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6. AUTHORS Dr. Nicholas Abbott			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
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7. PERFORMING ORGANIZATION NAMES AND ADDRESSES Gordon Research Conferences, Inc. 512 Liberty Lane West Kingston, RI 02892 -1502			8. PERFORMING ORGANIZATION REPORT NUMBER		
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13. SUPPLEMENTARY NOTES The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other documentation.					
14. ABSTRACT The Gordon Research Conference and Seminar on Liquid Crystals was held at University of New England in Biddeford, Maine from June 20-26, 2015. The Conference was well-attended with 151 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 151 attendees, 67 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 67 respondents, 26% were Minorities, 70% Hispanic, 100% Asian and 0% African.					
15. SUBJECT TERMS Final Report					
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON	
a. REPORT	b. ABSTRACT			Nicholas Abbott	
UU	UU	UU		19b. TELEPHONE NUMBER	
				608-265-5278	

Report Title

Final Report: 2015 Liquid Crystals Gordon Research Conference and Gordon Research Seminar

ABSTRACT

The Gordon Research Conference and Seminar on Liquid Crystals was held at University of New England in Biddeford, Maine from June 20-26, 2015. The Conference was well-attended with 151 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 151 attendees, 67 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 67 respondents, 26% were Minorities – 7% Hispanic, 19% Asian and 0% African American. Approximately 45% of the participants at the 2015 meeting were women.

The Seminar was well-attended with 56 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 56 attendees, 20 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 20 respondents, 35% were Minorities – 5% Hispanic, 30% Asian and 0% African American. Approximately 27% of the participants at the 2015 meeting were women.

Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

<u>Received</u>	<u>Paper</u>
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TOTAL:

Number of Papers published in peer-reviewed journals:

(b) Papers published in non-peer-reviewed journals (N/A for none)

<u>Received</u>	<u>Paper</u>
-----------------	--------------

TOTAL:

Number of Papers published in non peer-reviewed journals:

(c) Presentations

Number of Presentations:

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

(d) Manuscripts

Received Paper

TOTAL:

Number of Manuscripts:

Books

Received Book

TOTAL:

Received Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

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PERCENT SUPPORTED

FTE Equivalent:

Total Number:

Names of Post Doctorates

NAME

PERCENT SUPPORTED

FTE Equivalent:

Total Number:

Names of Faculty Supported

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
FTE Equivalent:	
Total Number:	

Names of Under Graduate students supported

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Total Number:	

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This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period:

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The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:.....

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):.....

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:.....

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Names of Personnel receiving masters degrees

<u>NAME</u>
Total Number:

Names of personnel receiving PHDs

<u>NAME</u>
Total Number:

Names of other research staff

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
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GORDON RESEARCH CONFERENCES

2015 Liquid Crystals GRC/GRS

FINAL PROGRESS REPORT

Army Research Office

Grant Number W911NF-15-1-0288

The Gordon Research Conference on Liquid Crystals was held at University of New England in Biddeford, Maine from June 21-26, 2015. The Conference was well-attended with 151 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 151 attendees, 67 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 67 respondents, 26% were Minorities – 7% Hispanic, 19% Asian and 0% African American. Approximately 45% of the participants at the 2015 meeting were women.

The Gordon Research Seminar on Liquid Crystals was held at University of New England in Biddeford, Maine from June 20-21, 2015. The Conference was well-attended with 56 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 56 attendees, 20 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 20 respondents, 35% were Minorities – 5% Hispanic, 30% Asian and 0% African American. Approximately 27% of the participants at the 2015 meeting were women.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

Thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Sincerely,

Nicholas Abbott Conference Chair

University of Wisconsin

Zoey S Davidson, Seminar Chair

University of Pennsylvania

Liquid Crystals

Gordon Research Conference

Liquid Crystallinity in Soft Matter at and Beyond Equilibrium

Dates

June 21-26, 2015

Location

University of New England
Biddeford, ME

Organizers

Chair:
Nicholas L. Abbott

Vice Chairs:
Linda S. Hirst & Torsten Hegmann

Meeting Description

The 2015 Gordon Conference on Liquid Crystals will provide a forum for an in-depth discussion of ideas at the frontier of liquid crystal science and technology, broadly defined. Understanding the underlying physics, chemistry, and biology of systems that possess liquid crystallinity will be emphasized.

