

NEWSLETTER 2021, #03 – March

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[bySIBPA] XXV Congress SIBPA 2021 – ONLINE MEETING

XXV Congresso Nazionale – SIBPA 2021 – 28.6-1.7/2021



Care Socie, cari Soci

a causa della grave crisi sanitaria che si protrae dallo scorso anno, alcune attività della Società di Biofisica Pura e Applicata sono state ridotte, rinviate o addirittura cancellate. Tra di esse rientra il Congresso della Società, inizialmente previsto a Parma nel mese di luglio 2020 e che è stato rimandato al 2021, nella speranza che un miglioramento della pandemia ne consentisse lo svolgimento in presenza. Purtroppo, nonostante il piano vaccinale in atto, l'andamento attuale dei nuovi contagi e le previsioni per i prossimi mesi sconsigliano ancora lo svolgimento del convegno con modalità tradizionali all'inizio della prossima estate.

Dal momento che un ulteriore rinvio appare sconsigliabile, **il Consiglio Direttivo, valutata la situazione, ha preso la decisione di proporre lo svolgimento con modalità on line.**

Questo consentirà alla comunità di biofisici che gravita attorno a SIBPA di riunirsi per presentare e discutere le proprie attività di ricerca e offrirà un'occasione di incontro, seppur virtuale, tra i soci, opportunità importante soprattutto per i più giovani, che nel loro percorso di formazione maggiormente necessitano di questi momenti di confronto. Momento importante per la Società è il conferimento, durante il convegno, dei premi SIBPA (Borsellino, Menestrina e Marina Diana Mercurio-SIBPA). Da ultimo, in occasione del congresso si terrà l'assemblea dei soci con il rinnovo degli organi direttivi della Società.

Come preannunciato ad inizio anno, le **date previste per il convegno** saranno quelle inizialmente individuate per lo svolgimento presso l'Università degli Studi di Parma, ovvero dal **28 giugno al 1 luglio 2021.**

Il Consiglio Direttivo attualmente in carica sta procedendo a definire il programma e le modalità di svolgimento. Riceverete a breve ulteriori dettagli a riguardo.

Informazioni e aggiornamenti saranno resi disponibili anche sul sito della Società all'indirizzo: www.sibpa.it

Nel darvi appuntamento al congresso SIBPA, al quale speriamo possiate partecipare numerosi, vi inviamo i nostri più cordiali saluti

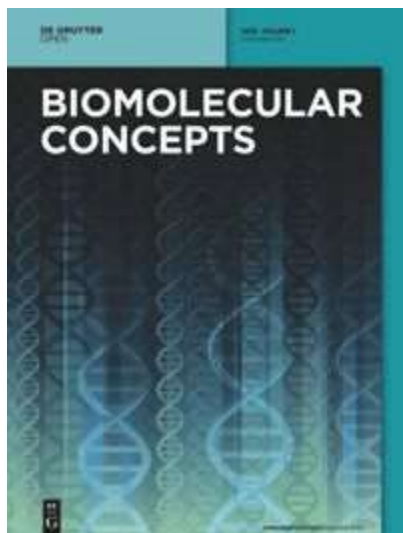
Il Consiglio Direttivo SIBPA

[bySIBPA] SIBPA signs a partnership with BioMolecular Concepts (De Gruyter)

Care Socie, cari Soci

con la fine del 2020 ha avuto termine il rapporto di collaborazione tra SIBPA e Biophysical Chemistry che, per diversi anni, ha permesso a SIBPA di usufruire di una sede editoriale di ottimo livello per la pubblicazione delle *special issues* derivate dal congresso biennale della Società. Sebbene la collaborazione formale abbia avuto termine, è presumibile che i soci SIBPA continuino comunque a scegliere Biophysical Chemistry per pubblicare parte dei risultati delle loro ricerche. Al comitato editoriale e all'editor in chief vanno i nostri ringraziamenti per la fruttuosa e fattiva collaborazione di questi anni.

SIBPA ha recentemente siglato un accordo di durata biennale con BioMolecular Concepts (BMC), rivista internazionale del gruppo editoriale De Gruyter (<https://www.degruyter.com/journal/key/BMC/html>).



La rivista, che utilizza uno schema di pubblicazione open access, ha un'ottima collocazione editoriale anche per quanto riguarda il ranking (nel 2019 su Scopus il valore di Citescore è 6.9, corrispondente all'85° percentile nella subject category *General Biochemistry, Genetics and Molecular Biology*, la rivista è in attesa di attribuzione di *impact factor* da Clarivate Analytics). Vi invitiamo a visitare il sito della rivista riportato di sopra.

