenio en recursos hídricos de glaciares y peligros asociados
22	Nuevo	Luis Eduardo	Castañeda	Núcleo Milenio Centro de Biología Integrativa en la Interacción Hospedero-Microbiota
23	Nuevo	Pablo	Caviedes	Núcleo Milenio para el estudio de Miopatías
24	Nuevo	Francisco Javier	Cereceda	Núcleo Milenio Combustión de Biomasa y Contaminación Atmosférica
25	Nuevo	Eduardo	Cerpa	Núcleo Milenio para el Análisis Matemático de Problemas de Control
26	Nuevo	Julio César	Chanamé	Núcleo Milenio para la Galaxia Invisible (MIG)
27	Nuevo	Lucas Alejo	Cieza	Núcleo Milenio de Astrofísica de Laboratorio de Estado Sólido
28	Nuevo	Mariana	Cifuentes	Núcleo Milenio Centro de Investigación del Receptor Sensor de Calcio en Enfermedades Crónicas e Inflamación
29	Nuevo	Miguel Luis Angel	Concha	Núcleo Milenio de Mecánica de Tejidos en Desarrollo
30	Nuevo	Renato Ruben	Contreras	Núcleo Milenio Centro Interdisciplinario de Química Verde : CEQUIV
31	Nuevo	Raul	Cordero	Núcleo Milenio Antártico (NUMA)
32	Nuevo	Felipe Alfredo	Court	Núcleo Milenio Sporadic (Plataforma de Análisis de Enfermedades Raras en Chile)
33	Nuevo	Nicolas Andrés	Crossley	Núcleo Milenio de Neurociencias de la Pobreza e Inequidad (NPI)
34	Nuevo	Rodrigo Andre	Del-Rio	Núcleo Milenio en Síndrome Metabólico: Perspectivas desde el Cerebro
35	Nuevo	Paul Hinckley	Delano	Núcleo Milenio de Audición, Demencia y Estrés (ANDES)
36	Nuevo	Marcos Andres	Diaz	Núcleo Milenio en tecnologías inteligentes para medición remota y comunicación con nano-satélites

Nº	Tipo	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta
37	Nuevo	Cristina Inés	Dorador	Núcleo Milenio de Evolución del Microbioma
38	Nuevo	José	Dörner	Núcleo Milenio para el diseño de sistemas agroalimentarios sustentables y resilientes bajo escenarios de cambio climático en el sur de Chile
39	Nuevo	Verónica Raquel	Eisner	Núcleo Milenio de Intercomunicación en el Sistema Musculoesquelético
40	Nuevo	Néstor	Escalona	Núcleo Milenio en procesos catalíticos hacia la química sustentable
41	Nuevo	Miriam	Fernández	Núcleo Milenio en Pesquerías Transparentes y Sustentables
42	Nuevo	Juan Alexis	Fuentes	Núcleo Milenio para Biomarcadores Luminescentes: Diseño de moléculas para aplicaciones biológicas
43	Nuevo	William Amoldo	Gacitúa	Núcleo Milenio Biomateriales para Construcción 3D impresa; Centro para un Bio2Habitat (CB2H).
44	Nuevo	Jorge Antonio	Gamonal	Núcleo Milenio-Investigación Avanzada en Ciencias Orales (NM-IACO)
45	Nuevo	Daniel Antonio	Garrido	Núcleo Milenio en Interacción Dieta-Microbiota-Huésped
46	Nuevo	Marcelo Adán	Garrido	Núcleo Milenio de Investigación Traslacional en Oncología (InTrOn)
47	Nuevo	Eugenia Monserrat	Gayo	Núcleo Milenio del Antropoceno
48	Nuevo	Claudio Alejandro	Gonzalez	Núcleo Milenio en Biodiversidad de Ecosistemas Acuáticos sub-Antárticos
49	Nuevo	Patricio	González	Núcleo Milenio para el estudio de la heredabilidad perdida en enfermedades complejas
50	Nuevo	Christopher Norman	Hamilton-West	Núcleo Milenio One health: uniendo disciplinas para comprender la interacción entre la salud humana, animal y del ecosistema, con el desafío de un mundo cambiante
51	Nuevo	Rodrigo Hernán	Hernández	Núcleo Milenio en Ondas Oceánicas y Conversión de Energías Marinas
52	Nuevo	Emilio Augusto	Herrera	Núcleo Milenio de la programación durante el desarrollo por oxígeno (DevPROX)
53	Nuevo	Pamela Del Carmen	Hidalgo	Núcleo Milenio para el Estudio Integrado y Transdisciplinario de Procesos Marinos Costeros (IntegrAR)
54	Nuevo	Nicolás Jorge	Huneus	Núcleo Milenio de Calidad del Aire
55	Nuevo	Christian Marcelo	Ibáñez	Núcleo Milenio de Biogeografía Aplicada a la Conservación y Manejo de Recursos Marinos (BIOMA)
56	Nuevo	Natalia Pilar	Inostroza	Núcleo Milenio de Astroquímica
57	Nuevo	Leonelo Patricio	Iturriga	Núcleo Milenio en Problemas Matemáticos No Lineales y Aplicaciones
58	Nuevo	Alejandro Antonio	Jara	Núcleo Milenio Centro para el Descubrimiento de Estructuras en Datos Complejos
59	Nuevo	James Stewart	Jenkins	Núcleo Milenio Sobre Tierras y Pequeñas Estrellas (MESS)
60	Nuevo	Guillermo Andrés	Jiménez	Núcleo Milenio en Soluciones Energéticas Distribuidas

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61	Nuevo	Juan Eduardo	Keymer	Núcleo Milenio Adaptación y Computación en Máquinas Celula-Ecosystema
62	Nuevo	Luis Enrique	Lara	Núcleo Milenio de Geología y Geofísica Marina
63	Nuevo	Gloria Paz	Levicán	Núcleo Milenio en Microbioma y Neuroinmunología de Salmónidos
64	Nuevo	Mauricio	Lima	Núcleo Milenio sobre Dinámica de Poblaciones; Cambio Global e Inestabilidad Política
65	Nuevo	Enrique Andrés	Lopez	Núcleo Milenio en Riesgo sobre la Infraestructura Crítica en el Contexto Andino
66	Nuevo	Dr. Ricardo Benjamín	Maccioni	Núcleo Milenio de Neuroinmunología
67	Nuevo	Antonio Javier	Maldonado	Núcleo Milenio en Paleoecología y Arqueología: mirando el pasado para entender los efectos del cambio climático sobre la biota y las sociedades humanas
68	Nuevo	Manuel Alejandro	Maliqueo	Núcleo Milenio en Integración Neuroendocrina del Metabolismo Energético (NuNEME)
69	Nuevo	Luca	Mao	Núcleo Milenio en Ciencia de Ríos para su manejo sustentable - RiverS
70	Nuevo	Maria-Paz	Marzolo	Núcleo Milenio para Investigación del Trastorno del Espectro Autista (NUMTEA)
71	Nuevo	James Peter	McPhee	Núcleo Milenio Predictibilidad Hidrometeorológica en Regiones de Montaña
72	Nuevo	Rafael Andres	Medina	Núcleo Milenio en Patógenos Emergentes, Infección, y Cambio Climático
73	Nuevo	José	Mejía	Núcleo Milenio de Materiales Avanzado para la Producción de Hidrógeno MAP-H
74	Nuevo	Francisco Esteban	Melo	Núcleo Milenio en Física de Medios Complejos
75	Nuevo	José M.	Merigó	Núcleo Milenio Decisiones Inteligentes y Sistemas de Información
76	Nuevo	Alejandra	Moenne	Núcleo Milenio en Mecanismos antitumorales de nuevos compuestos y oligosacáridos de macroalgas marinas (Marine Pharmacology)
77	Nuevo	Lorenzo	Monaco	Núcleo Milenio de Arqueología Galáctica
78	Nuevo	Patricio Iván	Moreno	Núcleo Milenio Paleoclima
79	Nuevo	Eugenia	Morselli	Núcleo Milenio para el Estudio de la Obesidad
80	Nuevo	Jose Manuel	Munita	Núcleo Milenio en Enfoque Interdisciplinario de la Resistencia Antimicrobiana
81	Nuevo	Enrique Javier	Munoz	Núcleo Milenio para Interacciones Luz-Materia en Nanomateriales
82	Nuevo	Andrés Ignacio	Navas	Núcleo Milenio en Sistemas Dinámicos Caóticos y Aplicaciones
83	Nuevo	Rodrigo Gonzalo	Olea	Núcleo Milenio en Holografía y Gravedad Cuántica
84	Nuevo	Julio	Oliva	Núcleo Milenio en Gravitación en el Régimen de Campo Fuerte
85	Nuevo	Walter Manuel	Orellana	Núcleo Milenio en Ciencia de Materiales para Conversión de Energía
86	Nuevo	Miguel Luis	ORyan	Núcleo Milenio en la Composición y Dinámica del Microbioma en Niños Chilenos Sanos y Enfermos
87	Nuevo	Nelson David	Padilla	Núcleo Milenio de Astrofísica Computacional (NUMAC)

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88	Nuevo	Maritza Angélica	Páez	Núcleo Milenio: Ciencias de la Corrosión y Protección de Materiales
89	Nuevo	Humberto	Palza	Núcleo Milenio en Metamateriales Mecánicos Súaves e Inteligentes
90	Nuevo	Daniel Gonzalo	Paredes	Núcleo Milenio Biología de Microbiota Intestinal
91	Nuevo	Romina Paola	Pedreschi	Núcleo Milenio en Modelamiento Integrativo de Postcosecha
92	Nuevo	Marcela de Lourdes	Peña	Núcleo Milenio Centro Interdisciplinario de Neurociencia del Desarrollo
93	Nuevo	Alejandro	Perez	Núcleo Milenio en Estudios y Conservación de Ecosistemas de Arrecifes Profundos
94	Nuevo	Karina de las Mercedes	Pino	Núcleo Milenio para Desórdenes Asociados a la Microbiota
95	Nuevo	Humberto Godofredo	Prieto	Núcleo Milenio para el modelamiento eco-genómico de especies frutales y forestales
96	Nuevo	Rodrigo Arthur	Quintanilla	Núcleo Milenio de Alcoholismo
97	Nuevo	Mangalaraja	Ramalinga Viswanathan	Núcleo Milenio Centro Investigación de Energía Sustentable
98	Nuevo	Cristian Alejandro	Ramírez	Núcleo Milenio para una aproximación de innovación abierta en el diseño y optimización del procesamiento de alimentos: desde la materia prima hasta la biodisponibilidad humana, para la salud y el bienestar del Siglo 21
99	Nuevo	Rolando Aquiles	Rebolledo	Núcleo Milenio Dinámica de Sistemas Abiertos en Física Cuántica y Procesos Biofísicos
100	Nuevo	Tassilo Andreas	Reisenegger	Núcleo Milenio Centro Interdisciplinario de Astro-Partículas (I-CIA)
101	Nuevo	María Gabriela	Repetto	Núcleo Milenio: Decodificando Fenotipos Hereditarios Complejos de Enfermedades Poco Frecuentes (DECIPHERD)
102	Nuevo	Marjorie Marianela	Reyes	Núcleo Milenio de Nutrigenómica Vegetal en Suelos Volcánicos
103	Nuevo	Enrico	Rezende	Núcleo Milenio IDEAS: Interacciones, Diversidad, Ecología y Sustentabilidad
104	Nuevo	Marcelo Michel	Rivadeneira	Núcleo Milenio en Paleobiología de Transiciones Tierra-Vida (PELT)
105	Nuevo	Francisco Javier	Rivera	Núcleo Milenio Centro de Investigación en Rejuvenecimiento Cerebral - ReBrain
106	Nuevo	Gabriele	Rodriguez	Núcleo Milenio de Acuicultura de Pequeña Escala para el Desarrollo Sostenible
107	Nuevo	María Andrea	Rodriguez	Núcleo Milenio en Información Geo-espacial
108	Nuevo	Sergio Arturo	Ruiz	Núcleo Milenio Terremotos de Subducción
109	Nuevo	Doris	Saez	Núcleo Milenio Agua y Energía: Comunidades Rurales
110	Nuevo	Claudio Alejandro	Sáez	Núcleo Milenio en Dinámica de Ambientes Acuáticos Templados
111	Nuevo	Ricardo Andrés	Salazar	Núcleo Milenio TRIW: Tratamiento y re-uso de Aguas Residuales Industriales
112	Nuevo	Eugenio Alfredo	Sanfuentes	Núcleo Milenio de Investigación en Interacciones Bióticas y Abióticas en Sanidad de Bosque Nativo (FHINS)