The conference will bring together an outstanding group of researchers working at the forefront of interdisciplinary topics involving liquid crystals, including (i) active and living systems, (ii) supramolecular chemistry and multifunctional materials, (iii) liquid crystalline glasses and metastable phases, (iv) liquid crystallinity in biological systems, (v) colloids, interfaces and topological defects, (vi) chemical synthesis and characterization of new phases, (vii) plasmonic, electrooptical and sensor applications and (viii) lyotropic phases, including colloidal and chromonic systems. These topics will encompass low molecular weight, polymeric and elastomeric liquid crystalline materials, composites of liquid crystals, and nanostructured and self-assembled systems where concepts in liquid crystallinity are important. The program will include talks that address these topics through experiment, theory and simulation, and it will also integrate fundamental and applied perspectives.

The participants will include invited speakers representing both academia and industry with a wide range of expertise in the topic areas. The group of participants will include a good number of junior scientists and graduate students, who will be given the opportunity to present posters, short talks and join in discussion. Free time and evening sessions will provide the opportunity to foster networking between students and junior researchers, to make connections with many of the leading scientists from a wide variety of fields, and to establish exciting collaborations.

Related Meeting



This GRC was held in conjunction with the "Liquid Crystals" Gordon Research Seminar (GRS). Refer to the [associated GRS program page](#) for more information.

Contributors



Liquid Crystals

Liquid Crystals Reviews



Soft Matter



Langmuir



Meeting Program

Sunday

2:00 pm - 9:00 pm Arrival and Check-in

6:00 pm Dinner

7:30 pm - 7:40 pm Welcome / Introductory Comments by GRC Site Staff

7:40 pm - 9:30 pm **Active and Living Systems**

Discussion Leader: **Tom Lubensky** (University of Pennsylvania, USA)

7:40 pm - 8:10 pm **Julia Yeomans** (University of Oxford, United Kingdom)
"Active Nematics"

8:10 pm - 8:20 pm Discussion

8:20 pm - 8:50 pm **Zvonimir Dogic** (Brandeis University, USA)
"Order and Disorder in Active Nematics"

8:50 pm - 8:55 pm Discussion

8:55 pm - 9:25 pm **Igor Aronson** (Argonne National Laboratory, USA)
"Individual and Collective Behavior of Swimming Bacteria in Anisotropic Liquids"

9:25 pm - 9:30 pm Discussion

Monday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **Vesicles and Shells**

Discussion Leader: **Slobodan Zumer** (University of Ljubljana, Slovenia)

9:00 am - 9:35 am **David Weitz** (Harvard University, USA)
"Microfluidics and Liquid Crystalline Shells"

9:35 am - 9:45 am Discussion

9:45 am - 10:20 am **Jan Lagerwall** (University of Luxembourg, Luxembourg)
"Curved, Confined and Colorful: Liquid Crystals in Micron-Scale Droplets, Shells and Fibers"

10:20 am - 10:30 am Discussion

10:30 am - 11:00 am Coffee Break

11:00 am - 11:35 am **Robin Selinger** (Kent State University, USA)
"Defects and Shape Evolution in Lipid Vesicles and Nematic Polymer Networks"

11:35 am - 11:45 am Discussion

11:45 am - 12:20 pm **Yan-Yeung Luk** (Syracuse University, USA)
"Building Functional Materials by Using Protein-Stabilizing Liquid Crystals as Templates"

12:20 pm - 12:30 pm Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:30 pm - 9:30 pm **Supramolecular and Functional Materials**

Discussion Leader: **Jun-Ichi Fukuda** (AIST: Intelligent Systems Research Institute, Japan)

7:30 pm - 8:00 pm **Takashi Kato** (University of Tokyo, Japan)
"Nanostructured Liquid Crystals Exhibiting Energy and Environmental Functions"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:40 pm **David Walba** (University of Colorado Boulder, USA)
"Liquid Crystal-Based Organic Semiconductors"

8:40 pm - 8:50 pm Discussion

8:50 pm - 9:20 pm **Allan Guymon** (University of Iowa, USA)
"Functional Hydrogels Templated from Liquid Crystals"

9:20 pm - 9:30 pm Discussion

Tuesday

7:30 am - 8:30 am Breakfast

8:30 am Group Photo

9:00 am - 12:30 pm **Defects and Topology**

Discussion Leader: **Noel Clark** (University of Colorado, USA)

9:00 am - 9:35 am **Emmanuelle Lacaze** (Institut des NanoSciences de Paris, France)
"Localization, Alignment and Assembly of Nanoparticles Induced by Distorted Liquid Crystals"

9:35 am - 9:45 am Discussion

9:45 am - 10:20 am **Randall Kamien** (University of Pennsylvania, USA)
"What Becomes a Cholesteric Most?"

