



**CSIC**  
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

THE 55TH ANNUAL MEETING OF  
THE SOCIETY FOR CRYOBIOLOGY  
**CRYO2018**

July 10-13, 2018 Madrid

---

**Abstracts**

---



linear model procedure using SAS 9.1 and Tukey's test was used to determine statistical differences among groups ( $P \leq 0.05$ ). Result showed that there was no significant difference between sperm motion characteristics (VAP, VSL, VCL, ALH and LIN) between soybeans based extender and control extender. But mitochondrial membrane potential was higher when soybean lecithin-based extender was used. Beneficial effects of soybean lecithin in the extenders for cryopreservation of bull semen need to be further investigated.

**Source of Funding:** This work was supported by funding from the Tarbiat Modares University.

**Conflict of Interest:** None to disclose

#### **P97 PROTECTION AGAINST CELL DEATH DURING CRYOPRESERVATION WITH WHEAT PROTEINS: WHICH MODE OF CELL DEATH?**

Mélanie Chow-Shi-Yée\*, Mélanie Grondi, Diana Alison Averill-Bates, François Ouellet

University of Québec at Montreal, Canada.

**Corresponding Author\*:** melanie.csy@gmail.com

Hepatocytes are a good physiological model for pharmaceutical and clinical domains. They are important for drug toxicity testing and are also useful for human cell transplantation as an alternative to liver organ transplantation. Freshly isolated hepatocytes are used immediately or stored by cryopreservation for later use. This approach requires cryoprotective chemicals to avoid damage caused by the freeze / thaw process and prevent loss of viability and metabolic functions. One of the most commonly used cryoprotective agents is  $\text{Me}_2\text{SO}$ , which is cytotoxic and decreases viability, metabolic functions and attachment efficiency. Our goal is to develop new cryoprotective agents that are less toxic, based on nature's freezing tolerance-associated proteins that are present in wheat. These proteins contribute to the wheat plants' capacity to withstand cold and freezing conditions. Two recombinant wheat-derived proteins, enolase and 2-cys peroxiredoxin, were used as cryoprotectants and improved hepatocyte post-cryopreservation viability and metabolic functionality, when compared to cells cryopreserved with  $\text{Me}_2\text{SO}$ . This study investigates mechanisms of cell death induced during cryopreservation with plant proteins compared to  $\text{Me}_2\text{SO}$ . While levels of reactive oxygen species (ROS) increased during cryopreservation with  $\text{Me}_2\text{SO}$ , this did not occur when hepatocytes were cryopreserved with the recombinant plant proteins. These proteins therefore appear to play an antioxidant role. Given that ROS are activators of apoptosis, we investigated whether different apoptotic pathways were activated in hepatocytes during cryopreservation. The principal type of cell death that occurred was apoptosis, although some necrosis occurred.  $\text{Me}_2\text{SO}$  caused considerably more apoptosis, whereas the plant proteins provided protection. These results improve our understanding of how cells die during cryopreservation and should help to optimize cryopreservation protocols to limit loss of cell viability and metabolic functions, and diminish cellular stress.

**Source of Funding:** Not applicable

**Conflict of Interest:** None to declare

#### **P98 CRYOTHERAPY COMBINED WITH CORD BLOOD INJECTION IMPROVES MYOCARDIUM STRUCTURE IN OBESE RATS**

Yuliia V. Martynova\*, Elena A. Chernyavskaya,

Vladislav G. Babiychuk

Department of Cryophysiology, Institute for Problems of Cryobiology and Cryomedicine of the NAS of Ukraine, Kharkiv, Ukraine. **Corresponding Author\*:**

**martynova1rudnyeva@gmail.com**

The numbers of obese people is still growing in developed countries. Obesity is often associated with an increased risk of coronary heart disease and hypertension. The goal of our study was to assess and compare influences of sole and combined use of rhythmic extreme whole-body cryotherapy (RE WBC) and cord blood nucleated cells (CBNCs) injection on myocardium structure in obese young rats. The experiments were approved by the Committee on Bioethics at the Institute for Problems of Cryobiology and Cryomedicine of NAS of Ukraine. The whole cooling cycle included 9 procedures (3 procedures/day) of cooling (2 min each) for 5 days with a day interval. Immediately after cooling the skin temperature declined within the range of 3–5 °C, the rectal temperature did not change significantly. Thawed CBNCs preparation was injected intraperitoneally in dose of  $(1-3) \times 10^5$  CD34<sup>+</sup>-cells/kg (after the ninth procedure in RE WBC+CBNCs group). The preparation was made up to 1 ml volume with plasma autologous to the cells. The rats were decapitated 30 days after the last cooling procedures and/or the injection, and the pieces of myocardium tissue were taken for a histological study. Myocardium structure was assessed in histological specimens stained with hematoxylin and eosin, van Gieson's picrofuchsin. The signs of circulatory disorders, myocardium hypertrophy, interstitial and perivascular edema, and focal cardiosclerosis were indicated in obese rats. After combined application of RE WBC and CBNCs these signs were poorly expressed. The morphological signs of neoangiogenesis were noted. This means improving blood flow and trophism of the heart, hindering the development of ischemia and necrosis, which allows maintaining an increased number of cardiomyocytes, as well as providing their needs for hypertrophy of the myocardium, directly associated with the diet-induced obesity. Thus, the combined application of RE WBC and CBNCs can improve myocardium structure in obese young rats.