BMC e SIBPA concordano di collaborare beneficiando mutuamente dei punti di forza del partner e di sostenere il raggiungimento di obiettivi comuni della collaborazione.

All'interno dell'accordo di collaborazione, BMC offrirà una sede editoriale per le pubblicazioni di SIBPA, sia per pubblicazioni ordinarie, sia per pubblicazioni parte di *special/topical issues*, incluso il numero speciale derivato dal congresso biennale SIBPA. Grazie alla generosa offerta del managing editor e dell'Editor in chief, prof. Enrico Di Cera, i soci SIBPA in regola con il pagamento della quota sociale potranno pubblicare i loro lavori scientifici su Biomolecular Concepts senza costi per i prossimi due anni (fino al termine del 2022). BMC contribuirà economicamente a sostenere le spese di svolgimento del prossimo convegno SIBPA.

Dal canto suo, SIBPA si impegna a sostenere BMC nella sua attività editoriale contribuendo lavori scientifici di elevata qualità. Il Consiglio Direttivo SIBPA invita pertanto i soci a considerare fin da subito Biomolecular Concepts per la pubblicazione dei propri lavori.

Vi invieremo quanto prima le istruzioni relative al processo di invio dei lavori a BMC, in modo da poter usufruire delle favorevoli condizioni di pubblicazione che non prevedono spese di APC.

Con i nostri più cordiali saluti,

Il Consiglio Direttivo di SIBPA

[CfPo] [Ebsa] King's College London Mechanics biophysics PHD programmes

Two PHD programmes are currently open for recruitment at King's College London.

The Biological Physics Across Scales (BiPAS) and Mechanics of Life Leverhulme Doctoral Scholarship Programme are both directed by Professor Sergi Garcia-Manyes, these are multi-disciplinary programmes and they offer fully funded studentships for 3.5 years.

Recruitment is open until 12th April 2021, please share within your networks.

For any queries please contact bipas-cdt@kcl.ac.uk for the BiPAS programme and mechanicsoflife@kcl.ac.uk for the Mechanics of Life programme.

Carolyn Charlton, Senior PGR Officer

Faculty of Natural and Mathematical Sciences
King's College London

[CfPo] [Ebsa] PhD studentship in Computational Life Sciences, Zagreb (Croatia)

Group for Computational Life Sciences, Division of Physical Chemistry at Ruđer Bošković Institute, Zagreb (Croatia) offers a PhD studentship. Candidates will be accepted who have completed a study in physics or chemistry, mathematics or electronics and computational science.

The doctoral thesis work will be done mostly at the Ruđer Bošković Institute in Zagreb under the mentorship of prof.dr. Ana-Sunčana Smith, while the student will be enrolled in the doctoral school at FAU Erlangen Nürnberg (Germany) and receive a german doctorate (PhD) from FAU.

The research area is open, and includes topics from theoretical statistical physics with emphasis on non equilibrium stochastic processes, cell and tissue biophysics, applied mathematics and computing, and also, modeling of physical and chemical processes of active material surfaces.

The duration of the contract is 4 years. Annual salary is approx. 17000 EUR (gross) and comprises health insurance, and social/pension contributions and also local travel costs to and from work, as per Croatian regulations and statutes for employees in science and higher education.

The person will work in an interesting and dynamic international environment and work closely with prof. Smith group in Germany. Student should expect occasional travel and study stays in Germany and continuous training and learning opportunities will be provided.

Applicants should meet the requirements listed here:

<https://euraxess.ec.europa.eu/jobs/613008>

- university graduate diploma or integrated study diploma in physics, chemistry, mathematics or electrical engineering and computer science with excellent overall average of grades at previous levels of study (undergraduate, graduate or integrated studies) that ensures admission to doctoral studies
- motivation letter in English proving interest in the thesis subject of modeling in the field of advanced materials and biophysics

Additional criteria:

Rector's award, success in scientific competitions, participation in scientific conferences, published scientific papers.

It is desirable that applicants enclose letters of recommendation.

contact: smith@physik.fau.de

Deadline for applications is 9.4.2021., 23:00 Brussels time.