10:20 am - 10:30 am Discussion

10:30 am - 11:00 am Coffee Break

11:00 am - 11:35 am **Alberto Fernandez** (Georgia Institute of Technology, USA)
"Toroidal Nematics"

11:35 am - 11:45 am Discussion

11:45 am - 12:20 pm **Miha Ravnik** (University of Ljubljana, Slovenia)
"Fractal and Quasi-Crystalline Nematic Colloids for Photonics"

12:20 pm - 12:30 pm Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:30 pm - 9:30 pm **Liquid Crystals and Biology**

Discussion Leader: **Elda Hegmann** (Kent State University, USA)

7:30 pm - 8:00 pm **Daniel Schwartz** (University of Colorado, USA)
"Responsive Anchoring and Dynamics at Nematic Interfaces"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:40 pm **David Lynn** (University of Wisconsin - Madison, USA)
"Behaviors of 'Caged' Liquid Crystal Droplets in Extracellular and Intracellular Environments"

- 8:40 pm - 8:50 pm Discussion
- 8:50 pm - 9:20 pm **Jonathan Selinger** (Kent State University, USA)
"Coarse-Grained Theory of the Twist-Bend Phase"
- 9:20 pm - 9:30 pm Discussion

Wednesday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Young Investigator Presentations**
- Discussion Leaders: **Torsten Hegmann** (Kent State University, USA) and **Linda Hirst** (University of California, Merced, USA)
- 9:00 am - 9:25 am **Berry Bogels** (Eindhoven University of Technology, The Netherlands)
"Liquid Crystal Templated Formation of Nanoporous Materials"
- 9:25 am - 9:30 am Discussion
- 9:30 am - 9:55 am **Sara Carvalho** (UNINOVA, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal)
"Joule-Heating Effect: A New Route to PDLCs Memory Removal"
- 9:55 am - 10:00 am Discussion
- 10:00 am - 10:25 am **Yun Jeong Cha** (Korea Advanced Institute of Science and Technology, South Korea)
"Periodic Zig-Zag Structure of Self-Assembled DNA Materials"
- 10:25 am - 10:30 am Discussion
- 10:30 am - 11:00 am Coffee Break
- 11:00 am - 11:25 am **Simone Dussi** (Utrecht University, The Netherlands)
"Entropic Twists in Colloidal Cholesterics"
- 11:25 am - 11:30 am Discussion
- 11:30 am - 11:55 am **Brian Green** (University of Iowa, USA)
"Templating Polymers with Lyotropic Liquid Crystals via Photopolymerization Using a Gemini Surfactant"
- 11:55 am - 12:00 pm Discussion
- 12:00 pm - 12:25 pm **Yu Xia** (University of Pennsylvania, USA)
"Direct Mapping of the Local Director Field of Nematic Liquid Crystals at the Nano-Scale"
- 12:25 pm - 12:30 pm Discussion
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner

7:30 pm - 9:30 pm

Photons and Devices

Discussion Leader: **Mohan Srinivasarao** (Georgia Institute of Technology, USA)

7:30 pm - 8:00 pm

Igor Musevic (Jozef Stefan Institute, Slovenia)

"Light-Controlled Topological Charge in a Nematic Liquid Crystal"

8:00 pm - 8:10 pm

Discussion

8:10 pm - 8:40 pm

Timothy White (Air Force Research Laboratory, USA)

"Voxelated Liquid Crystal Elastomers: Programming Soft Elasticity"

8:40 pm - 8:50 pm

Discussion

8:50 pm - 9:20 pm

Nelson Tabiryan (Beam Engineering for Advanced Measurements Corp., USA)

"New Opportunities for Controlling Light with Liquid Crystals"

9:20 pm - 9:30 pm

Discussion

Thursday

7:30 am - 8:30 am

Breakfast

8:30 am - 9:00 am

Business Meeting

Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair

9:00 am - 12:30 pm

Colloids and Interfaces

Discussion Leader: **Charles Rosenblatt** (Case Western Reserve University, USA)

9:00 am - 9:35 am

Kathleen Stebe (University of Pennsylvania, USA)

"Directed Assembly at Interfaces of Complex Fluids"