**Source of Funding:** Not applicable

**Conflict of Interest:** None to disclose

#### **P99 USING CRYOPROTECTIVE AGENT (CPA) FOR EFFECTIVE CRYOGENIC THERMAL STORAGE UNIT USING WATER**

Sangkwon Jeong\*

Korea Advanced Institute of Science and Technology, South Korea. **Corresponding Author\***

## AUTHOR INDEX

### A

Abdul Rahman, Mohd  
 Basyaruddin: S104, P91  
 Abedheydari, Elham: S110  
 Abrams, Joseph: S125  
 Abtahi, Naeimeh: P15  
 Abu Bakar, Mohd Zuki: S104  
 Acimovic, Ivana: S57  
 Acitores, David: S24  
 Acker, Jason P.: S49, S50  
 Adar, Chen: P9  
 Agca, Cansu: S46, S172  
 Agca, Yuksel: S46, S172  
 Agcanas, Lauren: P50  
 Aguiari, Paola: S101  
 Ahmad, Ejaz: S105, P100  
 Ahmad, Tanveer: S105  
 Ahmad, Waqas: P100  
 Aisen, Eduardo: P21  
 Akbari Javar, Hamid: P68, P69  
 Akçay, Ergun: P60  
 Akhlaghi, Amir: S42  
 Akhtar, Muhammad Saleem: S105  
 Akhter, Shamim: S111, S162  
 Alam, Md Ariful: S94  
 Alcantar-Rodriguez, Alicia: P71, P79  
 Alcouffe, Pierre: S36  
 Al-Essawe, Essraa: S10  
 Alhamad, Israa: S159, P18  
 Ali, Muhammad Amjad: S105, P100  
 Alizadeh, AliReza: S42  
 Almagro, Vanessa: P49  
 Alvarenga, Marco: P57  
 Álvarez, María Dolores: P88  
 Amoabediny, Ghasem: S160  
 Amorim, Christiani: S43, S45, S126, P23, P24  
 Amstislavsky, Sergei: S170, P59  
 Ananiev, Valentin I.: S144  
 Anastassopoulos, Elias: P42  
 Andrabi, Syed Murtaza Hassan: P73  
 Angel, Peggi: S81  
 Anglin, Noelle: S118  
 Ansari, Muhammad: S111, S162  
 Apparicio, Maricy: S90  
 Arabi Mianroudi, Reza: P27  
 Arellano-García, María Evarista: S59  
 Arregui, Lucia: P48  
 Assis, Isadora: P63  
 Asturiano, Juan F.: S143  
 Aurich, Christine: S10  
 Averill-Bates, Diana Alison: P97  
 Avrunin, Oleg: S135, P51  
 Awais, Mian: P100  
 Awan, Maoz: P13

### B

Ba, Yong: S58  
 Babenko, Natalya: P6, P7  
 Babijchuk, Lubov: P55  
 Babiychuk, Vladislav: P98  
 Bačíková, Alena: S61  
 Badoo, Jasmin: S51  
 Baert, Yoni: S107  
 Baffoin, Romain: S120  
 Bahari, Liat: P9  
 Baicu, Simona: S25  
 Bailey, Trisha: S40  
 Baki Acar, Duygu: P93, P94  
 Balcerzyk, Marcin: S126  
 Ballesteros, Daniel: S74, S78, S79, S80, S149  
 Balow, Kim: S65  
 Baniasadi, Farzaneh: S174  
 Baranizadeh, Elham: P66  
 Bardag-Gorce, Fawzia: P92  
 Barlič, Ariana: S136  
 Barranco, Isabel: P74  
 Barranco, Daniel: P82  
 Barroso, Pablo: S167  
 Baspinar, Nuri: S15  
 Bastan, Ayhan: P93  
 Bastan, Ayhan: P94  
 Bastiaens, Philippe: S39, S60  
 Baudot, Anne: S36  
 Bazrgar, Masood: P16  
 Beck, Annemarie: S95  
 Bein, Amir: P9  
 Belda, Emiliano: P8  
 Ben, Robert: S8, S49, S50  
 Benson, James: S125  
 Berjak, Patricia: P25  
 Bernal, Pablo: S78  
 Betsou, Fay: P3  
 Bhati, Aditya: S153  
 Bhonde, Ramesh: S139  
 Bigalk, Judith: S41  
 Bigne, Facundo: S17  
 Bilavcik, Alois: S23  
 Bischof, John: S85, S153, S154, S165  
 Blanch, Maria: P61  
 Blanco, Magdalena: S51  
 Blattner, Frank: S114  
 Blennow, Kaj: P3  
 Blesbois, Elizabeth: S111, S162  
 Bodu, Mustafâ: S15  
 Bogdanchikova, Nina: S59  
 Bolyukh, Vladimir: S56, P1, P2  
 Bonaura, María Candela: P10, P11  
 Bondarovich, Nikolay: P7  
 Bonet, Sergi: S28  
 Boothby, Thomas: S69  
 Borrás-Perez, Sara: S173  
 Boryshpolets, Sergii: S145, P77  
 Boveda, Paula: P48  
 Brar, Parkash Singh: S16  
 Braslavsky, Ido: S7, S135, P9, P42  
 Bravo, Walter: S109

Bremer, Anne: S65, S66  
 Brockbank, Kelvin: S25, S98, S102  
 Brusentsev, Eugeny: P59  
 Bruyère, Pierre: S36  
 Bryant, Gary: S66, P28  
 Bucak, Mustafa Numan: S15  
 Buderatskaya, Natalya: P62  
 Budke, Carsten: S3  
 Buff, Samuel: S36  
 Buitink, Julia: S52  
 Bunn, Eric: S116  
 Burch, Michael: S99  
 Buriak, Iryna: P65