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113	Nuevo	José Mauricio	Sarmiento	Núcleo Milenio: Impacto de la Cronodisrupción Gestacional en el Sistema Inmune del Individuo Adulto
114	Nuevo	Enzo Enrique	Sauma	Núcleo Milenio en Investigación Operativa para la Integración de Energía Sustentable
115	Nuevo	Guillermo	Schmeda	Núcleo Milenio en metabolómica y propiedades beneficiosas para la salud de plantas alimenticias chilenas
116	Nuevo	York	Schröder	Núcleo Milenio de Campos Cuánticos
117	Nuevo	Herman	Silva	Núcleo Milenio en Epigenómica
118	Nuevo	Ranganatha	Sitaram	Núcleo Milenio Centro de Interfaces Cerebro-Máquina y Mecanismos Neuromoduladores
119	Nuevo	Monica	Soler	Núcleo Milenio de Óptica No Lineal de Cristales Líquidos: Síntesis, Dinámica y Aplicaciones (NUMION-CL)
120	Nuevo	Ricardo Andrés	Soto	Núcleo Milenio Centro de Investigación Integral en VIH/SIDA (CHAIR)
121	Nuevo	Claudia Renate Andrea	Stangé	Núcleo Milenio en estrés abiótico para una agricultura sustentable
122	Nuevo	Maya Jakobine	Stein	Núcleo Milenio en Teoría de Grafos y Combinatoria Extrema
123	Nuevo	Amelia Marie	Stutz	Núcleo Milenio de Formación Estelar
124	Nuevo	Claudia	Torres	Núcleo Milenio de Cronobiología Aplicada
125	Nuevo	Rodrigo Hernán	Troncoso	Núcleo Milenio en Ejercicio y Salud (NUMES)
126	Nuevo	Sergio Andres	Uribe	Núcleo Milenio en Resonancia Magnética Cardiovascular
127	Nuevo	Juan Alejandro	Valdivia	Núcleo Milenio de Física del Plasma Espacial
128	Nuevo	Sofía Alejandra	Valenzuela	Núcleo Milenio Ambiente y Calidad de la Madera (NEWQual)
129	Nuevo	Leonardo	Vanzi	Núcleo Milenio de Tecnología, Instrumentación y Espectroscopía Astronómica
130	Nuevo	Lorena Patricia	Varela	Núcleo Milenio de Nanobiotecnología para Enfermedades Degenerativas (NanoBioD2)
131	Nuevo	Alexander Omar	Vargas	Núcleo Milenio de Registro Fósil y Evolución de Vertebrados
132	Nuevo	Luz Mónica	Vásquez	Núcleo Milenio en Ecofisiogenómica de Floraciones Fitoplanctónicas
133	Nuevo	Mario Andrés	Vera	Núcleo Milenio en Biología y Biotecnología de Biopelículas (NMB3)
134	Nuevo	Sascha	Wallentowitz	Núcleo Milenio Centro de Investigación en Energía Solar
135	Nuevo	Andreas	Wiese	Núcleo Milenio Algoritmos para Desafíos Contemporáneos de la Sociedad
136	Nuevo	Jinsong	Wu	Núcleo Milenio Centro de Investigación en Ambientes Sostenibles
137	Nuevo	Jorge Carlos	Yáñez	Núcleo Milenio en minería solar
138	Nuevo	María Isabel	Yuseff	Núcleo Milenio en Inflamación
139	Nuevo	Jose Heraclito	Zagal	Núcleo Milenio en Materiales Avanzados Asociados con el Futuro del Cobre y Metales Estratégicos Nacionales (MNCF)

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140	Nuevo	Ramón Antonio	Zárate	Núcleo Milenio para la Investigación y desarrollo de materiales para la producción y almacenamiento de energía
141	Nuevo	Francisco Alejandro	Zorondo	Núcleo Milenio Centro Interdisciplinario para la Sostenibilidad de la Ecoregión de los Lagos Araucanos (CISELA)

Se recibieron además 3 Propuestas de Renovación, las que fueron declaradas como admisibles, y que correspondieron a las siguientes:

Nº	Tipo	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta
142	Renovación	Andrés Eduardo	Chávez	Núcleo Milenio Biología de Enfermedades Neuropsiquiátricas NUMIND
143	Renovación	Alexander	Quaas	Núcleo Milenio Centro para el análisis de las ecuaciones en derivadas parciales (CAPDE)
144	Renovación	Martín Herbert	Reich	Núcleo Milenio Trazadores de Metales en Zonas de Subducción

El Comité de Programa procedió a conocer y analizar los informes de evaluación de cada Propuesta Nueva y de Renovación, elaborados por sus miembros y/o por Evaluadores Parés, en base a los criterios de evaluación dispuestos en las cláusulas II.7.1, y III.7.1, de las Bases del Concurso. A continuación, el Comité de Programa procedió a evaluar y jerarquizar las Propuestas de acuerdo a las calificaciones obtenidas.

El detalle de los puntajes obtenidos por los postulantes se presenta en el **Anexo 1**, el que se entiende forma parte de la presente acta.

En las sesiones de trabajo, el Comité de Programa seleccionó **23 Propuestas Nuevas** presentadas al **Concurso de Núcleos en Investigación en Ciencias Naturales y Exactas 2017**, para ser invitadas a una entrevista presencial, según lo estipulado en las cláusulas II.5., II.7.2., III.5, y III.7.2. de las Bases del Concurso. Además, fueron invitadas las **3 Propuestas de Renovación** admisibles que según lo estipulado en el punto III.5 de las Bases del Concurso, pasan directamente a la etapa de entrevistas.

Las Propuestas seleccionadas para presentarse a la etapa de entrevistas, además de las Propuestas de Renovación, clasificadas según el puntaje obtenido en esta etapa del concurso, son las siguientes:

Nº	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta	Promedio Total Obtenido
Propuesta de Renovación	Martín	Reich	Millennium Nucleus for Metal Tracing Along Subduction	103
1	Sergio Andrés	Uribe	Millennium Nucleus in Cardiovascular Magnetic Resonance	111,8
2	Andreas	Wiese	Millennium Nucleus Algorithms for Contemporary Challenges in Society	111,8

N°	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta	Promedio Total Obtenido
3	Gino	Casassa	Millennium Nucleus in glacial water resources and hazards	117,5
4	Patricia Iván	Moreno	Millennium Nucleus Paleoclimate	129,2
Propuesta de Renovación	Alexándér	Quacs	"Millennium Nucleus Center for the analysis of partial differential equations(CAPDE)"	136,5
5	Renato Ruben	Contreras	Millennium Nucleus Interdisciplinary Center for Green Chemistry : CEQUIV	137,1
6	Maritza Angélica	Páez	Millennium Nucleus: Corrosion Science and Protection of Materials	137,8
7	Néstor	Escalona	Millennium Nucleus on Catalytic Processes toward Sustainable Chemistry	143,3
8	Enrique Javier	Munoz	Millennium Nucleus for Light-Matter Interactions in Nanomaterials	147,3
9	Margarita	Calvo	Millennium Nucleus for the Study of Pain (MiNuSPain)	150,3
10	Lucas Alejo	Cieza	Millennium Nucleus on Laboratory Solid-state astrophysics	153,5
11	Miguel Luis Angel	Concha	Millennium Nucleus of Developmental Tissue Mechanics	153,95
12	Alejandro	Perez	Millennium Nucleus for Study and Conservation of Deep Reef Ecosystems	161,5
13	Rafael Andrés	Medina	Millennium Nucleus on Emerging Pathogens, Infections and Climate Change (EPICC)	163
14	Alejandro Antonio	Jara	Millennium Nucleus Center for the Discovery of Structures in Complex Data	163,1
15	Marcelo Michel	Rivadeneira	Millennium Nucleus in Paleobiology of Earth-Life Transitions (PELT)	170,5
16	MAURICIO	LIMA	Millennium Nucleus on Population Dynamics, Global Change, and Political Instability	172
17	Daniel Gonzalo	Paredes	Millennium Nucleus Biology of Intestinal Microbiota	174,6

N°	Nombres del Postulante	Apellido Paterno del Postulante	Nombre de la Propuesta	Promedio Total Obtenido
18	Francisco Esteban	Melo	Millennium Nucleus on Physics of Complex Media	175,1
19	Jose Manuel	Munita	Millennium Nucleus on Interdisciplinary Approach to Antimicrobial Resistance	176,5
20	Marcela de Lourdes	Peña	Millennium Nucleus Interdisciplinary Centre for Developmental Neuroscience	179,7
21	Tassilo Andreas	Reisenegger	Millennium Nucleus Interdisciplinary Center for Astro-Particle Physics (i-CtA)	180,3
Propuesta de Renovación	Andrés	Chávez	Millennium Nucleus Biology of Neuropsychiatric disorders- NuMIND	188,5
22	Humberto	Palza	Millennium Nucleus on Smart Soft Mechanical Metamaterials.MN-S2M3	200
23	Herman	Silva	Millennium Nucleus in Epigenomics	202

Esta selección se fundamenta en el **Anexo 2**.