9:35 am - 9:45 am

Discussion

9:45 am - 10:20 am

Claudio Zannoni (University of Bologna, Italy)

"Computer Simulations of Liquid Crystals at Interfaces"

10:20 am - 10:30 am

Discussion

10:30 am - 11:00 am

Coffee Break

11:00 am - 11:35 am

Christian Bahr (Max Planck Institute for Dynamics and Self-Organization, Germany)

"Instabilities at Liquid Crystal/Aqueous Interfaces: From Artificial Microswimmers to Self-Assembling Light Guiding Fibers"

11:35 am - 11:45 am

Discussion

11:45 am - 12:20 pm

Dirk Broer (Eindhoven University of Technology, The Netherlands)

"Non-Equilibrium Surface Dynamics in Liquid Crystal"

12:20 pm - 12:30 pm

Discussion

12:30 pm

Lunch

1:30 pm - 4:00 pm

Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:30 pm - 9:30 pm **Hierarchical Self-Assembly and New Phases**

Discussion Leader: **Oleg Lavrentovich** (Kent State University, USA)

7:30 pm - 8:00 pm **Ivan Smalyukh** (University of Colorado, USA)

"Hybrid Multiscale Liquid Crystals"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:40 pm **Dong Ki Yoon** (Korea Advanced Institute of Science and Technology, South Korea)

"Hierarchically Self-Assembled Textures and Defects of Liquid Crystal"

8:40 pm - 8:50 pm Discussion

8:50 pm - 9:20 pm **Alejandro Rey** (McGill University, Canada)

"Structure and Dynamics of Biological Liquid Crystals"

9:20 pm - 9:30 pm Discussion

Friday

7:30 am - 8:30 am Breakfast

9:00 am Departure

Liquid Crystals (2015)

Name	Organization	Participation	Status
Abberley, Jordan P	University of Aberdeen	Attendee	Registered
Abbott, Nicholas L	University of Wisconsin	Chair	Registered
Abukhdeir, Nasser M	University of Waterloo	Poster Presenter	Registered
Acevedo, Aldo	University of Puerto Rico- Mayaguez	Poster Presenter	Registered
Afghah, Sajedah	Kent State University	Poster Presenter	Registered
Agra-Kooijman, Dena Mae	Kent State University	Attendee	Registered
Aronson, Igor S	Argonne National Laboratory	Speaker	Registered
Atherton, Timothy J	Tufts University	Poster Presenter	Registered
Bade, Nathan D	University of Pennsylvania	Poster Presenter	Registered
Bahr, Christian	Max Planck Institute for Dynamics and Self-Organization	Speaker	Registered
Bakker, Henriëtte E	Utrecht University	Poster Presenter	Registered
Bedolla Pantoja, Marco A	University of Wisconsin-Madison	Poster Presenter	Registered
Beller, Daniel A	Harvard University	Poster Presenter	Registered
Bernatz, Georg	Merck KGaA	Attendee	Registered
Bogels, Berry	Eindhoven University of Technology	Speaker	Registered
Broer, Dirk J	Eindhoven University of Technology	Speaker	Registered
Bukusoglu, Emre	University of Wisconsin - Madison	Poster Presenter	Registered
Burke, Christopher J	Tufts University	Poster Presenter	Registered
Carter, Matthew	University of Wisconsin, Madison	Poster Presenter	Registered
Carvalho, Sara F	UNINOVA, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa	Speaker	Registered
Cha, Yun Jeong	Korea Advanced Institute of Science and Technology	Speaker	Registered
Chang, Kai-Han	Kent State University	Poster	Registered

		Presenter	
Chen, Dong	Harvard University	Poster Presenter	Registered
Clark, Noel	University of Colorado	Discussion Leader	Registered
Collings, Peter J	Swarthmore College	Poster Presenter	Registered
Cordova-Figueroa, Ubaldo M	University of Puerto Rico - Mayaguez	Attendee	Registered
Davidson, Zoey S	University of Pennsylvania	Poster Presenter	Registered
Davis, Virginia	Auburn University	Poster Presenter	Registered
DeBenedictis, Andrew	Tufts University	Poster Presenter	Registered
Diestra-Cruz, Heberth	University of Puerto Rico at Mayagüez	Poster Presenter	Registered
Dogic, Zvonimir	Brandeis University	Speaker	Registered
Dolan, James A	University of Cambridge	Poster Presenter	Registered
Dussi, Simone	Utrecht University	Speaker	Registered
Eimura, Hiroki	The University of Tokyo	Poster Presenter	Registered
Evans, Arthur	University of Massachusetts, Amherst	Attendee	Registered
Fernandez, Alberto	Georgia Institute of Technology	Speaker	Registered
Fisch, Michael R	Kent State University	Attendee	Registered
Foley, Lee M	University of Colorado Boulder	Poster Presenter	Registered
Fu, Fred	University of Waterloo	Poster Presenter	Registered
Fu, Jinxin	Georgia Institute of Technology	Attendee	Registered
Fukuda, Jun-Ichi	AIST: Intelligent Systems Research Institute	Discussion Leader	Registered
Green, Brian	University of Iowa	Speaker	Registered
Guo, Xuanrong	University of Wisconsin, Madison	Poster Presenter	Registered
Guo, Yubing	Kent State University	Poster Presenter	Registered