### C

Cabiscol, Ramon: S95  
 Cabo-Salvador, Javier: S54  
 Caldas, Jôsie: P46  
 Campbell, Lachlan: S112  
 Campbell, Lia: S25, S98  
 Caño, María: P82  
 Cano, Vanesa: S147  
 Carbajal, Francisco J: P63  
 Carley-Clopton, Aidan: S153  
 Carneiro, William: P63 P78  
 Casado-Losada, Isabel: S24  
 Casey, John: S93  
 Casillas-Figueroa, Francisco: S59  
 Castander Olarieta, Ander: S59  
 Castilho, Paula: P29  
 Catão Egger, Renata: P78  
 Catt, Sally: S14  
 Chabenenko, Olena: S47  
 Chaichio, Maria C.: S167, P23, P24, P107  
 Chalmers, Sherri-Ann: P13  
 Chandravanshi, Bhawna: S139  
 Chantadee, Takron: P101  
 Charrier, Guillaume: S120  
 Chávez-Santoscoy, Alejandra Rocío: S59  
 Cheeseman, Jennifer: S47  
 Chen, Guan-Qun: P54  
 Chen, Xiaoling: S77, S119  
 Chen, Zhen: S25, S98, S102  
 Chen, Zhirong: S97, S124  
 Chen, Zhongrong: S63  
 Chernyavskaya, Elena: P98  
 Cheung, Melissa: S99  
 Chistiakova, Irena: P43  
 Chizhevsky, Viktor: P104  
 Choobineh, Hamid: S76  
 Chow-Shi-Yée, Mélanie: P97  
 Christmann, Jens: S60  
 Ciriza, Jesus: S133  
 Clulow, John: S86, S87, S106, S112  
 Clulow, Simon: S86, S106, S112  
 Colombo, Martina: S90  
 Connan, Delphine: S91  
 Córcoles-Saez, Isaac: S33  
 Corcoran, Anthony: S129

Cornette, Richard: S68  
 Corral, Ariadna: P24, S45, P82,  
 S126, P23, P107  
 Corredoira, Elena: S147  
 Counsell, Kristen: P50  
 Crichton, Elizabeth G.: S163  
 Crompton, Tessa: S99  
 Crossley, Christina: S25  
 Csenki Bakos, Zsolt: S96

## D

da Costa, Bruna B.: P31  
 D'adamo, Raffaele: P4  
 Daily, Martin: P81  
 Daly, Jonathan: S154  
 Daskin, Ali: S108  
 David, Laurent: S36  
 Davidson, Brian: S122  
 Davies, E. Graham: S99  
 Davies, Rachel: S80  
 Davis, Monica: S85  
 De Ancos, Begoña: P88  
 De Juan Capdevila, Ana Maria:  
 S20  
 De Wit, Agnes: S161  
 del Monte, Francisco: S24  
 Deladino, Lorena: P26, P70  
 Delahaye, Mike: S51  
 Delgado, Diego: S133  
 Dell'aqua Junior, José: P57  
 Deller, Robert: P19  
 Demirel, Murside Ayse: P93, P94  
 Deng, Yangbo: P102  
 Dermol-Černe, Janja: S136  
 Desnos, Hugo: S36  
 Dhariwal, Nerlyne: P175  
 Dickie, John: S80  
 Dietrich, Mariola: S145  
 Digilio, Ariana: P26  
 Dilshad, Raihan: P100  
 Dipresa, Daniele: S95  
 Dokina, Olga: P41  
 Dolce, Natalia Raquel: S115  
 Dolezalova, Nikola: S93  
 Dolmans, Marie-Madeleine: S45  
 Dominguez-Gil, Beatriz: S55  
 Dong, Rachael: P90  
 Doody, J. Sean: S112  
 Dreischmeier, Katharina: S3  
 Dubrava, Tatyana: P6, P7  
 Dumas, Paul: S176  
 Dumbauld, Chelsae: S47  
 Dupuis, Nadine: S91  
 Dursun, Şükrü: S15  
 Dzyuba, Borys: S145, P77

## E

Ebrahimi, Bitá: S27, P15, P16  
 Ectors, Fabien: S91  
 Edashige, Keisuke: S29, S31, P17  
 Edemhanria, Lawrence: P12  
 Eftekhari Yazdi, Poopak: S11  
 Egger, Renata: P63

Eickhoff, Lukas: S3  
 El Khassawna, Thaqif: S95  
 Elliott, Gloria: S38  
 Elliott, Janet A. W.: P90, S97,  
 S124  
 Ellis, David: S118, S146  
 Erdemli, Esra: P93, P94  
 Eroglu, Ali: P175  
 Erro, Eloy: P13  
 Escobar, Roosevelt: S146  
 Escribano, Maria Isabel: P61  
 Esmaeili, Akbar: P105  
 Esmaeili, Vahid: S157, S158  
 Estruch, Francisco: S33  
 Estruch, Josep: P49  
 Fabbrocini, Adele: P4

## F

Fahy, Greg: S81, S83  
 Falk, Martin: S57, S61  
 Falko, Oksana: P104  
 Falková, Iva: S61  
 Faltus, Milos: S23, P87  
 Fan, Yiming: P102  
 Fanega Sleziak, Natalia: S78, S79  
 Fang, Cifeng: P64  
 Fang, Peng: P14  
 Faraji, Samaneh: S110  
 Farshad, Abbas: S13, P33, P34  
 Farzinpour, Amjad: S13  
 Fathi, Rouhollah: S11, S42, S110,  
 S157, S158, S174  
 Fayter, Alice: P19, P80  
 Fedorov, Pavlo: S145  
 Feldewerth, Judith: S134  
 Feltrer, Yedra: P49  
 Fernández, José M.: S4  
 Fernandez-Bellon, Hugo: P49  
 Fernandez-Gonzalez, Lorena: P40  
 Fernández-Jalao, Irene: P88  
 Fernández-Santos, María Del  
 Rocío: P8  
 Ferrer, M. Luisa: S24  
 Ferrero, Cristina: S17  
 Filippi, Andrea: S101  
 Flores Castaños, Oscar: S115  
 Folgado, Raquel: S76, P22  
 Folsom, James: S76  
 Fonseca, Fernanda: S51, S176,  
 P29  
 Fornari, Darci: P30  
 Fossati, Ana: P30, P31  
 Fouladvandi, Razieh: P96  
 França, Thales: P63, P78  
 Franěk, Roman: S142  
 Freitas, Filomena: S26  
 Fuller, Barry: S99, S122, P13  
 Funnekotter, Bryn: S116  
 Furugen, André: P57, P58