[CfPo] [Ebsa] Innova XN PhD position in Grenoble, FRANCE: Nanostructural characterisation of protein interactions with lipid bilayer membranes - basis for biosensor development

CONTEXT & JOB DESCRIPTION

Project Title: Nanostructural characterisation of protein interactions with lipid bilayer membranes: basis for biosensor development

This PhD project is in the field of biosensors based on nanostructured biomimetic tethered lipid bilayers (tBLM) to detect plasma proteins.

These proteins are used as biomarkers of severe pathologies including cancer, but their detection is difficult due to their relatively low abundance.

Often present in glycosylated form they form complexes with lipids in order to be transported in the blood. A lipidic environment is thus an appropriate environment for a biosensor, also including the capturing antibody, to detect all biomarkers bound to protein/lipid complexes in blood samples.

A proof-of-concept biosensor utilising tBLM connected to an Impedance Spectroscopy was developed recently for the detection of a glycosylate protein cancer biomarker soluble VE-cadherin by utilizing a tBLM produced by SDx Tethered Membranes Pty Ltd. The PhD student will perform a nanostructural characterisation of the interaction between peptide and protein biomarkers and tBLM, and will identify the role of the lipid part to modulate the interaction between tBLM and specific peptides and proteins.

These fundamental results will provide the basis for biosensors and analytical procedures that can detect scarce biomarker proteins from other high-abundance proteins and from lipidic moieties in blood samples. The biosensors envisaged are based on nanostructured tBLM in which we have optimised the lipid composition for specific proteins interactions.

Further information may be obtained from:

Giovanna Fragneto (email:fragneto@ill.fr)

Marco Maccarini (email:marco.maccarini@univ-grenoble-alpes.fr)

Donald Martin (email:donald.martin@univ-grenoble-alpes.fr)

EXPECTED PROFILE

- Degree allowing enrolment for a PhD (such as MSc, Master 2 de Recherche, Laurea or equivalent) in physics, materials science, chemistry or closely related science
- A background in large scale facilities experiments (neutron and x-ray scattering), and knowledge computer programming (C++, Python) would be an advantage
- Ability in handling of biological materials would be an advantage
- Proficiency in English (A proof of upper-intermediate level would be advantageous and can be provided in the application. Applicants originating from native-English-speaking countries can apply without the need for proof of level. An official degree conducted in English will be also accepted as a proof; Students without proof upper-intermediate level may still apply and their level of English will be checked during the interview).
- Compliance with the Marie Skłodowska-Curie mobility rule: candidates may not have resided or carried out their main activity (work, studies, etc.) in France for more than twelve months in the three years immediately before the date of recruitment.
- At the date of recruitment, early-stage researchers must be in the first four years of their research careers and have not yet been awarded a doctoral degree.
- Candidates must satisfy eligibility criteria according to the partner university requirements for PhD enrolment.

More details about the application procedure on www.innovaxn.eu/for-students/documents/

WORKING CONDITIONS

The successful candidate will be enrolled in the doctoral school of Université Grenoble Alpes and based full-time at the ILL (Grenoble, France), other than a 3-month secondment at SDX-membranes (Roseville, Australia).

Additional visits totaling no more than 3 months may be made to the University Grenoble Alpes when needed. Furthermore, a varied pedagogical training programme will be offered to the successful candidate throughout the 3-year PhD project.

Interested candidates can send an on-line application at the link below:

https://esrf.gestmax.eu/1482/1/phd-position-nanostructural-characterisation-of-protein-interactions-with-lipid-bilayer-membranes/en_US

[CfPo] Postdoc Position at IBBC-CNR, Napoli



Consiglio Nazionale delle Ricerche

Istituto di Biochimica e Biologia Cellulare
Institute of Biochemistry and Cell Biology**Postdoc position**

This is a preliminary informal survey, seeking an outstanding candidate to fill a postdoctoral position aimed at potentiating the human capital that supports the Advanced Light Microscopy Italian Node of Euro Bioimaging, hosted by the Institute of Biochemistry and Cell Biology, Naples site.

Research theme: Enhancement of the advanced intravital microscopy platform for the study of cell systems, tissues and organs in *in vivo* mouse models.

Type of activity envisaged: Participation in technical-scientific activities related to research projects / programs related to *in vivo* analyses of: i) signals generated by fluorescent biosensors in single cells, tissues and organs; ii) tumor progression in mouse models and optochemogenetics.

Qualifications: Master's Degree in Physics or Engineering, plus Ph.D. in topics related to the research theme.