Guymon, Allan	University of Iowa	Speaker	Registered
Haywood, Alexander D	Auburn University	Poster Presenter	Registered
Hegmann, Elda	Kent State University	Discussion Leader	Registered
Hegmann, Torsten	Kent State University	Vice Chair	Registered
Henrich, Oliver O	Edinburgh Parallel Computing Centre	Poster Presenter	Registered
Hirst, Linda S	University of California, Merced	Vice Chair	Registered
Humpert, Anja	University of Warwick	Poster Presenter	Registered
Hunter, Ian M	Tufts Soft Matter Theory Group	Poster Presenter	Registered
Izzo, Dora	Universidade Federal do Rio de Janeiro	Poster Presenter	Registered
Jennings, James	University of Wisconsin Madison	Poster Presenter	Registered
Jiang, Miao	Kent State University	Poster Presenter	Registered
Jiang, Jinghua	Kent State University	Poster Presenter	Registered
Jones, Cliff J	University of Leeds	Poster Presenter	Registered
Kamien, Randall D	University of Pennsylvania	Speaker	Registered
Kang, Louis	University of Pennsylvania	Poster Presenter	Registered
Kato, Takashi	University of Tokyo	Speaker	Registered
Keithley, Kimberlee	Kent State University	Attendee	Registered
Kim, Hye-Na	University of Pennsylvania	Poster Presenter	Registered
Kim, Youngki	\Kent State University	Poster Presenter	Registered
Kini, Aravinda M	US Department of Energy	Attendee	Registered
Korblova, Eva	University of Colorado Boulder	Poster Presenter	Registered
Kuehl, Nicholas	Metropolitan State University of Denver	Poster Presenter	Registered
Kumar, Satyendra	Kent State University	Attendee	Registered

Lacaze, Emmanuelle	Institut des NanoSciences de Paris	Speaker	Registered
Lagerwall, Jan	University of Luxembourg	Speaker	Registered
Lancia, Federico	University of Twente	Poster Presenter	Registered
Lavrentovich, Oleg D	Kent State University	Discussion Leader	Registered
Liu, Iris	University of Pennsylvania	Poster Presenter	Registered
Longa, Lech	Jagellonian University	Poster Presenter	Registered
Lorenz, Alexander	Stranski-Laboratorium, TU Berlin	Poster Presenter	Registered
Lubensky, Tom C	University of Pennsylvania	Discussion Leader	Registered
Lugger, Jody J.A.M.	Eindhoven University of Technology	Poster Presenter	Registered
Luk, Yan-Yeung	Syracuse University	Speaker	Registered
Luo, Yimin	University of Pennsylvania	Poster Presenter	Registered
Lynn, David M	University of Wisconsin - Madison	Speaker	Registered
Macri, Katherine M	University of Colorado, Boulder	Poster Presenter	Registered
Magrini, Mitchell J	MSU Denver Chemistry	Poster Presenter	Registered
Mallett, Jonathan J	American Chemical Society	Attendee	Registered
Manyuhina, Oksana	Syracuse University	Poster Presenter	Registered
Martinez-Gonzalez, Jose A	University of Chicago	Poster Presenter	Registered
Martinez-Miranda, Luz J	University of Maryland	Poster Presenter	Registered
Mascioli, Andrew M	Tufts University	Poster Presenter	Registered
McLaughlin, Jacob	University of Iowa	Poster Presenter	Registered
Meyer, Robert B	Brandeis University	Attendee	Registered
Moheghi, Alireza	Kent State University	Poster Presenter	Registered