## G

Gaddum, Nick: S51  
 Gaevskaya, Yulia: P6, P7

Gallardo, Miguel: S89  
 Gallego, Victor: S143  
 Gander, Amir: S122  
 Gao, Dayong: S169, P67, P64  
 Gao, Zhe: S85  
 Garach Domech, Alberto: P29  
 Garate, Ane: S133  
 García, Tania: S88  
 García Mitacek, María Carla: P10  
 Garcia-Dominguez, Ximo: S173,  
 P38, P39  
 García-Vázquez, Francisco A.:  
 P35  
 Garde, José Julián: P8  
 Gardela, Jaume: P49  
 Garrote, Graciela L.: P47  
 Geiche, Lyndsy: S172  
 Gelinsky, Michael: S95  
 Gerosa, Gino: S101  
 Gershik, Jeff: S76  
 Ghaffari, Seyed Mahmood: S157,  
 S158  
 Ghalamboran, Mohammad Reza:  
 S174  
 Ghezelayagh, Zeinab: P15  
 Gholami, Dariush: S157, S158  
 Gholami, Masoumeh: P105  
 Gibbs, Jennifer: S47  
 Gibson, Matthew: S40, P19, P80  
 Gildersleeve, Roy: S129  
 Giwa, Sebastian: S85  
 Glasmacher, Birgit: S62, S95,  
 S135, S136, P42, P51  
 Godoy, Leandro: S156, P46  
 Golan, Martin: S57, S61  
 Goloyad, Mikhail: P104  
 Goltsev, Anatoliy: P6, P7  
 Gómez-Sánchez, Adrian: S20  
 Gomez-Zavaglia, Andrea: P29,  
 S32  
 Gonçalves, Liudimila Passos: S43  
 Gonzalez, Raquel: S9  
 González, Wendy: S66  
 Gonzalez-Arnao, Maria Teresa:  
 S115  
 Goossens, Ellen: S107  
 Gort, Natalia: P2  
 Gosalvez, Jaime: P48  
 Govor, Iryna: P104  
 Goy, Claudia: S4  
 Grabenbauer, Markus: S39  
 Graham, Ben: S40  
 Greene, Elizabeth: S25, S98, S102  
 Grisenti, Robert E.: S4  
 Grobet, Luc: S91  
 Grondin, Mélanie: P97  
 Grundin, Johanna: S163  
 Gruszczuk, Anja: S93  
 Gryshkov, Oleksandr: S95, S135,  
 S136, P42, P51  
 Guerreiro, Bruno: S26  
 Gueye, Badara: S146  
 Guignot, Florence: S128

Guijarro, Marta: P107  
 Günther, Anne: S65  
 Gupta, Mukesh Kumar: S132  
 Gurruchaga, Haritz: S133  
 Gurruchaga Iribar, Haritz: P13  
 Gusev, Oleg: S68  
 Gutierrez, Maria C.: S24  
 Gutierrez-Marcos, Jose: P19  
 Gutierrez-Perez, Oscar: P79

## H

Hagedorn, Mary: S153, S154  
 Haider, Zeeshan: S137, P56  
 Hajiaghalou, Samira: S174  
 Hamaad, Ata-Ul-Rehman: S105  
 Han, Jiale: S41  
 Hardej, Karolina: S171  
 Harris, Steven B.: P66  
 Hasan, Muhammad: P19, P80  
 Hassan, Faiz-ul-: P100  
 Hassanzadeh, Seyed Mehdi: P27  
 Hatchondo, Constanza: P47  
 Hattori, Ricardo Shohei: S94  
 Hayward, Alice: P22  
 He, Bo: S84, S103  
 He, Rui: P14  
 He, Xiaoming: S166  
 Hebles, Maria: P107  
 Hellemans, Ann: S34  
 Henley, Michael: S154  
 Hepfer, Glenn: S98  
 Heres, Pablo: P32, P141  
 Herranz, Beatriz: P88  
 Herranz-Jusado, Juan German: S143  
 Hezavehei, Maryam: S11, S110  
 Hiemstra, Sipke Joost: S161  
 Higgins, Adam: S30, S82, S127  
 Hilfiker, Andres: S100  
 Hinch, Dirk: S65, S66  
 Hiti-Bandaralage, Jayeni: P22  
 Hofnagel, Oliver: S39  
 Höhn, Hannes: P28  
 Holehouse, Alex: S69  
 Hongo, Shin: P17  
 Honparkhe, Mrigank: S16  
 Horokhovatskyi, Yevhen: S145  
 Horváth, Ákos: S96, S142  
 Hossain, S. M. Chapal: P56  
 Hosseini, Seyed Nezamedin: P27  
 Hosseini Salekdeh, Ghasem: S11  
 Hrechyshnikova, Mariia: P104  
 Huang, Bin: S119  
 Huang, Shaohua: P44  
 Huang, Yanyan: S103  
 Huebinger, Jan: S39, S60, P40

## I

Ibrahim, Sahar: P91, S104  
 Iglesias Andreu, Lourdes  
 Georgina: S115  
 Ijaz, Nabeel: P100  
 İli, Pinar: S15

Impe, Daniela: S117  
 Inada, Takaaki: S5  
 Iniesta-Cuerda, María: P8  
 Iop, Laura: S101  
 Iwasaki, Yoshiko: S96

## J

Jafari Ahangari, Yousef: S42, S76  
 Jahanbakhsh Sefidi, Fatemeh: P27  
 Jalali, Zahra: P27  
 Jamme, Frederic: S176  
 Jaroš, Josef: S57  
 Jelínková, Šárka: S57  
 Jeong, Sangkwon: P99  
 Jewgenow, Katarina: P40  
 Ji, Fujun: P64  
 Jin, Bo: S31  
 Jivago, José Luiz De Paula Rôlo: S43  
 Johnstone, Brian: S138  
 Jomha, Nadr M.: S97, S124, P90  
 Joshi, Mary-Beth: S47  
 Julien, Allison: P50  
 Jurado, Susana: P11