Skills: Experience in Confocal Microscopy or related disciplines.

Duration and amount: The position will be initially assigned for a period of 12 months and can be extended up to 36 months pending mutual satisfaction. The amount, paid in deferred monthly instalments, is set at €22,000.00 net of the charges to be borne by the CNR. The contractor is covered by a cumulative accident policy signed by the CNR. The contractor carries out the activity in conditions of autonomy, within the limits of the program prepared by the research manager, without predetermined working hours.

Presumed starting date: 01 July 2021 (could be delayed due unforeseeable events).

Environment: The Naples Euro-Biolmaging ERIC facility located at the IBBC in CNR Research area NA-1 is a continuation of the imaging facility developed by Alberto Luini and colleagues at the Mario Negri Sud Institute for Biomedical Research in the 1990s that pioneered the development of the modern Correlative video-Light Electron Microscopy (CLEM). It is the coordinating facility of the Advanced Light Microscopy Italian multi-modal multi-sited Node of Euro-Biolmaging, a pan European research infrastructure project (for more information see: <http://www.eurobioimaging.eu/>). It is managed and operated by the IBBC. The Naples Euro-Biolmaging facility (and all other Euro-Biolmaging facilities in the participating countries) started their interim operation since May 2016.

Contact: Qualified candidates should send a cover letter specifying "Code CIR01_00023_458592", detailing research interests and long-term career goal, CV, copies of relevant publications to Prof. Fabio Mammano, e-mail: fabio.mammano@cnr.it.

[bySIBPA] Organizzazione evento AIC-BMM

Cara Socia, caro Socio della SIBPA,

la nostra società ha ricevuto un invito da parte della **sezione di macromolecole biologiche** dell'**Associazione Italiana di Cristallografia** (AIC) a partecipare ad un webinar, previsto per il 7 giugno, nel quale presentare, attraverso un intervento di circa 15 minuti, **le attività di ricerca dei gruppi SIBPA** che possano costituire dei **punti di contatto** tra le due associazioni, da cui potrebbero emergere **future collaborazioni**.

Il Consiglio Direttivo della SIBPA ci ha incaricato di organizzare l'intervento della SIBPA al webinar. Per fare in modo che questo intervento sia significativo e realmente rappresentativo della nostra società, abbiamo pensato di raccogliere **una lista di lavori scientifici pubblicati** da membri della SIBPA che possano essere di interesse per la sezione di macromolecole biologiche dell'AIC.

Se ritieni che la tua attività o quella del tuo gruppo possa essere, almeno per alcuni aspetti, di interesse nel contesto del webinar, ti invitiamo a **inviarci un lavoro** rappresentativo da te pubblicato e una **breve descrizione** che ne descriva gli aspetti più rilevanti per la comunità di cristallografia.

La **scadenza** entro la quale mandare queste informazioni è fissata al **30 aprile 2021**. Gli indirizzi email a cui inviare le informazioni sono riportati di sotto.

Una volta raccolte, queste pubblicazioni costituiranno la base su cui preparare il nostro intervento al webinar.

Grazie della collaborazione,

Vincenzo Martorana (vincenzo.martorana@cnr.it)

Valeria Rondelli (valeria.rondelli@unimi.it)

Francesco Spinozzi (f.spinozzi@univpm.it)

[CS/WB] Dan H. BAROUCH, Harvard Medical School - 31/03/2021



 Istituto di Tecnologie Biomediche
Consiglio Nazionale delle Ricerche



UNIVERSITÀ DI PISA

presentano

Dan H. Barouch, M.D. Ph. D.

*Center for Virology and Vaccine Research
Beth Israel Deaconess Medical Center
Harvard Medical School*

“COVID-19: DEVELOPING A VACCINE DURING A PANDEMIC”

Mercoledì 31 Marzo 2021, ore 15:45

<https://www.youtube.com/c/MediaEventiUnipi/live>

*Il Professor **Dan H. Barouch** ha ricevuto il Ph. D. In Immunologia dall'Università di Oxford e il suo M.D. dalla Harvard Medical School. Il Prof. Barouch è attualmente William Bosworth Castle Professor of Medicine and Professor of Immunology alla Harvard Medical School, Direttore del Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center, membro del Ragon Institute of MGH, MIT, and Harvard, e componente della Bill & Melinda Gates Foundation Collaboration for AIDS Vaccine Discovery.*

Il suo laboratorio è attivo nello studio dell'infezione da HIV-1 e nello sviluppo di nuovi vaccini e strategie correlate. Il suo gruppo ha anche applicato la propria competenza nello sviluppo di nuovi vaccini allo studio preclinico e clinico di malattie infettive di rilevanza globale, tra cui quelle dovute a Zika Virus e tubercolosi.