Firmado por Pierre Braunstein
el 2018-02-12 17:52:45 UTC

Pierre Braunstein

Firmado por Hans-Joachim Freund
el 2018-02-13 07:23:12 UTC

Joachim Freund

Firmado por Jorge Galan
el 2018-02-12 18:21:12 UTC

Jorge Galán

Firmado por Jean-Frédéric Gerbeau
el 2018-02-12 18:02:43 UTC

Jean-Frédéric Gerbeau

Firmado por Stuart Ryder
el 2018-02-12 22:15:35 UTC

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el 2018-02-12 20:15:35 UTC

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el 2018-02-13 15:41:22 UTC

Michael Willig

Santiago, 12 de febrero de 2018

ANEXO 1: PUNTAJE OBTENIDO POR LOS POSTULANTES

Nº	Type	Name of the Proposal	PI Last Name	40% Criterion #1 Written Proposal Grade	10% Criterion #2 Plans for the technological and scientific diffusion and outreach	50% Global Criteria Considerations	Final Grade	Invited for the Interview? YES/NO/Need more Information.
144	Renewal	Millennium Nucleus for Metal Tracing Along Subduction	Reich	103	n/a	n/a	103	Yes
174	New	Millennium Nucleus in Cardiovascular Magnetic Resonance	Uibe	112	120	110	111.8	Yes
185	New	Millennium Nucleus Algorithms for Contemporary Challenges in Society	Wiese	112	120	110	111.8	Yes
31	New	Millennium Nucleus in global water resources and hazards	Coarasa	112.5	120	115	117.5	Yes
74	New	Millennium Nucleus in Microbiology	Morano	130.5	140	124	139.2	Yes
143	Renewal	Millennium Nucleus Center for the analysis of partial differential equations (CAPDE)	Guruz	136.5	n/a	n/a	136.5	Yes
30	New	Millennium Nucleus Interdisciplinary Center for Green Chemistry (CEGRIU)	Castro	136.5	140	135	137.1	Yes
28	New	Millennium Nucleus: Carbon Science and Protection of Inorganic	Escobar	139.5	140	140	140	Yes
40	New	Millennium Nucleus on Catalytic Processes toward Sustainable Chemistry	Escobedo	145.75	150	140	145.3	Yes
81	New	Millennium Nucleus for Light-Matter Interactions in Nanomaterials	Munoz	149.5	150	145	147.3	Yes
18	New	Millennium Nucleus for the Study of Pain (MUNUSPAIN)	Carro	150.75	150	150	150.3	Yes
27	New	Millennium Nucleus on Laboratory Solid-state Astrophysics	Cieba	152.5	150	155	153.5	Yes
29	New	Millennium Nucleus of Developmental Tissue Mechanics	Chencho	156.125	115	160	153.95	Yes
32	New	Millennium Nucleus for Study and Conservation of Deep Reef Ecosystems	Perez	160	225	150	161.5	Yes
72	New	Millennium Nucleus on Emerging Pathogens, Infections and Climate Change (EPICC)	Medina	163.75	150	165	163	Yes
58	New	Millennium Nucleus Center for the Discovery of Structures in Complex Data	Jara	164	200	165	165.1	Yes
104	New	Millennium Nucleus on Paleobiology of Earth-Like Transients (PELT)	Rivadeneira	170	200	155	170.5	Yes
64	New	Millennium Nucleus on Population Dynamics, Global Change, and Political Instability	UMA	173.75	275	150	172	Yes
90	New	Millennium Nucleus Biology of Invasive Microbiota	Paradas	174	200	170	174.6	Yes
74	New	Millennium Nucleus on Physics of Complex Media	Melo	174.5	170	175	175.1	Yes
80	New	Millennium Nucleus on Interdisciplinary Approach to Antimicrobial Resistance	Munilla	177.5	180	175	174.5	Yes
92	New	Millennium Nucleus Interdisciplinary Center for Developmental Neurogenesis	Pardo	180.5	180	185	179.7	Yes
100	New	Millennium Nucleus Interdisciplinary Center for Astro-Particle Physics (ICPA)	Reisenegger	182	190	175	180.3	Yes
42	Renewal	Millennium Nucleus Biology of Neoplastic Genetic Disorders: MUNAD	Chavez	186.5	n/a	n/a	186.5	Yes
87	New	Millennium Nucleus on Smart Soil Mechanical Interactions: MINSOIL3	Roca	200	200	200	200	Yes
117	New	Millennium Nucleus in Epigenetics	Siva	217.5	200	190	202	Yes
103	New	Millennium Nucleus on Interactions, Diversity, Ecology and Sustainability	Aranda	150	250	300	235	Yes
17	New	Millennium Nucleus on Computational Materials Science	Cardenas	163	250	300	236.2	Yes
22	New	Millennium Nucleus of Applied Neurochemistry (NUMNA): Monoaminergic system in insects as target of agronomics	Compassano	215.5	250	255	237	Yes
25	New	Millennium Nucleus of Host-Microbiota Integrative Biology	Carthagea	218	250	255	237.7	Yes
108	New	Millennium Nucleus for the Mathematical Analysis of Control Problems	Gerpa	167.5	120	325	241.5	Yes
69	New	Millennium Nucleus on River Science for sustainable management - Rivers	Ruiz	175	250	275	242.9	Yes
11	New	Millennium Nucleus for Numerical Analysis of Partial Differential Equations	Mora	176	150	315	242.9	Yes
31	New	Millennium Nucleus for Antarctic Research	Burgar	177.5	120	325	245.5	Yes
107	New	Millennium Nucleus Water and Energy: Rural Communities	Castro	180	140	320	246	Yes
119	New	Millennium Nucleus of Nonlinear Optics of Liquid Crystals: Synthesis, Dynamics and Applications (NUNON-CL)	Soler	185.5	220	300	246.2	Yes
84	New	Millennium Nucleus on Graph Theory and Extremal Combinatorics	Stein	180	200	310	247	Yes
102	New	Millennium Nucleus on Gravity in the Strong Regime	Oliva	170	210	305	247.5	Yes
91	New	Millennium Nucleus in Acute Respiratory Critical Illness (ARCII)	Rubin	246	180	265	250.9	Yes
132	New	Millennium Nucleus in Ecophysiological of Phytoplankton Blooms	Yáñez	192.5	250	300	252	Yes
47	New	Millennium Nucleus of the Anthropocene	Carro	195	320	300	253	Yes
71	New	Millennium Nucleus Hydro-meteorological Predictability in Mountain Regions	MacFle	196	160	300	253.4	Yes
82	New	Millennium Nucleus on Chaotic Dynamical Systems	Nivas	203	180	320	255	Yes
41	New	Millennium Nucleus for Transport and Sustainable Behavior	Fernandez	203.75	180	320	256.5	Yes
54	New	Millennium Nucleus on Astrochemistry	Instituto	211	150	320	259.4	Yes
128	New	Millennium Nucleus Environment and Wood Quality (NEWOTQ)	Vallenuela	211.25	225	305	259.2	Yes
6	New	Millennium Nucleus Nanobiosensors and diagnostic applications (MUNO-DIAG)	Bello	252	250	420	301.8	Yes
97	New	Millennium Nucleus Green Energy Research Center	Ramalinga Vswarathan	167	150	440	301.8	Yes
85	New	Millennium Nucleus on Materials Science for Energy Conversion	Orellana	181.5	150	430	302.6	Yes
107	New	Millennium Nucleus on Geospatial Information	Kochanez	182	150	430	302.8	Yes

42	New	Millennium Nucleus for Luminescent Biomarkers: Engineered molecules suitable for biological applications	Fuentes	182.5	150	430	303	No
139	New	Millennium Nucleus of Advanced Materials Associated with the future of Copper and National Strategic Minerals	Zagal	187.5	250	410	305	No
15	New	Millennium Nucleus of Automatic Learning for Rapid Classification of Massive Event Streams	Cabrera Vives	191	200	425	308.9	No
16	New	Millennium Nucleus of Advanced Methods for Energy Applications (AMEA)	Cardenas Ron	192.25	250	415	309.4	No
73	New	Millennium Nucleus in Advanced Methods for Hydrogen Generation	Meka	209	180	400	311.4	No
78	New	Millennium Nucleus for the Study of Obesity	Morali	211.5	250	410	314.5	No
48	New	Millennium Nucleus in Drug-Microbiome-Host Interaction	García Cortés	216.5	200	420	316.4	No
15	New	Millennium Nucleus Dietary Supplements in Neuronal Protection and Repair	Conrillo	216.5	100	440	316.5	No
131	New	Millennium Nucleus of Vertebrate Fossil Record and Evolution	Vargas	217.3	130	430	317	No
34	New	Millennium Nucleus on Metabolic Syndrome: Insights from the Brain	Del Rio	220.5	135	455	319.2	No
116	New	Millennium Nucleus of Quantum Fluids	Schneider	221.5	300	405	321.5	No
137	New	Millennium Nucleus on solar sailing	Yáñez	222.5	180	430	322	No
19	New	Millennium Nucleus on New Antimicrobial Therapies	Bueno	222.5	200	425	322.9	No
110	New	Millennium Nucleus in Dynamics of Terrestrial Aquatic Environment	Sosa Avila	223.75	250	410	323.5	No
67	New	Millennium Nucleus in Pharmacology and Archeology: Looking into the past for understanding the effects of climate	Malibonaco	226	190	430	324.4	No
138	New	Millennium Nucleus in Information	Yusaif	227.5	300	325	325	No
18	New	Millennium Nucleus on Open Innovation approach in food processing, design and optimization for health and well	Ramirez	226	250	420	325.4	No
114	New	Millennium Nucleus on Operations Research for the Integration of Sustainable Energy (MORISE)	Souza	238.75	250	410	325.5	No
118	New	Millennium Nucleus in Musculoskeletal System: CrossTalk.MUSC	Silaram	227	250	420	325.8	No
39	New	Millennium Nucleus for Research and development of materials for energy production and storage	Estar	239.5	200	420	326	No
140	New	Millennium Nucleus for Biomimetic Research: Structures, Evolution, Engineering & Design (SRED)	Zarate	227.5	200	420	326.8	No
12	New	Millennium Nucleus for Computational Astrophysics (NACA)	Podillo	240	200	420	327.6	No
83	New	Millennium Nucleus for Renewable Energy	Wallerstein	240	300	375	327.5	No
54	New	Millennium Nucleus of Plant Nephrotoxicity in Volcanic Soils	Reyes	242.5	200	430	327.8	No
102	New	Millennium Nucleus of Astronomical Technology: Interferometry and Spectroscopy	Vonal	245	270	405	327.5	No
129	New	Millennium Nucleus in Integrative Pathway Modelling	Podraski	246.25	250	410	328.3	No
33	New	Millennium Nucleus for the Neurosciences of Poverty and Inequality (NPI)	Crosby	247	180	430	328.8	No
65	New	Millennium Nucleus in Risk on Critical Infrastructures in the Andean Context	Gomez	247	200	420	328.8	No
121	New	Millennium Nucleus in abiotic stress for sustainable agriculture	Stange	227.875	177.5	440	328.9	No
95	New	Millennium Nucleus for the eco-genomic modeling of fruit and forest tree species	Piñero	247.5	250	410	329	No
111	New	Millennium Nucleus RW: Treatment and Reuse of Industrial Wastewater	Sobczak	248.75	300	325	329.5	No
130	New	Millennium Nucleus of Nanobiotechnology for Degenerative Diseases (NANOBDZ)	Varela	240	400	395	330.5	No
37	New	Millennium Nucleus of Microbiome Evolution	Donado	251.25	225	415	330.5	No
61	New	Millennium Nucleus: Decoding Complex Inherited Phenotypes of Rare Disorders (DECIPHER)	Repelito	233.5	125	450	330.9	No
30	New	Millennium Nucleus in Sports Screening Platform of Rare Disorders in Chile	Ceul	252.5	200	420	331	No
80	New	Millennium Nucleus in Data Health: merging disciplines to understand the interaction between human, animal and	Hannigan-West	253.5	200	420	331.4	No
113	New	Millennium Nucleus: Impact of Gastrointestinal Chemosensitization on the adult immune system	Sarmiento	244	180	425	335.6	No
127	New	Millennium Nucleus of Space Plasma Physics	Vadivira	244	180	425	336.1	No
125	New	Millennium Nucleus in Disease and Health (MIDAS)	Itencoro	251	135	440	336.3	No
7	New	Millennium Nucleus of Aquaculture Research and Innovation	Bellani	251.5	200	425	337.5	No
112	New	Millennium Nucleus of Epithelial Physiology	Manzana	257.5	250	430	338	No
24	New	Millennium Nucleus of Forest Health Research in Biotic and abiotic Interactions in Native Species (PHINS)	SAVIGNES	257.5	275	415	338	No
117	New	Millennium Nucleus Biomass Combustion and Atmospheric Pollution	Carecadas	260	150	440	339	No
55	New	Millennium Nucleus of Applied Biogeography to Conservation and Management of Marine Resources (BIOMA)	Padraz	265.75	300	405	340	No
4	New	Millennium Nucleus for the Invisible Galaxy (IMIG)	Aramba	260.5	200	435	341.9	No
28	New	Millennium Nucleus in Neuroconnectivity Regeneration ReConnect	Revera	273.5	450	375	342.5	No
105	New	Millennium Nucleus on Earth and Small Stars (MESS)	Jenkins	275	250	415	343.2	No
59	New	Millennium Nucleus in Neuroconnectivity Regeneration ReConnect	Griffin	276.75	110	445	344.5	No
8	New	Millennium Nucleus of advanced research in drying and related heat and mass transfer processes on wood	Antanas	262.25	420	400	344.9	No
2	New	Millennium Nucleus for the Evolution of Galaxies and AGN (MEGA)	Anévalo	262.5	250	430	345	No
133	New	Millennium Nucleus in Soils: Geology and Geophysics	Vera	262.5	370	420	345	No
42	New	Millennium Nucleus for Topological Research in Oncology (MATHION)	Luis	278	300	410	346.2	No
46	New	Millennium Nucleus Adaptation and Compensation in Cell-Ecosystem Interactions	Caro Salvo	280	150	440	347	No
3	New	Millennium Nucleus for Complex Systems	Keymer	283	125	445	349	No
47	New	Millennium Nucleus for the study of Insulin Insulin in Complex Disorders (INSIC ODE)	Arakji	288.5	150	440	351.4	No
52	New	Millennium Nucleus on developmental programming by oxygen (DEFOXY)	Herrera	288.5	200	430	351	No
76	New	Millennium Nucleus Center for HY/AIDS: Integral Research (CHAI)	Soto	290	200	435	351	No
120	New	Millennium Nucleus in Nonlinear Mathematical Problems and Applications	Jiménez	292.5	200	430	352	No
45	New	Millennium Nucleus: Benchmarks for 3D printing Construction: Center for a BioHabitat I	Gadilla	295	200	430	353	No
135	New	Millennium Nucleus in Sustainable Environment	Wu	300	350	405	357.5	No
68	New	Millennium Nucleus in Neuroendocrine Integration of Energetic Metabolism (NUNEIE)	MAJURO	300.5	250	430	360.2	No
63	New	Millennium Nucleus in Microbiome and Neuroimmunology of Salmónidas	Levicón	302.5	250	430	361	No
75	New	Millennium Nucleus in Intelligent Decisions and Information Systems	Meligo	302.5	350	410	362	No
115	New	Millennium Nucleus on metabolomics and health beneficial properties from Clean: food plants	Schmedo	305	300	430	367	No
70	New	Millennium Nucleus for research in Autistic Spectrum Disorder (NUMEA)	Muzalo	305.75	100	470	367.3	No
124	New	Millennium Nucleus of Applied Chronobiology	Fortes	308.5	250	440	368.4	No