## K

Kadam, Prashant: S107  
 Kaghazian, Hooman: P27  
 Kaendl, Johanna: S134  
 Kalinin, Anton: S4  
 Karimi, Amir: P95  
 Kašpar, Vojtěch: S142  
 Katkov, Igor: S6, S56, S155, P1, P2  
 Katz, Aaron: S129  
 Kaur, Sukhjeet: S16  
 Kelly, Ann: S164  
 Kelly, Daniel: S164  
 Keravec, Sophie: P29  
 Keskin, Nazan: S15  
 Khan, M. Shuaib: S104, P91  
 Khodaverdi, Sepideh: P15  
 Khoshmanesh, Khashayar: P28  
 Khosla, Kanav: S153, S154  
 Khosrozadeh, Fatemeh: P95  
 Kiani, Faisal Ayub: S105  
 Kikawada, Takahiro: S67, S68  
 Kilbride, Peter: S51, S99, P29, P81  
 Kizilova, Elena: P59  
 Kleinhans, Frederick: S154  
 Klejdus, Bořivoj: S61  
 Knox-Brown, Patrick: S65, S66  
 Kofanova, Olga: P3  
 Koop, Thomas: S3  
 Kopečná, Olga: S61  
 Köpnick, Claudia: S113  
 Korossis, Sotirios: S95, S100, S101  
 Kouba, Andy: P48  
 Kouba, Andrew: P50  
 Kovalev, Konstantin: P41  
 Kovtun, Svetlana: P43

Koyama, Toshie: S5  
 Kozhevnikova, Valeria: P59  
 Kozin, Anton: P20  
 Kozina, Darya: P20  
 Koziol, Katarzyna: S171  
 Krasilnikova, Aleksandra: P45  
 Kratochvilova, Irena: S57, S61  
 Kumar, Ajeet: S16  
 Kumar, Amitesh: S131  
 Kumar, Shiv: S16  
 Kumari, Chandrika: S131  
 Kushnarenko, Svetlana: P84, P86  
 Kuzmina, Tatiana: P20, P43

## L

La Val, Taylor: S76  
 Lacointe, André: S120  
 Lager, Claire: S154  
 Lahmeyer, Sean: S76, P22  
 Lamb, Stephen: P81  
 Laouar, Leila: S97, S124, P90  
 Lassen, Paula Graziela: P31  
 Lau, Ching-in: S99  
 Lawrence, Emma: S122  
 Le Sueur, Amanda: S129  
 Lebeda, Ievgen: S145  
 Lee, Michael J.: P66  
 Lehmidi, Tareq: S46  
 Leprince, Olivier: S52  
 Lewandowski, Piotr: S171  
 Lewis, Jedediah: S53  
 Li, Junwei: P74, P75  
 Li, Ling: P14  
 Li, Natalia: S35  
 Li, Qian: S96  
 Li, Wenhui: P14  
 Liang, Yuanyuan: P52  
 Lieskovska, Jaroslava: P77  
 Lima, João C.: S26  
 Lin, Chiahsin: S154  
 Linhart, Otomar: P77  
 Lipina, Olga: P104  
 Liu, Jibin: P106  
 Liu, Xiangjuan: S31  
 Liu, Xiaolin: S103  
 Liu, Zhong: P14  
 Lobo, Marina: P82  
 Lode, Anja: S95  
 Loi, Pasqualino: P17  
 Lomako, Viktoria: S48  
 Londero, Alejandra: P47  
 Lopez-Bejar, Manel: S88, P49  
 Louis, Gérard: S36  
 Loza-Alvarez, Pablo: S20, P29  
 Lucci, Carolina Madeira: S43  
 Lujic, Jelena: S96, S142  
 Lutsenko, Dmytro: S48  
 Lutsenko, Elena: P6  
 Luvoni, Gaia Cecilia: S90

## M

Ma, Hongbin: P102  
 Ma, Qing: P14

Machmutova, Indira: P84  
 Macías-García, Beatriz Macías-García: S10  
 Mahbubani, Krishnaa T. A.: S93  
 Mahony, Michael: S87, S106  
 Majer, Julia: S134  
 Malcotti, Valeria: P21  
 Malo, Clara: S163  
 Mancera, Ricardo: S116  
 Manokhina, Margaret: S144  
 Manuchehrabadi, Navid: S85  
 Marcec, Ruth: P50  
 Marco-Jimenez, Francisco: S173, P38, P39  
 Marinovic, Zoran: S96, S142  
 Marques, Lis: P30, P31  
 Marro, Monica: S20  
 Martín, Ignacio: P36  
 Martinez, Daysi: P79  
 Martinez, Emilio A.: P74, P75  
 Martinez, Julio A.: P63  
 Martínez, Juan Manuel: P36, P37  
 Martínéz-Campos, Enrique: S24  
 Martinez-de-Anda, Rocio: P63  
 Martínez-Fresneda, Lucía: P35  
 Martín-Maestro, Alicia: P8  
 Martsenyuk, Valentyna: P65  
 Martynova, Yuliia: P98  
 Masip, Martín: S60  
 Masoudi, Ali Akbar: P96  
 Masoudian, Nahid: S27  
 Mas-Pellicer, Alba: P39  
 Mathad, Rakesh: S75  
 Matsukawa, Kazutsugu: P17  
 Matsumoto, Toshikazu: P85  
 Mbogba, Momoh: P56  
 McGann, Locksley E.: S97, S124, P90  
 McKenna, Jarrod: S14  
 Medrano, Alfredo: P63, P79  
 Mehmood, Muhammad Usman: P73  
 Meiser, Ina: S134  
 Memon, Kashan: S137  
 Meneghel, Julie: S51, S176  
 Merati, Zahra: S13, P33  
 Merodio, Carmen: P61  
 Messina-Graham, Steven: S138  
 Meyer, Julia E.: S49  
 Miao, Christina: P44  
 Miklavčič, Damijan: S136  
 Milenko, Vladimir: P41  
 Miles, Stephanie: P89  
 Milne, Stuart: S51  
 Mitchell, Daniel: P19  
 Mitter, Neena: P22  
 Mobili, Pablo: S32  
 Mogas, Teresa: S88  
 Mohammad Yusof, Loqman: S104  
 Mohammadi Sangcheshmeh, Abdollah: S160  
 Mokrousova, Valentina: S170, P59  
 Molchanov, Alexey: P20