Recentemente il gruppo del Prof. Barouch ha sviluppato il vaccino contro SARS-CoV-2 il virus che causa COVID-19, commercializzato a livello mondiale da Johnson & Johnson e approvato per utilizzo di emergenza in USA da FDA e in Europa da EMA.

Info e contatti:

- **Dr. Ranieri Bizzarri**, Dipartimento di Patologia Chirurgica, Medica, Molecolare e dell'Area Critica, Università di Pisa. ranieri.bizzarri@unipi.it
- **Dr. Elena Levantini**, Istituto di Tecnologie Biomediche, Consiglio Nazionale delle Ricerche. elena.levantini@itb.cnr.it

[CONGR] [Ebsa] 13th European Biophysics Congress (Vienna, July 24-28, 2021) organized as a Hybrid meeting (On-site & Online)

<https://www.ebsa2021.org/>



Dear Colleagues, dear Friends!

This is a quick update on the upcoming EBSA 2021 Congress in Vienna:

- **The conference is on track!** We have assembled an exciting program, with prestigious plenary and key-note speakers and well-balanced scientific sessions. All invited speakers have already confirmed their **on-site participation!**
- **You matter!** It is you who will make the congress an exciting event. Please be an EBSA 2021 ambassador and help spread the word to colleagues to register for Abstract submission!
- **Hybrid conference:** as planned, the meeting will be held as a hybrid conference.
 - Each session will be double-chaired to establish a good mix between on-site and virtual participants.
 - We will have highly interactive breaks with coffee & cake for on-site participants and attractive meeting rooms for virtual participants.
- **Full flexibility** in your choice between on-site and virtual participation. You can switch at any time point before the conference starts, from on-site to virtual participation. Your Registration Fee will be adjusted accordingly, and any excess payment will be refunded to you.
- **Vienna will provide a warm and safe welcome for you!** Particularly, we are continuously monitoring COVID regulations of the different countries and we will adapt the on-site safety measures accordingly.

Abstract submission deadline: 31 March 2021

Elena E. Pohl, Congress Chair

Organization & Scientific Committee



[Ebsa] Extension of deadline: Bursary applications to EBSA Congress 2021

Please note that the deadline for **bursary applications** has been extended. **The new deadline is April 2.**

Full information of the Conference: <https://www.ebsa2021.org/>

[CS/WB] [Ebsa] Biophysics Week EBSA Talk by Dr. Yaser Hashem: Single particle cryo-electron microscopy (Zoom, March 26)

Dear friends,

Enclosed you can find the abstract of the Lecture that will be given by our recently selected new **EBSA Young Investigator Award, Yaser Hashem**, from Université de Bordeaux, as a contribution to the Biophysics Week.

It will be entitled: "**Single particle cryo-electron microscopy: A method of choice for solving large and heterogeneous molecular complexes**", and it will be given this week, **Friday March 26th at 15:00 CET**, via Zoom. The link to follow the lecture (up to 300 people) will be:

<https://zoom.us/j/92238329231?pwd=RkFjK2lpRXdtR3FIMHBCSVVVeFpnQT09>

Best regards,
Jesus Perez-Gil

BIOPHYSICS WEEK EBSA LECTURE**Single particle cryo-electron microscopy: A method of choice for solving large and heterogeneous molecular complexes**