28	New	Millennium Nucleus: Calcium Receptor, Sensor Research Center for Chronic Diseases and Inflammation	CHUBENY	269.75	180	460	371.9	No
29	New	Millennium Nucleus in Distributed Energy Solutions	Jirinec	113.3333333	370	425	374.8333333	No
30	New	Millennium Nucleus: Open System Dynamics in Quantum Physics and Biophysical Processes	Rebaldado	317.5	360	420	376	No
31	New	Millennium Nucleus in smart technologies for remote sensing and communications with nanosatellites	Diaz	317.5	170	465	376.6	No
32	New	Millennium Nucleus in Biodiversity of Aquatic, sub-Antarctic Ecosystems	Gonzalez Weylor	322.5	300	440	379	No
33	New	Millennium Nucleus on inequality	Humbert	322.5	300	440	379	No
34	New	Millennium Nucleus of Microbiota-Associated Disorders (MIRIAD)	Pino	325	300	440	380	No
35	New	Millennium Nucleus on Hypertension, renal and Cardiovascular Disease	Cervidal	327.5	400	420	381	No
36	New	Millennium Nucleus for study of Myopathies	Carrión	327.5	300	440	381	No
37	New	Millennium Nucleus on Holography and Quantum Gravity	Crea	327.5	350	430	381	No
38	New	Millennium Nucleus on 3D Cell Scale Aquaculture for sustainable Development	Rodriguez	328.75	150	470	381.5	No
39	New	Millennium Nucleus of Wound Repair, Treatment & Health Worth	Caceres	328	180	465	381.7	No
40	New	Millennium Nucleus of Neuroimmunology	Maccioni	330	200	460	382	No
41	New	Millennium Nucleus for the design of sustainable and resilient ag-food systems under climate change scenarios in	Damer	332.5	300	440	383	No
42	New	Millennium Nucleus on Star Formation	Stutz	332.5	250	450	383	No
43	New	Millennium Nucleus-Advanced Research in Oral Sciences (MKA-ROS)	Gamonzi	335	200	460	384	No
44	New	Millennium Nucleus for Integrated and Transdisciplinary Research of Marine Coastal Processes (Integrak)	Hidalgo	335	300	440	384	No
45	New	Millennium Nucleus of Aquilion, Dementia and Stress (ANDES)	Delano	339.5	175	480	388.3	No
46	New	Millennium Nucleus of Ocean Waves and Marine Energy Conversion	Hernandez	350	350	430	390	No
47	New	Millennium Nucleus of Abolitionism	Guilamán	347.5	135	485	390	No
48	New	Millennium Nucleus Interdisciplinary Center for Sustainability of the Aracuanian Lake Ecosystem (CISBA)	Corrado	348.75	300	450	392.5	No
49	New	Millennium Nucleus in Microbiome Composition and Dynamics in Children Dental Health and Disease	Orban	377.5	300	430	396	No
50	New	Millennium Nucleus for Galactic Archeology	Manaco	382	400	415	400.3	No

ANEXO 2

FUNDAMENTACIÓN DE LA SELECCIÓN DE PROPUESTAS

A. Propuestas seleccionadas para entrevista

1. Name of the Proposal: Millennium Nucleus in Cardiovascular Magnetic Resonance
Applicant's last name: Uribe

This is a very strong proposal. Its main strength is to be genuinely pluridisciplinary: the expertise of biomedical engineers, medical doctors and mathematicians are put together to tackle an important problem of public health. The methodological side is also very strong, with in particular the use of recent and promising mathematical techniques (compressed sensing,...). The training plan is well-thought and the international network of the consortium is very good. Funding this proposal can really make a difference in research, training and for the society.

2. Name of the Proposal: Millennium Nucleus Algorithms for Contemporary Challenges in Society
Applicant's last name: Wiese

This is a very strong proposal, led by a group of young and promising mathematicians and computer scientists. The basic science part is very solid on various important and timely topics. The project also has precise objectives on applications that may have a real impact on the society. The PC strongly recommends interviewing this Nucleus.

3. Name of the Proposal: Millennium Nucleus in glacial water resources and hazards
Applicant's last name: Casassa

This is a relatively large multidisciplinary team consisting of a variety of scientists from different institutions, including several outside the Santiago metropolitan area. This nucleus aims to predict the response of glaciers to climate change and determine possible consequences for water resources and hazards, a topic of great relevance for Chile and elsewhere. The PI has an outstanding track record and has the stature for leading a successful nucleus capable of carrying out high-quality work at the international level. The team is well-balanced in terms of experience, age, gender, etc. all of which is in compliance with current MSI policies. The proposal is written in a convincing and succinct fashion and given the previous merits of different team-members (two of them, including the PI, have an outstanding track record), interviewing is strongly recommended.

4. Name of the Proposal: Millennium Nucleus Paleoclimate
Applicant's last name: Moreno

This outstanding multi-disciplinary young team of international stature will take advantage of the occurrence of high-resolution sediment records in lakes and bogs, together with glacial deposits and volcanic ash markers, etc. in Patagonia and study multiple sensors of past climatic change along north-south and east-west transects. Data obtained from these terrestrial proxy records will be utilized for numerical models to explore the mechanisms underlying paleoclimate phenomena. Special attention will be given to the last glacial-interglacial cycle because deposits of that age are ubiquitous and well preserved in the geologic record providing a time frame for understanding processes and impacts of

climate variability and trends most relevant for the recent past. Results will throw light on future climate scenarios and their possible impact on society. The subject of paleoclimate is of particular relevance in the context of present climate changes occurring today. Studies of this type have been mostly carried out in regions of the northern hemisphere, hence the present proposal attempts to fill an important gap of knowledge. This proposal brings together highly qualified individuals, all embedded in a large international network, that have the capacity to carry out a project for which Chile (Patagonia) has unique geographic advantages and that will contribute important data required to better understand Quaternary paleoclimate changes on a global scale. The methodologies described, although not particularly novel, represent state of the art procedures. Previous experiences and collaborations among members of this nucleus have produced great results. From all of the above the PC does not hesitate to strongly recommend interviewing the present proposal.

5. Name of the Proposal: Millennium Nucleus Interdisciplinary Center for Green Chemistry : CEQUIV

Applicant's last name: Contreras

Considering the huge international interest and need to develop Green Chemistry, this initiative is most welcome. Various groups are interested in these issues but the global approach of this Nucleus is very promising. It capitalizes on the achievements of the previous Nucleus CLIS: Interdisciplinary Center for Ionic Liquids that covered only parts of the program on Green Chemistry. The present expansion will benefit from the various interactions generated in the past between many of the scientists involved. Both this past experience and the quality of the team are excellent signs for a potentially highly successful Nucleus. This proposal should be interviewed.

6. Name of the Proposal: Millennium Nucleus: Corrosion Science and Protection of Materials

Applicant's last name: Pérez

This Nucleus would promote and establish strong interactions between disciplines related to the central theme or Corrosion and protection. It can be expected that effective communication and exchange/transfer of knowledge between the areas of Metallurgy, Chemistry, Physics and Biology will be very fruitful. Such a Nucleus will be unique for Chile and expected to have a considerable impact on fundamental and applied science with major economic consequences. This proposal should be interviewed.

7. Name of the Proposal: Millennium Nucleus on Catalytic Processes toward Sustainable Chemistry

Applicant's last name: Escalona

This is a very strong proposal dealing with topics of considerable fundamental and applied relevance. The team assembled is very well suited to tackle the ambitious objectives of developing catalytic processes towards sustainable chemistry for a better use of natural and renewable resources. This Nucleus should be interviewed.

8. Name of the Proposal: Millennium Nucleus for Light-Matter Interactions in Nanomaterials

Applicant's last name: Muñoz

This is a strong proposal on the study of the electronic and optical properties of two-dimensional and topological materials and their heterostructures. The team assembled appears highly suited to the objectives and this proposal should be interviewed.

9. Name of the Proposal: Millennium Nucleus for the Study of Pain (MINuSPain)
Applicant's last name: Calvo

This Center has very strong science, is well justified, has high clinical significance and should progress to the interview stage. It would be competitive for interviewing.

10. Name of the Proposal: Millennium Nucleus on Laboratory Solid-state astrophysics
Applicant's last name: Cieza

Given the involvement of 2 key players in the MAD Nucleus, the PC wasn't sure how they would follow that up without making it seem like just a renewal. The PC is impressed by what they have come up with, and the way these 3 strands of dust modelling, dust experiments, and cosmic dust in the form of meteorites have been linked. This proposal definitely warrants an interview.

11. Name of the Proposal: Millennium Nucleus of Developmental Tissue Mechanics
Applicant's last name: Concha

This is a strong proposal by a very competitive research team to address an important problem leveraging state of the art experimental approaches. While there are some minor concerns about its broad scope, the proposal is still very strong and therefore the team should be invited to participate in the final round.

12. Name of the Proposal: Millennium Nucleus for Study and Conservation of Deep Reef Ecosystems
Applicant's last name: Pérez

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the assembled team and the scientific questions that they address are first class, with the potential to make incisive contributions to applied and basic science that will enhance the well-being of Chile's people.

13. Name of the Proposal: Millennium Nucleus on Emerging Pathogens, Infections and Climate Change (EPICC)
Applicant's last name: Medina

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommends interviewing the project at a high priority. The proposal made a strong case that the proposed research would advance fundamental scientific knowledge. It is truly transdisciplinary in scope and approach. Proposed mechanisms for education, training, outreach, and networking were balanced and good. The project addresses an issue of critical importance to Chile and the world.

14.Name of the Proposal: Millennium Nucleus Center for the Discovery of Structures in Complex Data

Applicant's last name: Jara

This is a very nice proposal, with a strong fundamental research direction in nonparametric statistics that can have a strong impact in many applications. Its main flaw is the lack of detail about the real data that will be used to test the methods.

The consortium has a very good international visibility, and a good balance between young and senior researchers. The absence of women in the core group is a pity. The PC nevertheless recommends the project for interviewing.

15.Name of the Proposal: Millennium Nucleus in Paleobiology of Earth-Life Transitions (PELT)

Applicant's last name: Rivadeneira

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommends interviewing the project with high priority. The team is well prepared and represents a diverse geographic cross-section of the country. Moreover, the scientific community of paleobiologists in Chile would be advanced considerably by such support. Equally important, the proposal addresses a unique scientific opportunity to understand how past environmental changes affected multiple aspects of biodiversity, and to use this knowledge to guide management and stewardship in the 21st Century.

16.Name of the Proposal: Millennium Nucleus on Population Dynamics, Global Change, and Political Instability

Applicant's last name: Lima

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommends interviewing the project at a high level of priority. The PC thinks the general theme and focus of the nucleus are outstanding, but insufficient exposition of quantitative approaches, allocation of effort into research lines, or distribution of responsibilities among scientific staff combine to dampen the enthusiasm of the PC for this project.

17.Name of the Proposal: Millennium Nucleus Biology of Intestinal Microbiota

Applicant's last name: Paredes

This is a very strong proposal by a young team to address an important problem. The experimental approaches are creative and the potential for international impact is high. This team should be invited for the final round.

18.Name of the Proposal: Millennium Nucleus on Physics of Complex Media

Applicant's last name: Melo

This is a very good proposal that would have a chance under regular conditions of a success rate of 30%. The PC, taking all referee comments into account, decided that the proposal should make it to the final round.

19.Name of the Proposal: Millennium Nucleus on Interdisciplinary Approach to Antimicrobial Resistance

Applicant's last name: Munita

This is a strong proposal addressing an extremely important public health issue and therefore the investigators should be invited to the final round.

20.Name of the Proposal: Millennium Nucleus Interdisciplinary Centre for Developmental Neuroscience

Applicant's last name: Peña

This cognitive neuroscience proposal seems to be sound and the international advisory board includes pioneers in this area, such as Stanislas Dehaene and Ghislaine Dehaene-Lambertz. The proposed studies appear to be mostly feasible, are focused on an interesting problem (the neural basis of language learning) and could have immediate translation to human subjects related to improvement in reading comprehension and language use, but the feasibility and overall impact of the proposal is not fully apparent from the brief format available. The PC thinks this group deserves further consideration and should be invited for interview.

21.Name of the Proposal: Millennium Nucleus Interdisciplinary Center for Astro-Particle Physics (i-CIA)

Applicant's last name: Reisenegger

The PC really likes this Nucleus proposal as it ticks so many boxes. It is truly multidisciplinary in a non-contrived way, and seeks to leverage Chile's early involvement in a fast-growing area of astrophysics. The ALMA experience highlights how Millennium Nuclei established at the right time, and with the right team of talented researchers, can transform Chile from a mere host to a leader and valued partner. The PC believes this proposal has similar potential, and is certainly worthy of an interview.

22.Name of the Proposal: Millennium Nucleus on Smart Soft Mechanical Metamaterials MN-S2M3

Applicant's last name: Palza

In view of the referee comments as a whole, this proposal should go to the interview stage.

23.Name of the Proposal: Millennium Nucleus in Epigenomics

Applicant's last name: Silva

This is a well-crafted proposal with a scientific focus adequate for a nucleus, with realistic goals and achievable objectives. The P.I. is a well-respected scientist and is well plugged into the international community of genomic/plant scientists. The proposal is a typical "system biology" exercise that will result in high quality information that will populate relevant data bases, could serve as the bases for future experiments, but that it is unlikely to lead to major breakthroughs. The main potential contribution of this nucleus, however, is the building of critical infrastructure/know how in areas of potential relevance to the Chilean economy. Although it is unclear how ultimately this proposal will compete with others, they should be invited for the final round.

B. Propuestas no seleccionadas para entrevista, con calificación "Bueno"

24. Name of the Proposal: Millennium Nucleus IDEAS: Interactions, Diversity, Ecology and Sustainability

Applicant's last name: Rezende

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC advises that the nucleus not be interviewed. Although PC generally concurred that the vision of the proposal was good, significant concerns were expressed about the research in terms of design flaws and a mismatch between the temporal domain of focal questions and the sampling extent in time (3 years).