Molina Torres, Jorge: S115  
 Molina-García, Antonio Diego: S18, S37, P25, P26, P70  
 Moncalean, Paloma: S59  
 Montalbán, Itziar Aurora: S59  
 Monteiro, Matheus: P57, P58  
 Morató, Roser: S28  
 Morini, Marina: S143  
 Morrell, Jane: S10, S163  
 Morris, George: S51, S99, P29, P81  
 Morselli, Maria Giorgia: S90  
 Motta, Naiara: P78  
 Mousavi, Seyyed Mojtaba: S160  
 Movaghar, Bahar: P16  
 Murgas, Luis: P63, P78  
 Muro, Bruno: P58  
 Murray, Benjamin: P81  
 Mustapha Noordin, Mohammed: S104, P91  
 Mutsenko, Vitalii: S95, S135, S136, P42  
 Mykhailova, Olga: P55

## N

Nadri, Toubia: P68, P69  
 Nagel, Manuela: S113, S114, S117  
 Naidenko, Sergey: P59  
 Nancekievill, Alex: S51  
 Naprimerov, Vasilii: P59  
 Naseer, Zahid: S105  
 Nateghi, Reihane: S42  
 Navarro-Retamal, Carlos: S66  
 Nazari, Parisa: P34  
 Nebot Escrigues, Anna: S74  
 Nemanic, Sarah: S82  
 Nemati, Zahra: S114  
 Neubauer, Julia: S134  
 Newsom, Jackie: S9  
 Niedz, Randy: S150  
 Niihara, Yutaka: P92  
 Niino, Takao: P85  
 Nixon, Brett: S112  
 Nm, Shakuntala: S75  
 Nuñez, Pastora: P82  
 Nuñez Lendo, Carmela Isabel: S154  
 Nurmanov, Maksat: P84

## O

O'Brien, Chris: P22  
 Odintsova, Nelly: S140  
 O'Farrell, Joan M.: P66  
 Okotrub, Konstantin: S170, P59  
 Oldenhof, Harriëtte: S41, S100  
 Olgac, Kemal Tuna: P60  
 Oliva, Joan: P92  
 Oliveira, Alexmiliano: P78  
 Oliveira, Carlos: P30  
 Olmo Fernández, Alberto: S167  
 Olvera, Sergi: P49  
 Onofre, Jaime: S107  
 Orive, Gorka: S133

Orlova, Natalia: S47  
 Ortiz Escribano, Nerea: S128  
 Osborne, Robyn: S47  
 Ostankov, Maksim: P6, P7  
 Ostras, Daniil: S48  
 Ouellet, François: P97  
 Ozkavukcu, Sinan: P93, P94  
 Öztürk, Ali Erdem: S15

## P

Paczia, Nicole: P3  
 Pagáčová, Eva: S61  
 Palhares, Priscila: P63, P78  
 Pammenter, Norman W.: P25  
 Pan, Chao: P103  
 Pan, Jiaji: P64 P67  
 Pang, Vincent: S84, S103  
 Pangestu, Mulyoto: S14  
 Panhwar, Fazil: S63  
 Panis, Bart: S146  
 Papa, Frederico: P57  
 Papis, Krzysztof: S171  
 Pappu, Rohit: S69  
 Paredes, Estefania: S152, P32, P141  
 Parnpai, Rangsun: P52  
 Parrado-Gallego, Ángel: S126  
 Parrilla, Inmaculada: P74, P75  
 Parry-Jones, Alison: S121, S123  
 Passarelli, Marina: P58  
 Passot, Stephanie: S176, P29  
 Patil, Shivashankaragouda B: S75  
 Patra, Tanushree: S132  
 Paul, Ashit Kuma: P52  
 PE, Rajasekharan: S73  
 Peach, Jennifer: P89  
 Pedraz, Jose Luis: S133  
 Pedrosa, Ana Carolina: P57  
 Pegorini, Caio: P31  
 Peiren, Jindrich: S34  
 Pelosi, Sergio: P4  
 Pelufo, Valeria: P21  
 Peñaranda, David S: S173  
 Pence, Valerie: S148  
 Peng, Ji: S169, P67  
 Pénicaud, Caroline: P29  
 Pérez, Luz: S143  
 Pérez-Patiño, Cristina: P74, P75  
 Peris-Frau, Patricia: P8  
 Perret, Bruno: P29  
 Pešl, Martin: S57  
 Pestryakov, Alexey: S59  
 Peters, Esther: S154  
 Petrenko, Alexander Yu.: S95  
 Petridis, Nikolaos: S4  
 Petrov, Ilya: P65  
 Petrushko, Maryna: P62  
 Pezić, Tamara: S136  
 Phaeachamud, Thawatchai: P101  
 Picton, Helen: S70, P81  
 Pielak, Gary: S69  
 Piniaiev, Volodymyr: P62  
 Piszkievicz, Samantha: S69

Poisson, Jessica S.: S49, S50  
 Poltavtseva, Rimma: S56, P1, P2  
 Popova, Elena: S146  
 Příbyl, Jan: S57  
 Prieto, Jose A.: S33  
 Prieto-Martínez, Noelia: S28  
 Pritchard, Hugh: S74, S78, S79, S151  
 Pronina, Natalya: P41  
 Pšenička, Martin: S142  
 Puigcerver-Barber, Monica: P39  
 Puppo, Maria Cecilia: S17  
 Pusceddu, Claudio: S130  
 Pushpangadhan, Anushma: S73