Moirangthem, Monali	Eindhoven University of Technology	Poster Presenter	Registered
Mori, Taizo	Kent State University	Poster Presenter	Registered
Murugesan, Yogesh Kumar	University of Southampton	Poster Presenter	Registered
Musevic, Igor	Jozef Stefan Institute	Speaker	Registered
Mushenheim, Peter C	University of Wisconsin-Madison	Poster Presenter	Registered
Nayani, Karthik	Georgia Institute of Technology	Poster Presenter	Registered
Nemitz, Ian R	Case Western Reserve University	Poster Presenter	Registered
Neufeld, Ryan A	University of Waterloo	Poster Presenter	Registered
Nickmans, Koen	Technical University Eindhoven	Poster Presenter	Registered
Noh, JungHyun	University of Luxembourg	Poster Presenter	Registered
Pardaev, Shokir A	Kent State University	Poster Presenter	Registered
Park, Jung O	Georgia Institute of Technology	Poster Presenter	Registered
Parsouzi, Zeinab	Kent State University	Poster Presenter	Registered
Paterson, Daniel A	University of Aberdeen	Attendee	Registered
Pendery, Joel S	University of Wisconsin-Madison	Poster Presenter	Registered
Peng, Chenhui	Kent State University	Poster Presenter	Registered
Qin, Guangkui	Kent State University	Poster Presenter	Registered
Rahimi, Mohammad	University of Chicago	Poster Presenter	Registered
Ravnik, Miha	University of Ljubljana	Speaker	Registered
Reven, Linda	McGill University	Poster Presenter	Registered
Rey, Alejandro	McGill University	Speaker	Registered

Rieker, Thomas P	National Science Foundation	Attendee	Registered
Romero-Enrique, Jose M	University of Seville	Poster Presenter	Registered
Roohnikan, Mahdi	McGill University	Poster Presenter	Registered
Rosenblatt, Charles S	Case Western Reserve University	Discussion Leader	Registered
Ryu, Seong Ho	Korea Advanced Institute of Science and Technology	Poster Presenter	Registered
Schwartz, Daniel	University of Colorado	Speaker	Registered
Selinger, Robin	Kent State University	Speaker	Registered
Selinger, Jonathan V	Kent State University	Speaker	Registered
Serra, Francesca	University of Pennsylvania	Poster Presenter	Registered
Shiyanovskii, Sergij V	Kent State University	Poster Presenter	Registered
Singh, Gautam	Kent State University	Poster Presenter	Registered
Smalyukh, Ivan I	University of Colorado	Speaker	Registered
Spagnolie, Saverio E	University of Wisconsin-Madison	Attendee	Registered
Srinivasarao, Mohan	Georgia Institute of Technology	Discussion Leader	Registered
Stebe, Kathleen J	University of Pennsylvania	Speaker	Registered
Stevenson, Paul J	Queens University Belfast	Attendee	Registered
Sue Chee Ming, Wilson	The University of the West Indies	Poster Presenter	Registered
Tabiryan, Nelson V	Beam Engineering for Advanced Measurements Corp.	Speaker	Registered
Tkalec, Uros	University of Ljubljana	Poster Presenter	Registered
Tran, Lisa	University of Pennsylvania	Poster Presenter	Registered
Tsai, Ethan	Metropolitan State University of Denver	Attendee	Registered
Turiv, Taras	Kent State University	Poster Presenter	Registered
van der Asdonk, Pim	Radboud University Nijmegen	Poster Presenter	Registered
Van Hecke, Gerald R	Harvey Mudd College	Attendee	Registered

Walba, David M	University of Colorado Boulder	Speaker	Registered
Wang, Xiaoguang	University of Wisconsin-Madison	Poster Presenter	Registered
Wei, Wei-Shao	University of Pennsylvania	Poster Presenter	Registered
Wei, Qihuo	Kent State University	Poster Presenter	Registered
Weitz, David A	Harvard University	Speaker	Registered
White, Timothy J	Air Force Research Laboratory	Speaker	Registered
Xia, Yu	University of Pennsylvania	Speaker	Registered
Xiang, Jie	Kent State University	Poster Presenter	Registered
Yakacki, Christopher M	University of Colorado Denver	Poster Presenter	Registered
Yeomans, Julia	University of Oxford	Speaker	Registered
Yoon, Dong Ki	Korea Advanced Institute of Science and Technology	Speaker	Registered
Yu, Meina	Kent State University	Poster Presenter	Registered
Zannoni, Claudio	University of Bologna	Speaker	Registered
Zhang, Rui	University of Chicago	Poster Presenter	Registered
Zhou, Ye	The University of Chicago	Poster Presenter	Registered
Zhou, Shuang	Kent State University	Poster Presenter	Registered
Zumer, Slobodan	University of Ljubljana	Discussion Leader	Registered