25. Name of the Proposal: Millennium Nucleus on Computational Materials Science

Applicant's last name: Cárdenas Valencia

By promoting and developing extensive collaboration between national and international scientists involved in computational materials science and in the engineering of new materials, this Nucleus has the potential make a big national and international impact. It brings together highly qualified scientists and aims at addressing important and current challenges related to the search for new materials in the energy sector. Even though the proposal is convincing, in view of the very strong competition, it could not be recommended for the interview by the PC.

26. Name of the Proposal: Millennium Nucleus of Applied Neurochemistry (NUMINA). Monoaminergic system in insects as target of agronomic interest

Applicant's last name: Campusano

This proposal is focused, interdisciplinary and relevant to agricultural science. The experimental plan is very nicely formulated, and leads from basic entomology, through neurochemistry, to rational drug design. The only caveat is that focus on the monoamine system might not be the best choice for development of novel agricultural insecticides, given the conservation of these molecules in humans, but any choice of target could be criticized, and the platform developed could be used again and again for additional targets. Even though the PC thinks that this proposal deserves consideration, in view of the very strong competition, it could not be recommended for the interview by the PC.

27. Name of the Proposal: Millennium Nucleus Center of Host-Microbiota Integrative Biology

Applicant's last name: Castañeda

Although there is enthusiasm for the topic that the investigators propose to address, the broad and poorly integrated set of goals combined with the competitive nature of this area of research reduces enthusiasm for this proposal somewhat. This proposal may not be competitive and the PC decided that it would be preferable not to invite them for the final round.

28. Name of the Proposal: Millennium Nucleus for the Mathematical Analysis of Control Problems

Applicant's last name: Cerpa

This project gathers a group of young researchers in theory of control and numerical analysis. Some of them have a good track record and international visibility. The questions they propose to address are relevant and interesting, although classical. Multidisciplinarity could have been strengthened by the addition of members external to the field of control and numerical analysis. Overall, this is a good proposal, but in view of the very strong competition, it could not be recommended for interview by the PC.

29. Name of the Proposal: Millennium Nucleus Earthquakes of Subduction
Applicant's last name: Ruiz

This young team is very good and capable of carrying out research of excellent quality, which is visible at the international level. The topic of study (subduction-related earthquakes) is of utmost relevance within the Chilean social context and the training of young scientists is a modular issue considered in the proposal. The team is quite small (only 3 associates), does not include women, and is entirely hosted within the Santiago Metropolitan area. Given the strong level of competition, and the fact that this group is relatively small and does not comply entirely with all existing policies, the PC does not recommend interviewing this proposal.

30. Name of the Proposal: Millennium Nucleus on River Science for sustainable management – RiverS
Applicant's last name: Mao

This project is truly multidisciplinary and team members seem to be able to carry out the work outlined, which focuses on integrative river science, a topic of relevance to Chile, as well as on a global scale. A major flaw of the nucleus project is that the issue of climate change and its negative impact on precipitation regimes and extreme weather events, today a major issue of global concern, has only been touched peripherally. This seems quite awkward in the context of the declared practical aim of this nucleus to produce a science-based framework for improving river management practices in the future. Given the tight competition, the PC did not consider that this proposal will rank among the most outstanding, hence, invitation for interview is not recommended.

31. Name of the Proposal: Millennium Nucleus for Numerical Analysis of Partial Differential Equations
Applicant's last name: Bürger

The project is cleverly organized around a young and promising team coming from 5 universities, with 4 more senior researchers in back-up. The consortium has been extremely active over the last few years at organizing an impressive number of ambitious events (conferences, summer schools), some of them with an international impact. Some of the members have strong international connections. Nevertheless, the project is too vague about the multidisciplinary aspects and its possible impact on the society. Despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

32. Name of the Proposal: Millennium Nucleus for Antarctic Research
Applicant's last name: Cordero

This is a well written proposal and the team seems capable of getting "the job done", as outlined. Although the PIs have a very good track record, the PC does not think that they are truly outstanding (if compared to other young scientists globally), and they will not be competitive enough to be among the top 10 % of this year's MSI competition.

33.Name of the Proposal: Millennium Nucleus Water and Energy: Rural Communities
Applicant's last name: Sáez Huefchapan

Although this is an excellent team in terms of previous academic achievement by several of its individual members, and the nucleus also addresses an important problem of inequality in Chile (lack of sufficient access to basic commodities such as water and electric energy in rural communities), several incongruences in regard to the main goals and "holistic" approach of the project and the range of expertise of its members were identified. While most of its members are specialists in electrical engineering areas, water management experts are under-represented, and social and economic experts are almost entirely absent. Hence, there is a notorious mismatch between the declared "holistic" approach and the expertise of the team. Given the strong level of competition, funding cannot be recommended at this point.

34.Name of the Proposal: Millennium Nucleus of Nonlinear Optics of Liquid Crystals: Synthesis, Dynamics and Applications (NUMION-CL)
Applicant's last name: Soler

The proposal has a strong scientific background bringing together chemists, physicists and mathematicians. The PC does not recommend invitation for interview.

35.Name of the Proposal: Millennium Nucleus in Graph Theory and Extremal Combinatorics
Applicant's last name: Stein

This is a very nice proposal, with well-defined and ambitious objectives, in research, training and outreach. The scientific program "only" focuses on graph theory and combinatorics, and the size of the consortium is very small. As a consequence, the pluridisciplinarity of the project and its potential impacts on the society are rather low. Thus, despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

36.Name of the Proposal: Millennium Nucleus on Gravity in the Strong Regime
Applicant's last name: Olivá

Although this represents a very good to excellent proposal, the PC does not consider it competitive enough for an interview.

37.Name of the Proposal: Millennium Nucleus in Acute Respiratory Critical Illness (ARCI)
Applicant's last name: Bruhn

This proposal has assembled a strong clinical team but is more focused on the laudable goal of improving clinical care than scientific discovery.

38.Name of the Proposal: Millennium Nucleus in Ecophysigenomic of Phytoplankton Blooms
Applicant's last name: Vásquez

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommends funding of the project at a medium level of priority. The research addresses important themes from the perspectives of foundational science and applied science, and uses state

of the art molecular techniques to identify taxonomic, genetic, and functional diversity of microbial communities. The PC only concern was the absence of a modeler or statistician in the group of associate researchers, and the vague descriptions of quantitative approaches.

39. Name of the Proposal: Millennium Nucleus of the Anthropocene
Applicant's last name: Gayo

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, this project is worthy of funding at a medium level of priority. Its focus on social ecological dynamics during the Anthropocene, use of both empirical and theoretical constructs, and deployment of quantitative modeling are strengths of the research approach. The education, outreach, training, and networking aspects of the project are strong.

40. Name of the Proposal: Millennium Nucleus Hydrometeorological Predictability in Mountain Regions
Applicant's last name: McPhee

This is a very good young multidisciplinary team that seems to be fully capable of carrying out successfully the proposed research project. The study of climate variability and its impact on the hydrology of mountain regions of Chile with the practical objective to help society in preparing for water extremes (floods and droughts) is certainly of societal and economic relevance (availability of water for agriculture, hazard mitigation, etc.). Whether this project is truly outstanding by its novelty and consequent potential international visibility is not entirely clear. This is especially so, given the high level of this year's competition, the PC could not recommend invitation for interview.

41. Name of the Proposal: Millennium Nucleus on Chaotic Dynamical Systems
Applicant's last name: Navas

This is a good proposal of pure mathematics. Although relevant to the theory of dynamical systems, its research lines are rather classical and have no interaction with any other disciplines or societal issues. The international visibility of the consortium is fair but not outstanding. In view of the very strong competition, this proposal could not be recommended for interview by the PC.

42. Name of the Proposal: Millennium Nucleus for Transparent and Sustainable Fisheries
Applicant's last name: Fernández

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommend funding of the project with medium priority. The collaborative team is well qualified, the problem addressed by the research is critical to Chile, the scope of the proposed research is coincident with that of an MSI nucleus, and the educational, outreach, and networking objectives are realistic and attainable.

43. Name of the Proposal: Millennium Nucleus on Astrochemistry
Applicant's last name: Inostroza

While the science outcomes were not quite as tightly focused as in many other Nucleus proposals, this proposal fulfils most of the criteria for what a Millennium Nucleus is supposed to be about, by enabling inter-disciplinary research across multiple institutions, and exploiting a world-class niche for Chile. In an intensely competitive Nucleus competition, this proposal fell just outside the cutoff for proceeding to the interview stage.

C. Propuestas no seleccionadas para entrevista, con calificación "Razonable"

44. Name of the Proposal: Millennium Nucleus Environment and Wood Quality (NEWQual)
Applicant's last name: Valenzuela

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC recommend funding of the project but at medium priority. Compared to the very best applications, the proposal did not make a particularly strong case that the proposed research would advance fundamental scientific knowledge of theoretical importance.

45. Name of the Proposal: Millennium Nucleus Nanobiosensors and diagnostic applications (NANO-DIAG)
Applicant's last name: Bollo

Despite the quality of the investigators and of the research planned, this proposal could not be recommended for interview by the PC.

46. Name of the Proposal: Millennium Nucleus Green Energy Research Center
Applicant's last name: Ramalinga Viswanathan

The aim of this Nucleus to study and develop La-based perovskite type structures as tubular ReSOC modules and analyze their performance in SOEC and SOFC modes for the production of fuel and electricity, respectively, is highly relevant to current energy production challenges. This is a very challenging topic involving fundamental science and its translation into functional devices and applications in energy sector. There is also relevance to the desire by the Chilean government to promoting the use of fuel cells on vehicles for the mining industry. Despite all the positive aspects of this proposal and in view of the very strong competition, it could not be recommended for interview by the PC.

47. Name of the Proposal: Millennium Nucleus on Materials Science for Energy Conversion
Applicant's last name: Orellana

The development of fundamental research in photovoltaic materials in Chile is certainly a most valuable objective and hybrid organic-inorganic halide perovskites represent promising materials. Furthermore, energy conversion technologies, such as H₂ evolution reaction, CO₂ reduction and O₂ reduction reaction are very promising. Both these areas are directly related to current energy challenges and clearly justify the creation of a Nucleus. The diversity of competences assembled in the team appears suitable to tackle these challenges.

Despite all the positive aspects of this proposal and in view of the very strong competition, it could not be recommended for interview by the PC.

48. Name of the Proposal: Millennium Nucleus on Geospatial Information

Applicant's last name: Rodríguez Tastets

This is overall a good proposal, well focused, and with interesting potential impacts. While the expertise in the field of spatio-temporal database and urban geography is clear, the consortium is less convincing as far as satellite images and water management in agriculture are concerned. Despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

49. Name of the Proposal: Millennium Nucleus for Luminescent Biomarkers: Engineered molecules suitable for biological applications

Applicant's last name: Fuentes

Fundamental aspects and technical applications will be part of the development of new biosensors, based on rationally designed luminescent materials. The multidisciplinary combination of computation, synthesis, photophysical studies, and biological assays appears very promising. Although various groups worldwide are actively working on some of these questions, this Nucleus would consolidate diverse competences available in Chile and enhance their cross-fertilization. However, in view of the very strong competition, this proposal could not be recommended for interview by the PC.

50. Name of the Proposal: Millennium Nucleus of Advanced Materials Associated with the Future of Copper and National Strategic Minerals (MNCF)

Applicant's last name: Zagal

The quality and stature of the PIs is unquestionable and the topic dealing with Advanced Materials Associated with the Future of Copper and National Strategic Minerals is certainly most relevant to the Chilean economy. The existing collaborations with relevant industries are most welcome, although there is always a risk to be taken away from the best fundamental science that this MSI program aims at promoting. The proposal does not highlight enough the breakthroughs and innovative approaches compared to what the excellent scientists involved have already done during the past years.

51. Name of the Proposal: Millennium Nucleus of Automatic Learning for Rapid Classification of Massive Event Streams

Applicant's last name: Cabrera Vives

This is a well presented and convincing proposal on the development of new artificial intelligence to handle massive data coming from survey telescopes, a subject most relevant to Chile. Important results are expected to be produced by the multidisciplinary team assembled. However, despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

52. Name of the Proposal: Millennium Nucleus of Advanced Materials for Energy Applications (AMEA)

Applicant's last name: Cardenas Jirón

Considering the need to develop alternative forms of production and storage of clean and renewable energy, the contribution of the excellent interdisciplinary team assembled in this Nucleus offers great potential to achieve original and important results. This Nucleus

could become a unique setting at the Chilean level to tackle such strategic issues. However, in view of the very strong competition, this proposal could not be recommended for interview by the PC

53. Name of the Proposal: Millennium Nucleus in Advanced Materials for Hydrogen generation

Applicant's last name: Mejía

The scientists involved in this Nucleus come from 3 different Chilean public and private institutions, located in Santiago and Valparaíso. They have collectively produced 290 publications, received 2000 citations, received 60 projects, and mentored 10 post-docs, 15 doctoral students, 6 master's students and 59 undergraduate students. These impressive achievements give confidence on their ability to make highly significant contributions to the field of electro and photo-catalysis through the synthesis of nanomaterials, their experimental and theoretical characterization and their application for dihydrogen production. However, despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

54. Name of the Proposal: Millennium Nucleus for the Study of Obesity

Applicant's last name: Morselli

This is an outstanding interdisciplinary team with unique expertise and a well focused proposal on a clinically and public health-relevant project to explore links between autophagy, microbiome and obesity. Even though the PC thinks that this proposal deserves consideration, in view of the very strong competition, it could not be recommended for the interview by the PC.