Dr. Yaser Hashem, Université de Bordeaux, EBSA Young Investigator Award 2021

Friday, March 26th 15:00

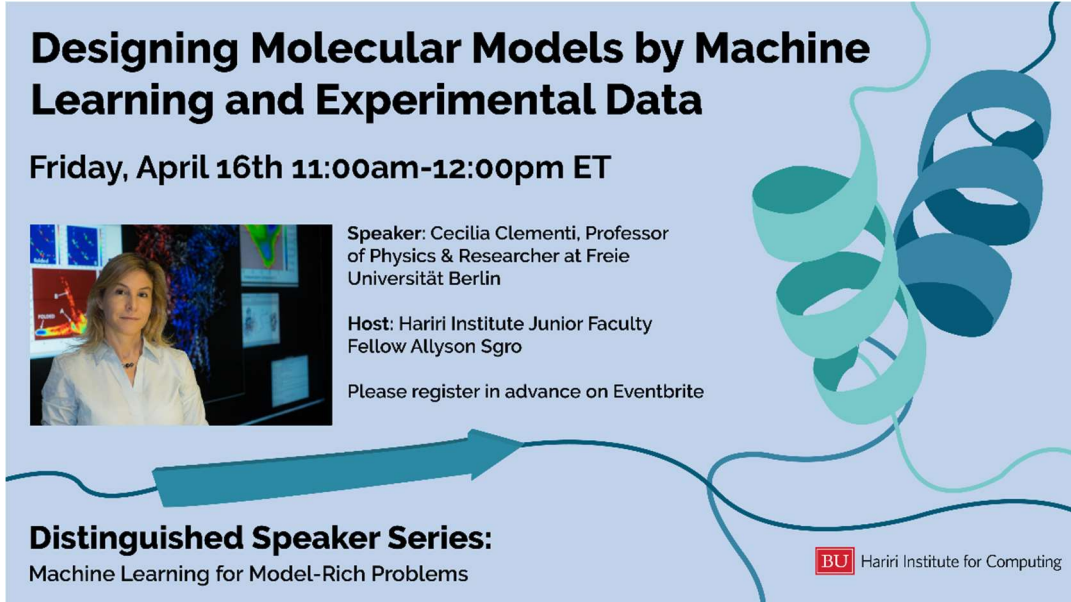
Functions of biomolecules are directly tied to their structures. Methods such X-ray crystallography and nuclear magnetic resonance (NMR) can offer an atomic view on biomolecules. However, solving structures of increasingly large molecules is not possible with NMR and becomes very challenging with X-ray crystallography, especially when the structures exhibit intrinsic structural heterogeneity, rendering them difficult to crystallize. In addition, the quality and validity of X-ray structures may be compromised by artifacts related to crystal packing and the use of different crystallization agents that do not exist in living cells.

Today, single-particle cryogenic electron microscopy (cryo-EM) became incontestably the way to go in solving the structures of various molecular complexes and nanomachines, especially when the size surpasses several hundred kilo Daltons. Historically, the development of cryo-EM was linked to several molecules such as the ribosomes, which were used to develop, benchmark and test the technique. Indeed, the ribosome provided a sturdy large nano object that is abundant and easy to obtain from most cells. However, it was rather surprising to slowly realize, step by step, the paramount number of different complexes and the incalculable multiplicity of conformations, orientations and shapes that this central molecule can adopt on its long path of mRNA translation into proteins.

Here, after an introduction on cryo-EM general principles, I will present few molecular stories from the book of mRNA translation where the technique has proven to be the best storyteller.



[CS/WB] [Ebsa] Boston University's Hariri Institute for Computing: Seminar by Cecilia Clementi - Designing Molecular Models by Machine Learning and Experimental Data



Designing Molecular Models by Machine Learning and Experimental Data

Friday, April 16th 11:00am-12:00pm ET

Speaker: Cecilia Clementi, Professor of Physics & Researcher at Freie Universität Berlin

Host: Hariri Institute Junior Faculty Fellow Allyson Sgro

Please register in advance on Eventbrite

Distinguished Speaker Series:
Machine Learning for Model-Rich Problems

BU Hariri Institute for Computing

On Friday April 16, 11:00am-12:00pm ET, [Cecilia Clementi](#), the Einstein Professor of Physics at Freie Universität (FU) Berlin, will discuss how machine-learning methods can be used to design optimal coarse models for complex macromolecular systems as part of our Distinguished Speaker Series in Boston University Hariri Institute for Computing: *Machine Learning for Model-Rich Problems*

<https://www.einsteinfoundation.de/en/people-projects/einstein-visiting-fellows/cecilia-clementi/>

To attend this virtual series, we ask folks to register via Eventbrite in advance. The Zoom login information will be in the registration confirmation email. Click here to register:

<https://www.eventbrite.com/e/machine-learning-for-model-rich-problems-5-distinguished-speaker-events-tickets-144494867037>

The series will feature talks from four leading innovators working at the interface of machine learning and theory-driven modeling in astrophysics, biophysics, economics, and structural design. The speakers will speak both individually and together, about how to incorporate the benefits of data-driven machine learning in disciplines that are already rich in theory-driven models.

[Newsletter closed on 24/03/2021]