151 Attendees

Liquid Crystals (GRS)

Gordon-Kenan Research Seminar

Soft Matter in Liquid Crystals and Liquid Crystals in Soft Matter

Dates

June 20-21, 2015

Location

University of New England
Biddeford, ME

Organizers

Chair:
Zoey S. Davidson

Associate Chair:
Xiaoguang Wang

Meeting Description

The Gordon Research Seminar on Liquid Crystals is a unique forum for graduate students, post-docs, and other scientists with comparable levels of experience and education to present and exchange new data and cutting edge ideas.

This seminar will focus on the exciting and growing interplay of soft matter and liquid crystal science. Topics will include how colloidal media behaves in liquid crystals, how liquid crystals are made of colloidal and biological materials, as well as newly discovered phases and materials of liquid crystals.

A panel discussion at the end of the GRS will include participants from the GRC to discuss both career prospects and scientific future in the field of liquid crystals.

Related Meeting



This GRS was held in conjunction with the "Liquid Crystals" Gordon Research Conference (GRC). Refer to the [associated GRC program page](#) for more information.

Contributors



Seed funding for this new Gordon Research Seminar has been provided by the Kenan Institute for Engineering, Technology and Science at North Carolina State University.



**U.S. Army
Research Office**

Meeting Program

Saturday

- 2:00 pm - 5:00 pm Arrival and Check-in
- 3:30 pm - 3:45 pm Introductory Comments by GRC Site Staff / Welcome by the GRS Conference Chair
- 3:45 pm - 4:30 pm **Liquid Crystals Up Close**
- Discussion Leader: **Lisa Tran** (University of Pennsylvania, USA)
- 3:45 pm - 4:00 pm **Shuang Zhou** (Kent State University, USA)
"Director Distortion Reduces Molecular Order of Lyotropic Chromonic Liquid Crystal on Large Scales"
- 4:00 pm - 4:05 pm Discussion
- 4:05 pm - 4:20 pm **Yu Xia** (University of Pennsylvania, USA)
"Direct Mapping of Local Director Field of Nematic Liquid Crystals at the Nano-Scale"
- 4:20 pm - 4:25 pm Discussion
- 4:25 pm - 4:30 pm General Discussion
- 4:30 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Keynote Talk / Kinetic Liquid Crystals**
- Discussion Leader: **Xiaoguang Wang** (University of Wisconsin-Madison, USA)
- 7:30 pm - 8:10 pm **Oleg Lavrentovich** (Kent State University, USA)
"Liquid Crystal Enabled Electrokinetics"
- 8:10 pm - 8:15 pm Discussion
- 8:15 pm - 8:35 pm **Katherine Macri** (University of Colorado, Boulder, USA)
"Studying Receptor-Mediated Liposome Fusion Kinetics at Aqueous/Liquid Crystal Interfaces"
- 8:35 pm - 8:40 pm Discussion
- 8:40 pm - 9:00 pm **Yogesh Kumar Murugesan** (University of Southampton, United Kingdom)
"Fast Q-Tensor Algorithm for Modeling Flow of Nematic Liquid Crystals"
- 9:00 pm - 9:05 pm Discussion
- 9:05 pm - 9:25 pm **Koen Nickmans** (Technical University Eindhoven, The Netherlands)
"Light-Responsive Liquid Crystals for Nanolithography"
- 9:25 pm - 9:30 pm Discussion

Sunday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 11:00 am **Colloids and Liquid Crystals**
- Discussion Leader: **Daniel Beller** (Harvard University, USA)