55. Name of the Proposal: Millennium Nucleus in Diet-Microbiota-Host Interaction

Applicant's last name: Garrido Cortés

There are some strengths in the proposal, particularly the use of the TWIN-SHINE reactor to examine the effect of plant metabolites in the microbiota composition. However, weaknesses in some of the follow up experiments aimed at the study of the host response to the metabolites diminishes the enthusiasm for what would be otherwise a promising proposal.

56. Name of the Proposal: Millennium Nucleus Dietary Metabolites in Neuronal Protection and Repair

Applicant's last name: Calixto

The use of *C. elegans* to identify novel metabolites available from food sources that can be neuroprotective is a creative and potentially transformative approach to determining the effects of microbiome constituents on neuronal survival. Unfortunately, the choice of a sodium channel mutation as the trigger for cell death limits the generalizability of phenotype, and the finding that the GAD enzyme, which generates the inhibitory neurotransmitter GABA, reverses the effects of hyperexcitability seems to be a relatively expected and trivial outcome of a large set of studies. Further, if silencing a hyperactive neuron saves it from cell death, the evaluation of gene networks activated under each condition will not provide highly informative molecular data on cell death pathways that are novel. As a result, the PC considers that this proposal, although scientifically sound, does not have the breadth to make it for further consideration.

57.Name of the Proposal: Millennium Nucleus of Vertebrate Fossil record and Evolution
Applicant's last name: Vargas

The proposed research has great potential to become visible at an international scientific level and also in terms of outreach to the general public. It brings together different specialist that seem fully capable to carry out the proposed work. On the other hand, the description of training activities for students/young scientists reads quite vague and the issue of incorporating women into science is only mentioned marginally. The CVs of the PIs and associates can be judged as "very good", but not "outstanding" if compared with other groups of similar age on the international level. Given the high level of competition, this proposal could not be recommended for the interview by the PC.

58.Name of the Proposal: Millennium Nucleus on Metabolic Syndrome: Insights from the Brain
Applicant's last name: Del Río

This Center is composed of productive, relatively junior researchers who are focused on the neurobiological contributions to metabolic syndrome, a problem important to public health. The studies are all to be performed in mouse models, and if their hypothesis is correct, the outcomes could be published in strong peer-reviewed journals, although the possibilities for human translation of these findings are relatively distant. The risk is that the fundamental hypothesis is not correct, and the outcome of these studies will be descriptive and of minimal impact. Some of the expertise for causal inferences are not in place and are complex. Overall, this Center is on the edge for further consideration, but is not in the very top group.

59.Name of the Proposal: Millennium Nucleus of Quantum Fields
Applicant's last name: Schröder

Given the strong competition, this proposal should not move on to the interviews.

60.Name of the Proposal: Millennium Nucleus on solar mining
Applicant's last name: Yáñez

The important topics of this Nucleus – highly relevant to Chile – and the competences available would certainly produce new and important results. Considering the very severe competition, this proposal could not be recommended for interview by the PC, despite its positive aspects.

61.Name of the Proposal: Millennium Nucleus on New Antimicrobial Therapies
Applicant's last name: Bueno

This is a proposal lead by very well qualified scientist to pursue a research program of great public health significance. However, the unrealistic broad goals results in a research proposal that its poorly developed dampening overall enthusiasm for this application.

62.Name of the Proposal: Millennium Nucleus in Dynamics of Temperate Aquatic Environments
Applicant's last name: Sáez Avaría

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can

be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The scope of the project is too ambitious while the education, outreach, and training activities are not particularly innovative or novel. Moreover, the role of quantitative modeling and expertise related to it are not sufficiently considered in the project description, even though it is an effective tool for synthesis and integration. Finally, stronger linkages to theory would have enhanced the project, and provided a base for comparative approaches.

63.Name of the Proposal: Millennium Nucleus Palaeoecology and Archaeology: Looking into the past for understanding the effects of climate change on biota and human societies

Applicant's last name: Maldonado

This proposal aims to study a topic that is of great interest (climate change since the Last Glacial Maximum and its interplay with species distribution and the early peopling of the country) by applying standard methodological procedures. Although the proposal is meritorious and this truly multidisciplinary team has gained experience in these endeavors, the approach described is not really novel and applied techniques, etc., were developed elsewhere. It is worth pointing out that this team includes scientists from several institutions outside the Metropolitan Santiago region, and is balanced in terms of gender distribution, which is all in compliance with MSI policies. The proposal also addresses the important issue of training and promoting young scientists.

Despite these favorable attributes, and after comparing with other young research groups, this reviewer found that the track records of the team members, as well as the extent of their international network are both not truly outstanding. Given the tightness of the competition, invitation for interview cannot be recommended.

64.Name of the Proposal: Millennium Nucleus in Inflammation

Applicant's last name: Yuseff

This is a poorly developed proposal by outstanding promising investigators. The investigators should be encouraged to re-think their strategy and significantly narrow the objectives of the nucleus. The proposal should describe reasonable, concrete objectives with a concrete experimental plan to achieve them. Perhaps the P. I.s should seek out mentorship from other scientist so that they better grasp what could be reasonable objectives that could be achieved in the context of a Millennium nucleus.

65.Name of the Proposal: Millennium Nucleus for open innovation approach in food processing, design and optimization for health and wellbeing of 21st century: from raw material to human up-take in thermally processed food products

Applicant's last name: Ramírez

The topic of this Nucleus is certainly interesting and relevant for Chile. The competence of the team should allow to make significant progress. However, and in view of the severe competition, there are not enough elements of outstanding nature to recommend invitation for interview.

66.Name of the Proposal: Millennium Nucleus on Operations Research for the Integration of Sustainable Energy (MINORISE)

Applicant's last name: Sauma

Although the team is a good one and the thematic focus of the project addresses an issue of scientific and societal concern, insufficient detail and integration exist in the

development of WPs. The PC recommendation is to not to invite for interview, especially given the highly competitive nature of the Nucleus competition.

67.Name of the Proposal: Millennium Nucleus Center for Brain-Machine Interfaces and Neuromodulatory Mechanisms
Applicant's last name: Sifaram

The PC is excited by brain-machine interface approaches to altering brain function and behavior, and ultimately for use in treating brain illness, but the current proposal seems over-ambitious and naïve. The rodent studies and the intervention for major depressive disorder are particularly poorly designed, and details of methodology for developing new technology in Aim 1 and computational approaches in Aim 2.2 are lacking, making it impossible to evaluate feasibility or what will be done. Although the personnel are strong, this proposal is not competitive.

68.Name of the Proposal: Millennium Nucleus in Musculoskeletal System Crosstalk-MuSyC
Applicant's last name: Eisner

This is a great research team with a poorly develop research program. The proposal is too broad and reads more like a collection of already on going loosely related projects. This proposal is not competitive at this point.

69.Name of the Proposal: Millennium Nucleus for Research and development of materials for energy production and storage
Applicant's last name: Zárate

The topic of this Nucleus is of considerable international interest and of obvious relevance to the Chilean economy. Although the quality of the team is not questionable, the PC considers that the proposal lacks the outstanding character required for such a tough competition.

70.Name of the Proposal: Millennium Nucleus for Enzyme Research: Structure, Evolution, Engineering & Design (SEED)
Applicant's last name: Cabrera Paucar

Despite the competence of the team and the very relevant objectives of the Nucleus, this proposal does not have the outstanding character required by this severe competition.

71.Name of the Proposal: Millennium Nucleus for Computational Astrophysics (NuMAC)
Applicant's last name: Padilla

The PC liked this proposal much more as an Institute, as it built on what this capable team was already doing, and gave them the timescale needed to achieve big things. But they have tried to make the minimal changes necessary to re-submit it as a Nucleus, instead of scaling it back and targeting low-hanging fruit, as was suggested to them in the Institute feedback. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

72.Name of the Proposal: Millennium Nucleus Research Center for Solar Energy
Applicant's last name: Wallentowitz

Given the tight competition this proposal should not move forward to interview.

73. Name of the Proposal: Millennium Nucleus of Plant Nutrigenomics in Volcanic Soils
Applicant's last name: Reyes

This research team has overall a "very good" track record and complies with most MSI policies (e.g. age and gender distribution). On the other hand most of the associates are based at one single institution (Universidad de la Frontera) and one of the aims of MSI is to bring together individuals from several different institutions, if possible. Also, and in comparison with individuals conforming other groups, their international experience seems somewhat limited.

Although the proposed research topic is of importance for the future economic development of southern Chile, the methodologies described do not seem particularly innovative and this reviewer doubts whether they will stand out scientifically on an international level.

Finally, neither the outlined plans for the promotion of young scientists, nor those related to outreach activities seem sufficient to be convincing. This is particularly so in an environment of high competition such as the MSI program. Hence, invitation for interview cannot be recommended by the PC.

74. Name of the Proposal: Millennium Nucleus of Astronomical Technology, Instrumentation and Spectroscopy
Applicant's last name: Vanzi

Astronomical instrumentation development within Chile led by CAE is really coming of age, with major contracts for MOONS, TARDyS, etc. Having gone to the effort of recruiting researchers from other institutions, with different research interests, it is regrettable that no interdisciplinary and inter-institutional plans were put forth in this proposal. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

75. Name of the Proposal: Millennium Nucleus in Integrative Postharvest Modelling
Applicant's last name: Pedreschi

This is a good team of collaborators that address an important issue that is of considerable societal interest and that has economic ramifications for the future of Chile. Nonetheless, the proposed quantitative approaches that integrate and synthesize the research were not sufficiently discussed in the proposal. The mechanisms for education, outreach, and networking were adequate, but not particularly innovative or novel.

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend invitation for interview.

76. Name of the Proposal: Millennium Nucleus for the Neurosciences of Poverty and Inequality (NPI)
Applicant's last name: Crossley

The goals of this program and the social needs that they would address are laudable, however the program of study is fragmented and some aspects are underpowered. As a result, the outcomes of these studies would not be as transformative as might be hoped. This proposal is not in the highest priority group for funding based on the science, but socially is very important. The PC does not recommend invitation for interview.

77.Name of the Proposal: Millennium Nucleus in Risk on Critical Infrastructures in the Andean Context

Applicant's last name: López

Although the topic is of great relevance for Chile, the scope of the proposed activities is such that it would be impossible to be carried out by a small nucleus. Proposal lacks detail and it is not clear whether this project would stand out at the international level for its innovative approach. Given the high level of competition, invitation for interview cannot be recommended.

78.Name of the Proposal: Millennium Nucleus in abiotic stress for sustainable agriculture

Applicant's last name: Stange

Although this project is certainly of relevance to Chile and the associates seem to have the expertise to carry out the proposed research, they failed to convince the PC that this research will stand out on an international level by its innovative approach, quality, etc. The promotion of young personnel and outreach activities are described in sufficient detail to be evaluated as highly meritorious. Despite, and given the high level of competition of the MSI program, this project cannot be judged as outstanding and should hence not be considered for being funded.

This is a good team of collaborators who address an important scientific issue. Nonetheless, concerns about the depth and breadth of expertise on the team as well as concerns about the adequacy of approaches for answering the "big questions" identified in the proposal result in my assessment to not recommend invitation for interview.

79.Name of the Proposal: Millennium Nucleus for the eco-genomic modelling of fruit and forest tree species

Applicant's last name: Prieto

This is a good team of collaborators who address an important scientific issue – one that is of considerable societal interest and that has economic ramifications for the future of Chile. Nonetheless, the proposed quantitative approaches were insufficiently developed and there is uncertainty about the environmental aspects of climate change that would inform models and might strategically guide genetic engineering or plant biotechnological approaches.

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend invitation for interview.

80.Name of the Proposal: Millennium Nucleus TRIW: Treatments and Reuse of Industrial Wastewater

Applicant's last name: Salazar

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The proposal did not make a strong case that the proposed research would advance fundamental scientific knowledge, and its mechanism for education, training, outreach, and networking were not particularly well advanced or innovative.