## Q

Qiu, Juan: S31  
 Quinlan, Philip: S122

## R

Rabin, Yoed: S25  
 Rafael-Duran, Maricela: P79  
 Rahman, Sheikh Mustafizur: S94  
 Raju, Rekha: P28  
 Rakha, Bushra: S111, S162  
 Ramazani, Ali: P27  
 Ramírez, Noelia: P107, S126, P23, P24  
 Ramos, Viviana: S24  
 Rande-Gil, Francisca: S33  
 Rascón Díaz, Martha Paola: S115  
 Rashki Ghaleno, Leila: S110, P72  
 Reed, Barbara: P84, P86  
 Reis, Maria A. M.: S26  
 Ren, Shen: P67  
 Resende, Emiko: P30  
 Rezazadeh Valojerdi, Mojtaba: P16, P72  
 Riazi, Gholam Hossein: S157, S158  
 Riazi, Gholamhosein: P68, P69  
 Ribeiro, Ricardo: P30  
 Riesco, Marta: P36, P37  
 Rindfleisch, Tobias: S65  
 Ring, Hattie: S85  
 Risco, Ramon: S45, S89, S126, S167, P23, P24, P82, P107  
 Rittinghaus, Tim: S62, P51  
 Rivas Leonel, Ellen Cristina: S43, S45  
 Robles, Vanesa: P36, P37  
 Roca, Jordi: P74, P75  
 Rodina, Marek: S145  
 Rodrigo, Samuel: P24, P82  
 Rodrigues, Rômulo B.: P31  
 Rodríguez Riveiro, Rosalia: P32  
 Rodríguez-Gil, Joan E.: S28  
 Rodríguez-Martínez, Heriberto: P75  
 Romadanova, Natalya: P84, P86  
 Romanato, Filippo: S101  
 Romano, Nelson: S32  
 Roos, Yrjö: S1

Ropers, Marie Hélène: P29  
 Rosas Morales, Maria Alejandra: S115  
 Ross, Susan: S99  
 Rostami, Farnoush: S160  
 Rostamzadeh, Jalal: S13, P34  
 Rotrekl, Vladimír: S57  
 Rozanski, Corinna: P42  
 Rozenfeld, Christoffer: S143  
 Ruiz-Conca, Mateo: P49  
 Russell, Sandra R.: P66

## S

Sabbaghian, Marjan: S27  
 Sadri-Ardekani, Hooman: S71  
 Saeb-Parsy, Kourosh: S93  
 Saeidi-Sar, Sakineh: S27  
 Saenz, Jaime: S89  
 Saenz Del Burgo, Laura: S133  
 Şahin, İpek Nur: S15  
 Sakuma, Yoshinori: P85  
 Salar, Seckin: P93, P94  
 Salcedo, Jose: S129  
 San José, María Del Carmen: S147  
 Sanaei, Batool: P16  
 Sanchez, Pascual: P107  
 Sanchez, Pello: S133  
 Sanchez, Mikel: S133  
 Sánchez-Ajofrín, Irene: P8  
 Sanchez-Ballesta, Maite: P61  
 Sánchez-Moreno, Concepción: P88  
 Sansone, Giovanni: P4  
 Santiago Moreno, Julian: S111, S162, P35  
 Saragusty, Joseph: S22, S64  
 Sarangi, Sunil: S131  
 Sari, Fikret: S15  
 Sattar, Abdul: S105  
 Schebor, Carolina: S32  
 Schellander, Karl: P35  
 Schiff, Jeffrey: S129  
 Schneider, Maria: S102  
 Schneider Teixeira, Aline: P25, P26, P70  
 Schottelius, Alexander: S4  
 Sebire, Neil: S99  
 Seeto, Rebecca: S106  
 Seifert, Martina: S102  
 Seifi, Soroush: S76  
 Seify, Mohammad: P72  
 Selden, Clare: P13  
 Senula, Angelika: S113  
 Serre, Christophe: S120  
 Setthajindalert, Orn: P101  
 Shahali, Maryam: P27  
 Shahverdi, Abdolhossein: S11, S76, S110, S157, S158, S174  
 Shaliutina-Kolesova, Anna: P77  
 Sharafi, Mohsen: S11, S13, S76, S110, S157, S158, P68, P69, P76, P95, P96  
 Shardt, Nadia: S97, S124, P90

Shaw, Jill: S87  
 Shen, Xiaohui: P54  
 Sherry, Aubrey: S138  
 Shi, Yanbin: S31  
 Shpakova, Natalia: S47  
 Shu, Zhiqian: S169, P64, P67  
 Shylo, Oleksandr: S48  
 Sieme, Harald: S41  
 Silva, Jorge C.: S26  
 Silvestri, Fausto: P4  
 Simaioforidou, Anastasia: P42  
 Šimek, Daniel: S61  
 Simões, Pedro Nuno: P29  
 Sims, Jessica: S122  
 Singh, Ashwani Kumar: S16  
 Singh, Prahlad: S16  
 Siqueira, Pollyana: P78  
 Sirotinskaya, Vera: S135, P9  
 Sjunnesson, Ylva: S10  
 Skidmore, Julian A.: S163  
 Skládál, Petr: S57  
 Slater, Nigel K. H.: S93  
 Smits, Katrien: S128  
 Soler, Ana: P8  
 Sommer, Annika: S134  
 Stachowiak, Ewa: S171  
 Stanislavovich, Tatiana: P20, P43  
 Sterba, Jan: P77  
 Stock, Ulrich: S102  
 Streit Jr, Danilo P.: S156, P30, P31  
 Strüßmann, Carlos Augusto: S94  
 Stubbs, Chris: S40  
 Su, Fengmin: P102  
 Sugishita, Yodo: S72  
 Sui, Xiaojie: P103  
 Sukhikh, Gennady: S56, P1, P2  
 Sun, Sammy: P44  
 Surovtsev, Nikolay: S170  
 Suzuki, Nao: S72  
 Suzuki, Toru: S94  
 Svoboda, Petr: P87  
 Swanson, William F.: S9  
 Sydykov, Bulat: S41, S95, S136, P42  
 Szurek, Edyta: P175