- 9:00 am - 9:25 am **Henriëtte Bakker** (Utrecht University, The Netherlands)
"Quantitative Real-Space Analysis of a Binary Smectic Liquid Crystal Phase Composed of Colloidal Silica Rods and Spheres"
- 9:25 am - 9:30 am Discussion
- 9:30 am - 9:55 am **Louis Kang** (University of Pennsylvania, USA)
"Roles of Entropy and Chirality in Depletion-Induced Colloidal Membranes"
- 9:55 am - 10:00 am Discussion
- 10:00 am - 10:25 am **Heberth Diestra-Cruz** (University of Puerto Rico at Mayagüez, Puerto Rico)
"Colloid-in-Liquid Crystal Composites with Tunable Hierarchical Microstructures"
- 10:25 am - 10:30 am Discussion
- 10:30 am - 10:55 am **Mahdi Roohnikan** (McGill University, Canada)
"Hydrogen Bond Stabilized Nanoparticle-Liquid Crystal Composites"
- 10:55 am - 11:00 am Discussion
- 11:00 am - 12:30 pm Poster Session
Coffee will be served in the poster area from 11:00 am - 11:30 am
- 12:30 pm Lunch
- 1:30 pm - 2:30 pm **Mentorship Component: Career Panel Discussion**
Discussion Leader: **Francesca Serra** (University of Pennsylvania, USA)
- 1:30 pm - 2:30 pm Panel Discussion
"Careers and Research Prospectives in Liquid Crystals"
- **Robin Selinger** (Kent State University, USA)
 - **Nelson Tabiryan** (Beam Engineering for Advanced Measurements Corp., USA)
 - **David Weitz** (Harvard University, USA)
- 2:30 pm - 3:00 pm Evaluation Period
Fill in GRS Evaluation Forms
- 3:00 pm Seminar Concludes

Liquid Crystals (GRS) (2015)

Name	Organization	Participation	Status
Abbott, Nicholas L	University of Wisconsin	Attendee	Registered
Afghah, Sajedah	Kent State University	Poster Presenter	Registered
Bade, Nathan D	University of Pennsylvania	Poster Presenter	Registered
Bakker, Henriëtte E	Utrecht University	Speaker	Registered
Bedolla Pantoja, Marco A	University of Wisconsin-Madison	Poster Presenter	Registered
Beller, Daniel A	Harvard University	Discussion Leader	Registered
Bogels, Berry	Eindhoven University of Technology	Poster Presenter	Registered
Bukusoglu, Emre	University of Wisconsin - Madison	Poster Presenter	Registered
Burke, Christopher J	Tufts University	Poster Presenter	Registered
Cha, Yun Jeong	Korea Advanced Institute of Science and Technology	Poster Presenter	Registered
Chang, Kai-Han	Kent State University	Poster Presenter	Registered
Davidson, Zoey S	University of Pennsylvania	Chair	Registered
DeBenedictis, Andrew	Tufts University	Poster Presenter	Registered
Diestra-Cruz, Heberth	University of Puerto Rico at Mayagüez	Speaker	Registered
Dolan, James A	University of Cambridge	Poster Presenter	Registered
Dussi, Simone	Utrecht University	Poster Presenter	Registered
Green, Brian	University of Iowa	Poster Presenter	Registered
Guo, Yubing	Kent State University	Poster Presenter	Registered
Jennings, James	University of Wisconsin Madison	Poster Presenter	Registered
Jiang, Miao	Kent State University	Poster Presenter	Registered
Jiang, Jinghua	Kent State University	Poster Presenter	Registered
Kang, Louis	University of Pennsylvania	Speaker	Registered
Kim, Hye-Na	University of Pennsylvania	Poster Presenter	Registered
Lavrentovich, Oleg D	Kent State University	Speaker	Registered
Liu, Iris	University of Pennsylvania	Poster Presenter	Registered
Lugger, Jody J.A.M.	Eindhoven University of Technology	Poster Presenter	Registered
Luo, Yimin	University of Pennsylvania	Poster Presenter	Registered
Macri, Katherine M	University of Colorado, Boulder	Speaker	Registered
Martinez-Gonzalez, Jose A	University of Chicago	Poster Presenter	Registered
McLaughlin, Jacob	University of Iowa	Poster Presenter	Registered

Moheghi, Alireza	Kent State University	Poster Presenter	Registered
Moirangthem, Monali	Eindhoven University of Technology	Poster Presenter	Registered
Murugesan, Yogesh Kumar	University of Southampton	Speaker	Registered
Nickmans, Koen	Technical University Eindhoven	Speaker	Registered
Peng, Chenhui	Kent State University	Poster Presenter	Registered
Qin, Guangkui	Kent State University	Poster Presenter	Registered
Rahimi, Mohammad	University of Chicago	Poster Presenter	Registered
Roohnikan, Mahdi	McGill University	Speaker	Registered
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Zhou, Shuang	Kent State University	Speaker	Registered

56 Attendees