81.Name of the Proposal: Millennium Nucleus of Nanobiotechnology for Degenerative Diseases (NanoBioD2)
Applicant's last name: Varela

While this proposal uses innovative bioengineering approaches to deliver therapeutics, the combination of projects does not result in greater synergy than the individual experiments on their own. There is not much explanation of how the groups examining AD and DMD will provide synergistic advances and the third objective is a broad screen that is not well defined and overall, which does not generate confidence that it can be carried out successfully.

82.Name of the Proposal: Millennium Nucleus of Microbiome Evolution
Applicant's last name: Dorador

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the nucleus. The project is far too ambitious and diffuse to suggest a reasonable likelihood of attaining project objectives. Mechanisms for synthesis and integration also need to be developed more incisively in the proposal.

83.Name of the Proposal: Millennium Nucleus: Decoding Complex Inherited Phenotypes of Rare Disorders (DECIPHERD)
Applicant's last name: Repetto

The biggest strength of this proposal is that the Center Director currently oversees a large medical genetics practice that provides patients who could be part of the studies of rare diseases. The weaknesses include a lack of information on the number of rare cases that are seen each year, a focus on a diffuse set of criteria, including immunodeficiency, glomerular disease and multiple congenital abnormalities, which is not fully explained except by the expertise of some of the participants. The progression to treatment is not likely to happen for most abnormalities, but avenues for translation are described. This is a clinically relevant proposal with strong members, but may not reach the highest priority group. In view of the very strong competition, it could not be recommended for the interview by the PC.

84.Name of the Proposal: Millennium Nucleus Sporadic (Screening Platform of Rare Diseases in Chile)
Applicant's last name: Court

Although there is support for the establishment of screening platform for rare diseases in Chile, neither the P. I. nor the co P. I. has expertise in this area, which is a significant weakness of the proposal, somewhat ameliorated by the presence in the group of scientists with such expertise. There are also weaknesses in the experimental aspects of the proposed translation of the genetic information into experimental systems.

85.Name of the Proposal: Millennium Nucleus in One health: merging disciplines to understand the interaction between human, animal and ecosystem health, with the challenge of a changing world
Applicant's last name: Hamilton-West

This proposal is a bit of a wasted opportunity. The topic is exciting and relevant for Chile, the team of scientist is well qualified, but the proposal is so poorly developed and

superficial and so broad that it is unclear what will be accomplished; it is not recommended for the interview by the PC.

86.Name of the Proposal: Millennium Nucleus: Impact of Gestational Chrono-disruption on the Adult Immune System
Applicant's last name: Sarmiento

This is a good proposal by competent investigators to pursue a line of investigation that lends itself very well for a nucleus format. This is clearly a strength. However, in the end the proposal fails to generate enthusiasm as it is unclear how the information that is generated will be integrated into a larger picture. This proposal is unlikely to be able to compete in the final round.

87.Name of the Proposal: Millennium Nucleus of Space Plasma Physics.
Applicant's last name: Valdivia

The Institute proposal submitted last year seemed rather too unfocused. Even after splitting this into 2 Nucleus proposals, neither seems that compelling as there is simply not the diversity in institutions represented, or in disciplines that the Nucleus program is intended for. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

88.Name of the Proposal: Millennium Nucleus in Exercise and Health (NuMES)
Applicant's last name: Troncoso

The public health relevance of this Center is high. Research on the physiological effects of exercise on physical and mental health is critical. Unfortunately, the proposed studies, particularly the molecular and cellular studies, are descriptive and incremental, the clinical trials lack any detail of what interventions will be measured, how many subjects will be recruited, number of subjects needed for significant outcomes to be detected, etc. Thus, this critical Objective really cannot be evaluated. Epidemiological studies rely on an excellent longitudinal cohort and are more clearly feasible. The PC does not believe this proposal is competitive in this round.

89.Name of the Proposal: Millennium Nucleus of Aquaculture Research and Innovation.
Applicant's last name: Boltana

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The scope and complexity of the project is inappropriate for a nucleus comprising 5 scientists (2 directors and 3 associates), and is more of a scale requiring "Center" levels of support. The research should have been better linked to theoretical and conceptual issues in basic sciences. Inclusion social scientists would have enhanced the success of activities dependent on economic or sociological considerations.

90.Name of the Proposal: Millennium Nucleus of Epithelial Physiology

Applicant's last name: Alzamora

There is enthusiasm for the topic. However, the proposal failed to articulate a program that would result in outputs that are more than the simple addition of the current research efforts of its participants. It is unclear what would be gained by establishing this nucleus beyond what would naturally be expected if the investigators work on their own.

91.Name of the Proposal: Millennium Nucleus of Forest Health Research in biotic and abiotic interactions in Native Species (FHINS)

Applicant's last name: Sanfuentes

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The proposal did not effectively link the social-cultural line of research, which was not clearly described, to the biophysical lines of research in the project. Moreover, considerably more discussion of modeling or statistical approaches for characterizing the way that global change drivers affect tree physiological status and susceptibility to pathogens and pests would have enhanced the integrative and synthetic value of the project. The mechanisms for education, training, outreach, and networking were not particularly novel or innovative.

92.Name of the Proposal: Millennium Nucleus Biomass Combustion and Atmospheric Pollution

Applicant's last name: Cereceda

The importance of studies on air pollution resulting from biomass combustion is obvious and a better monitoring of the consequences of the burning of endemic woods, stubble from agriculture, the forestry industry and other types of biomass residues, etc., is highly desirable. In this respect, the objectives of the Nucleus are fully appropriate and aim at combining various facets of the problem. Considering however the shortcomings indicated and the very high competition, this proposal cannot be ranked in the top priority list.

93.Name of the Proposal: Millennium Nucleus of Applied Biogeography to Conservation and Management of Marine Resources (BIOMA)

Applicant's last name: Ibáñez

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. Additional expertise (modeling) and more innovative or novel plans for education, outreach, and networking are needed to strengthen the proposal. Mechanisms for synthesis and integration also need to be developed more incisively in the proposal.

94.Name of the Proposal: Millennium Nucleus Fungal Biotechnology for Drug Discovery (MN-FB4D2)

Applicant's last name: Aranda

There is strong support for the central topic of this proposal, which offers great opportunities. However, the proposal itself fails to capitalize on this potential, it is too

broad and in parts unnecessarily unrealistic. Overall, the proposal needs further development to be competitive for funding.

95.Name of the Proposal: Millennium Nucleus for the Invisible Galaxy (MIG)

Applicant's last name: Chanamé

As with so many other Nucleus proposals in this round, what the PC read here is a plea from dedicated researchers, separated by geography, pleading for the funding to enable them to work more closely together, and call themselves a Nucleus or Centre. But they fail to recognize this is not the purpose of the MSI; for that, they need to broaden their horizons and identify wholly new collaborations, networks, training and outreach ideas. Sadly the PC saw none of that here, and in such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

96.Name of the Proposal: Millennium Nucleus Research Center For Brain Rejuvenation" (ReBrain)

Applicant's last name: Rivera

The proposal is the type of high-risk, high-gain project that could result in transformative changes. The focus on platelets is not well-justified, but the overall evaluation of circulating factors that contribute to brain aging will be useful overall, and the identification of any factors that contribute to preservation or restoration of neuronal function (the high-risk portion of the Center), would be extremely high impact. Even though the PC thinks that this proposal deserves consideration, in view of the very strong competition, it could not be recommended for the interview by the PC.

97.Name of the Proposal: Millennium Nucleus On Earths and Small Stars (MESS)

Applicant's last name: Jenkins

This proposal's fixation with Earth-like planets around M dwarf stars caused the PC frustration since there is some cutting-edge science on low-mass stars contained within. However it is also weak in lacking any real multi-disciplinary aspect involving people from outside the close-knit astronomy community. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

98.Name of the Proposal: Millennium Nucleus in Neuroconnectivity Regeneration ReConnect

Applicant's last name: Bronfman

This is a preclinical Center proposal in a very crowded area of neuroscience (the molecular basis of neural regeneration). It will be difficult for this team to make a highly significant impact in this mature field. In addition, translational opportunities are far off. Overall, this Center is not in the highest tier for consideration.

99.Name of the Proposal: Millennium Nucleus of advanced research in drying and related heat and mass transfer processes on wood

Applicant's last name: Ananías

Although the subject is relevant and economically of interest, and the proponents seem to also have ample experience in the drying and treatment of wood, this project is not competitive enough. Several aspects, including the small size of the nucleus, the ages of the PI and Co-PI, their affiliation to one single institution, the lack of concrete plans in

regard to the formation of new young scientists, the question of how to attract more women to the engineering sciences, the virtual absence of outreach concepts (how will you reach your community and explain them that your research is important to them, and worth the tax-payers money?), etc., etc. do not allow to recommend this proposal in the context of a highly competitive environment in which only the most outstanding projects can be funded.

100. Name of the Proposal: Millennium Nucleus for the Evolution of Galaxies and AGN (MEGA)

Applicant's last name: Arévalo

While this proposal is full of good intentions and leading-edge science conducted by a young, enthusiastic team of junior academics, framing it around a survey that probably won't even be underway by the end of any initial Nucleus award hasn't served them well. Getting ready for SDSS V will be important, but is something that could happen anyway. In such a hugely oversubscribed Nucleus round the PC just didn't see this proposal as competitive.

101. Name of the Proposal: Millennium Nucleus in Biofilm Biology and Biotechnology (NMB3)

Applicant's last name: Vera

Although the topic is certainly important, the proposal is weak, in particular the area related to the study of biofilms by bacterial pathogens. The potential for international impact of the proposed studies is not strong.

102. Name of the Proposal: Millennium Nucleus on Marine Geology and Geophysics

Applicant's last name: Lara

This proposal aims to study a topic that is of great interest (characteristics of oceanic plates being subducted) by applying standard methodological procedures and bringing together geophysicists and geologists. Although this multidisciplinary team has gained experience in these endeavors (the extent and quality of their international network is remarkable) the field of study described is far too wide in scope to be addressed successfully by such a small group of scientists with the available time and funds. The more detailed study of a narrower topic within the same field would have been more realistic. The proposal also lacks more detailed description in regard to how and when geologic samples from the seafloor will be obtained, how new bathymetric data will be acquired, etc. This team includes associates from institutions hosted all within the Metropolitan Santiago region, and is also unbalanced in terms of gender distribution (all members are male), which is not in compliance with MSI policies. The proposal also does not address sufficiently the important issue of training and promoting young scientists. After comparing with other young research groups, this reviewer found that the track record of several of the team members is not truly outstanding. Given the tightness of the competition, the PC cannot recommend invitation for interview.

103. Name of the Proposal: Millennium Nucleus for Translational Research in Oncology (MiNTROn)

Applicant's last name: Garrido Salvo

There is support for many aspects of this proposal such as efforts to establish a national registry of cancer patients, or the promotion of better ties between industry and universities in the cancer arena. However, the proposal is too broad and unrealistic in its

scope, and very few specifics are provided about how the goals will be accomplished. Particularly weak is the area related to basic cancer research. Very few details are provided beyond the enumeration of projects, each one broad in its own right. This proposal is not competitive.

104. Name of the Proposal: Millennium Nucleus Adaptation and Computation in Cell-Ecosystem Machines
Applicant's last name: Keymer

This all sounds like good stuff, but nothing that absolutely needs Nucleus support to take it to the next level. There is too much "business as usual", and the team too small to tackle the research lines proposed. On the technological side, the idea of promoting inexpensive, customizable and open-source scientific instrumentation is very interesting, especially for educational and outreach purposes. In conclusion, this is an original proposal, led by a group of young and enthusiastic researchers. But in its current form, it looks more like a grant proposal for a lab than for a Nucleus.

105. Name of the Proposal: Millennium Nucleus for Cannabis Studies
Applicant's last name: Andrés

While this proposal focuses on cannabinoids, the behaviors, brain areas and mechanisms to be studied are diffuse, and the proposed studies will not break extensive new ground. This is not in the highest priority group and the PC cannot recommend invitation for interview.

106. Name of the Proposal: Millennium Nucleus for the study of Missing heritability in Complex Disorders (MISCODE)
Applicant's last name: González Hormazábal

This is a well-crafted proposal to address important public health issues. The research team has the necessary expertise to carry out the studies. There are concerns whether the sample size will be sufficient to obtain useful information. Additional concerns are related to the proposed studies to follow up on the mutations that will be identified through the screen. Details were scant and it is unclear what those follow up studies will accomplish. Overall, enthusiasm of the PC for the proposal is low.

107. Name of the Proposal: Millennium Nucleus on developmental programming by oxygen (DevPROX)
Applicant's last name: Herrera

This is a proposal to address an issue of high public health relevance given the Chilean geography. However, the proposal is poorly developed and the lack of expertise of the P. I. and co P. I. in the execution of human experimentations weakens the application.