## T

Taboga, Sebastião: S45  
 Tamura, Shinnosuke: P17  
 Tan, Yuansheng: S83  
 Tanaka, Daisuke: P85  
 Tarusin, Dmytro: S135, P42  
 Taylor, Mike: S25, S85  
 Tejeda, Guzmán: S4  
 Tekin, Koray: S108  
 Temple-Smith, Peter: S14  
 Teplá, Olga: S61  
 Tesfaye, Dawit: P35  
 Thalhammer, Anja: S65, S66  
 Thibault, Tim: S76  
 Thierry, Ameglio: S120  
 Thiruganam, Arunachalam: S131

Tin, Josette: S76  
 Tirpan, Mehmet Borge: S159, P18  
 Toma, Sameh: P44  
 Toner, Mehmet: S168  
 Tonissi, Laura: P30  
 Topal Çelikkan, Ferda: S44, P93, P94  
 Torres, Mariana: P57, P58  
 Totonchi, Mehdi: S110  
 Towhidi, Armin: P68, P69, S160  
 Trager, John: S76  
 Trezzi, Jean-Pierre: P3  
 Tucker, Auriana: P50  
 Turner, Tracey R.: S49, S50  
 Tymkovych, Maxym: S135, P51

## U

Ulagappan, Kamatchi: S114  
 Upton, Rose: S106, S112  
 Urbányi, Béla: S96, S142

## V

Valcarce, David: P36, P37  
 Valle Arizaga, Miriam: P85  
 Van Soom, Ann: S128  
 Vance, Carrie: P50  
 Vandamme, Peter: S34  
 Vanderzwalmen, Pierre: S91  
 Varga, Krisztina: S61  
 Vargas, Patricia: P107  
 Varghese, Bobby: P25  
 Vásquez-Rivera, Andrés: S100, S101  
 Vaziry, Asad: P34  
 Vendrell Flotats, Meritxell: S88  
 Venturino, Andrés: P21  
 Vera-Donoso, Cesar D: P38  
 Verdier, Jerome: S52  
 Vicente, Jose S.: P38, P39, S173  
 Vierung, Elisa: P5  
 Vilela, Janice Miranda  
 Vasconcellos: S43  
 Vincent, Linta: S73  
 Vollmer, Rainer: S118, S146  
 Vysekantsev, Igor: P65

## W

Wallgren, Margareta: S10  
 Walters, Christina: S92, S149  
 Wang, Jue: P14  
 Wang, Zengtao: S84  
 Warner, Ross: S82, S127  
 Watanabe, Manabu: S94  
 Weegman, Bradley: S85  
 Wehner, Frank: S60  
 Wen, Bin: P83  
 Weng, Lindong: S168  
 Werneburg, Glenn: S129  
 Whale, Thomas: P81  
 Williams, Sara: P10, P11  
 Winkler, Jürgen: S134  
 Winner, Beate: S134  
 Woelders, Henri: S128, S161

Wolkers, Willem F.: S2, S41, S95, S100, S101, S136, P42  
 Wong, Lesley: S106  
 Woods, Erik: S138  
 Wooi, Khim: S87  
 Wowk, Brian: S81  
 Wright, Greg: S98  
 Wu, Kezhou: S97, S124, P90  
 Wu, Yongren: S98  
 Wulf, Manuela: S10  
 Wuliji, Tumen: S172  
 Wuri, Liga: S172  
 Wyban, Robert: S171

## X

Xin, Miaomiao: P77

## Y

Yaghoobi, Ramin: P27  
 Yamamoto, Shin-Ichi: P85  
 Yamamoto, Yoji: S94  
 Yang, Huaqing: S41  
 Yang, Jing: P103  
 Yang, Tianhang: P67  
 Yao, Hai: S98  
 Yeste, Marc: S28  
 Yin, Yundi: P14  
 Yoshizaki, Goro: S96  
 Yurchuk, Taisiya: P62  
 Yusof, Loqman: P91

## Z

Zamecnik, Jiri: S23  
 Zampolla, Tiziana: P12  
 Zandiyeh, Aaced: S27  
 Zaragotas, Dimitris: P42  
 Zeinoaldini, Saced: P68, P69  
 Zelinski, Mary: S85  
 Zemlianskykh, Nina: P55  
 Zetterberg, Henrik: P3  
 Zhan, Li: S153  
 Zhandi, Mahdi: S160, P68, P69  
 Zhang, Huan: S24  
 Zhang, Jinmei: S77, S119  
 Zhang, Lei: P103  
 Zhang, Shu-shan: S12  
 Zhang, Tiantian: S156  
 Zhao, Gang: S63, S137, P56  
 Zhao, Nannan: P102  
 Zhou, Xiaoming: P14  
 Zhou, Yuanchang: S119  
 Zhu, Zhaowei: S84, S103  
 Zhumabaeva, Beybitgul: P86  
 Ziaei, Maryam: P27  
 Ziaei, Shima: S38  
 Zimmermann, Heiko: S134  
 Zouhair, Sabra: S101  
 Zuchowicz, Nikolas: S154



The background of the poster features a panoramic view of San Diego. In the foreground, a large marina is filled with numerous sailboats and yachts. Beyond the water, the San Diego city skyline is visible, including several prominent skyscrapers. In the far background, the San Diego mountains rise under a clear blue sky. A large blue circle with a white border is superimposed over the center of the image, containing the event title.

**CRYO  
2019**

**Save the Date**

**SAN DIEGO**

**July 22-25 2019**

**Sheraton San Diego Hotel & Marina**

---