108. Name of the Proposal: Millennium Nucleus in Antitumoral mechanisms of new compounds and oligosaccharides from marine macroalgae (Marine Pharmacology)
Applicant's last name: Moenne

Although there is support for the idea of bio-prospecting algae for compounds, the lay out plans to prospect for anti-cancer drugs lacks sophistication and is unlikely to lead to significant advances. This proposal is not competitive to advance to the next phase.

109. Name of the Proposal: Millennium Nucleus Center for HIV/AIDS Integral Research (CHAIR)

Applicant's last name: Soto

This is a good research team addressing a problem of great public health significance. However, the scope of the proposal is unrealistically broad, indicating that the proposal has not been thought through clearly. As it stands it is clearly not competitive.

110. Name of the Proposal: Millennium Nucleus in Nonlinear Mathematical Problems and Applications

Applicant's last name: Iturriaga

This proposal is organized around a good team of mathematicians. The main topic is the analysis of nonlinear partial differential equations. Some research directions are original, in particular in criminology or to study the link between PDEs and machine learning. Nevertheless, and especially for these fields, the proposal fails at presenting convincing collaborations with experts of other disciplines. The possible synergies between the different aspects is not much detailed either. There is a risk that the creation of the nucleus does not significantly impact the work that would have been done without it. Thus, despite all its positive aspects and in view of the very strong competition, this proposal could not be recommended for interview by the PC.

111. Name of the Proposal: Millennium Nucleus Biomaterials for 3D printing Construction; Center for a Bio2Habitat

Applicant's last name: Gacitúa

This is a proposal that should not be considered for invitation given the strict limitation of fundable proposals.

112. Name of the Proposal: Millennium Nucleus Research Center on Sustainable Environments

Applicant's last name: Wu

This project addresses an important and timely problem. Unfortunately, its scientific content is not sufficiently focused and lacks of depth. Its strategy to address end-users problems is not convincingly presented. Overall, it fails to demonstrate that it could have a significant scientific or societal impact. Thus, this proposal could not be recommended for interview by the PC.

113. Name of the Proposal: Millennium Nucleus in Neuroendocrine Integration of Energetic Metabolism (NuNEME)

Applicant's last name: Maliqueo

Of the proposals focused on obesity and metabolic syndrome, this experimental plan is the most innovative and potentially translational. The proposal itself is over-ambitious, but the ideas are consistent throughout the aims, and the combination of human and rodent studies makes sense, for the most part. Details of the clinical trials would be necessary to determine whether they would be adequately powered to achieve an interpretable outcome. The major downfall of this Center is the lack of critical expertise in human clinical trial leadership that would be essential for the success of the proposed studies. There is also less expertise in cytokine biology than the PC would expect for a Center focused primarily on this topic.

114. Name of the Proposal: Millennium Nucleus in Microbiome and Neuroimmunology of Salmonids
Applicant's last name: Levicán

There is support for the specific topic, which is relevant on many accounts. However, the proposal is poorly developed and the senior leadership seems to lack the necessary expertise to lead a project with this specific scientific focus. Therefore, this proposal is not competitive to move to the next round.

115. Name of the Proposal: Millennium Nucleus Intelligent Decisions and Information Systems
Applicant's last name: Merigó

This Nucleus proposal is led by a researcher who looks very active and visible in the field of business intelligence. The document nevertheless contains several flaws: a very limited presentation of its members; a methodological part that looks a bit narrow with respect to an applicative part that looks overly large; a not very specific training program. Thus, this proposal could not be recommended for interview by the PC.

116. Name of the Proposal: Millennium Nucleus on metabolomics and health beneficial properties from Chilean food plants
Applicant's last name: Schmeda

This is a poorly crafted proposal, with some interesting ideas but extremely short in detail. It is difficult to get a real sense of how the objectives will be accomplished. This proposal would not be able to compete for funding in its current configuration and the PC does not recommend it for interview.

117. Name of the Proposal: Millennium Nucleus for research in Autistic Spectrum Disorder (NUMTEA)
Applicant's last name: Marzolo

The PC does not believe this proposal is in the top group. While the problem is important, the scientific studies to be proposed are not likely to result in breakthroughs in diagnosis, treatment or basic understanding of autism. The assembled group also does not have the correct expertise to carry out transdisciplinary animal and human peripheral biomarker studies. The clinical goals of identifying the prevalence and characteristics of ASD in Chile is the greatest strength of the proposal, but the rest of the proposal is not compelling. Thus, this Center is not competitive and should not be considered further.

118. Name of the Proposal: Millennium Nucleus of Applied Chronobiology
Applicant's last name: Torres

This is a proposal by competent scientists that addresses an important area of research. However the proposal falls way short of providing a convincing argument that the proposed studies will drive the scientific membership into new research directions. Rather, the proposal reads more as a description of research efforts that are a natural continuation of ongoing research activities by the different members. Its potential international impact in an area that is well populated around the world is also uncertain. Consequently, this is not a competitive proposal.

119. Name of the Proposal: Millennium Nucleus Calcium Receptor Sensor Research Center for Chronic Diseases and Inflammation
Applicant's last name: Cifuentes

This is a very narrow proposal and does not bring synergy or breadth to a new area. The goals are modest and not transformative and not competitive for further consideration.

120. Name of the Proposal: Millennium Nucleus in Distributed Energy Solutions
Applicant's last name: Jiménez

Given the strong competition, this project should not be selected for interview.

121. Name of the Proposal: Millennium Nucleus Open System Dynamics in Quantum Physics and Biophysical Processes
Applicant's last name: Rebolledo

This proposal is not sufficiently competitive to be invited for interview.

122. Name of the Proposal: Millennium Nucleus in smart technologies for remote sensing and communications with nano-satellites
Applicant's last name: Díaz

This is a well-motivated proposal to build a Nucleus to support cubesat communication technology in Chile. Unfortunately they seemed unable or unwilling to directly engage researchers outside of their own department, let alone U. Chile. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.

123. Name of the Proposal: Millennium Nucleus in Biodiversity of Aquatic sub-Antarctic Ecosystems
Applicant's last name: González Wevar

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The recent educational and mentoring accomplishments of the team were significantly less than those associated with the most competitive proposals, and the plans for promotion of young scientists were unremarkable as well. Moreover, the component parts of the research project were not sufficiently integrated to suggest a high level of synthesis.

124. Name of the Proposal: Millennium Nucleus on air quality
Applicant's last name: Huneus

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The nucleus is not particularly transdisciplinary, and is rather narrowly focused on particular problem with unclear promise with regard to advancing basic or foundational science. Education, training, and outreach activities were unremarkable for the most part.

125. Name of the Proposal: Millennium Nucleus for Microbiota-Associated Disorders

(MINMAD)

Applicant's last name: Pino

This is clearly not a competitive proposal. It has an unrealistic scope, provided little detail of how the objectives will be achieved and the leading scientists lack the necessary expertise to carry them out.

126. Name of the Proposal: Millennium Nucleus on Hypertension, Renal and Cardiovascular Disease

Applicant's last name: Carvajal

This is a poorly developed proposal, lacking in experimental details, and too broad and unrealistic in its conception. Therefore in its current form is not competitive for potential funding.

127. Name of the Proposal: Millennium Nucleus for study of Myopathies

Applicant's last name: Caviedes

This is an unrealistically broad proposal, with poorly articulated goals. Furthermore, it does not articulate a convincing plan to promote young scientist, an issue further aggravated by the seniority of its members and leadership.

128. Name of the Proposal: Millennium Nucleus on Holography and Quantum Gravity

Applicant's last name: Olea

This proposal is not sufficiently competitive to be invited for interview.

129. Name of the Proposal: Millennium Nucleus on Small Scale Aquaculture for Sustainable Development

Applicant's last name: Rodrigues de Lara

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The proposal did not make a strong case that the proposed research would advance fundamental scientific knowledge, and its mechanisms for education, training, outreach, and networking were not particularly well advanced or innovative. Moreover, the PC was concerned about the lack of appreciable activity in mentoring during the past three years as well as the less than stellar productivity of the collaborators in terms of scholarship during that same time period.

130. Name of the Proposal: Millennium Nucleus of Wound Repair, Treatment & Health (WoRTH)

Applicant's last name: Caceres

This is broad and unrealistic proposal, with a research team that lacks the expertise to carry out some of the proposed experiments. It is not viewed as competitive and therefore is not a good candidate to move to the next phase.

While this proposal focuses on wound healing, the mechanisms to be studied are diffuse, and the proposed studies rely on successful identification of factors that differ between efficient and non-efficient wound healers. That study is not likely to result quickly enough in a large panel of new molecules to test in the second 2 projects. In addition, the study

design of project 1 must be powered sufficiently and designed well enough to come up with reliable and robust targets, and it is not clear that this is the case. This is not in the highest priority group for funding.

131. Name of the Proposal: Millennium Nucleus of Neuroimmunology
Applicant's last name: Maccioni

The initial description of the goals of this Center was compelling, but the details of the proposed studies do not suggest that the outcomes of the work will be of high impact. This proposal is not competitive for further consideration.

132. Name of the Proposal: Millennium Nucleus for the design of sustainable and resilient agri-food systems under climate change scenarios in southern Chile
Applicant's last name: Dörner

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The breath of the nucleus is too great and the expertise of the participants is insufficient to attain the proposed goals. Although the project is solid, it is not innovative with regard to research, education or outreach. Moreover, it is not clear why a nucleus is required to catalyze the efforts.

133. Name of the Proposal: Millennium Nucleus on Star Formation
Applicant's last name: Stutz

There are already a number of astronomy Nuclei and an Institute that work on aspects of star formation. This proposal seeks to capitalize on the talent and potential assembled within the University of Concepción to tackle some of the hardest questions in astronomy. But therein is its greatest flaw - the Nucleus program is intended to enable scientific interactions and training opportunities that would not otherwise take place due to geographical distribution and/or spanning disparate disciplines. In such a highly competitive Nucleus round, this proposal simply doesn't meet these criteria.

134. Name of the Proposal: Millennium Nucleus-Advanced Research in Oral Sciences (MN-AROS)
Applicant's last name: Gamonal

This is a scientifically weak proposal, too broad for a nucleus, and a poor fit for this Millennium Initiative.

135. Name of the Proposal: Millennium Nucleus for Integrated and Transdisciplinary Research of Marine Coastal Processes (IntegrAR)
Applicant's last name: Hidalgo

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The proposal did not make a strong case that the proposed research would advance fundamental scientific knowledge, and the delineation of particular lines of research are too vague to instill confidence of success.

136. Name of the Proposal: Millennium Nucleus of Audition, Dementia and Stress

(ANDES)

Applicant's last name: Delano

Overall, this Center is not strongly related to hearing impairment. The human prospective study could make for an interesting non-multi-disciplinary study, but suffers from some questions about power and methodology in biomarker studies and was collected to understand mild cognitive impairment and dementia, not audition. Rodent studies are unrelated to human studies, are not well described and will not lead to the hoped for outcomes. As a result, this version is not appropriate for further consideration.

137. Name of the Proposal: Millennium Nucleus on Ocean Waves and Marine Energy Conversion

Applicant's last name: Hernández

Given the strong competition, this project should not be invited for interview.

138. Name of the Proposal: Millennium Nucleus of Alcoholism

Applicant's last name: Quintanilla

This proposal is a poorly thought out hodgepodge of techniques and studies with no information that would allow evaluation of potential success. The personnel do not cross levels of investigation sufficiently to result in Center synergy. The studies are limited in their possibility of translation in the near term. This proposal is not competitive for further consideration.

139. Name of the Proposal: Millennium Nucleus Interdisciplinary Center for Sustainability of the Araucanian Lake Ecoregion (CISELA)

Applicant's last name: Zorondo

Funding constraints create a highly competitive scenario in which only the most outstanding research, combined with innovative education and effective outreach can be funded. Within that context and compared to other proposals, the PC does not recommend funding of the project. The proposal did not make a strong case that the proposed research would advance fundamental scientific knowledge, and its mechanism for education, training, outreach, and networking were not particularly well advanced or innovative. Most importantly, the collaborative team was not as scientifically productive or as experienced as mentors as the PC would have expected, and the proposed research was described in very general terms without sufficient specificity to suggest a high likelihood of success.

140. Name of the Proposal: Millennium Nucleus in Microbome Composition and Dynamics in Children During Health and Disease

Applicant's last name: O'Ryan

This is not a competitive application with a P. I. whose expertise is not well aligned with the topic and a proposal too vague and general to provide valuable outcomes for what is already a crowded field.

141. Name of the Proposal: Millennium Nucleus for Galactic Archeology

Applicant's last name: Monaco

While the PC could sense the frustration among these 4 world-class researchers in cluster stellar abundances at being isolated at "three host institutions include the northern- and southern-most Chilean universities"; and feeling that Chile is not getting all it could out of

the various GA surveys being conducted there, the case for Millennium Nucleus funding has not been made. In such an incredibly competitive Nucleus round the PC was unable to recommend this proposal proceed to the interview stage.