

## Dynamics and Control Problems for Medical Robotics

*Noordwijkerhout, The Netherlands (June 20 - June 23, 2011)*

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### Schedule for the DISC summer school

- Blake Hannaford:
  - B1 – Introduction to Robot Control
  - B2 – Teleoperation I
  - B3 – Teleoperation II
  - B4 – Personal Research
  
- Gregory Hager:
  - G1 – Computer Vision in Medicine
  - G2 – Advanced Methods in Ultrasound and Ultrasound Guidance
  - G3 – Modeling, Evaluating and Teaching Skilled Dexterity
  
- Arjan van der Schaft:
  - A1 – Modeling the Interaction of Dynamical Systems
  - A2 – Passivity Theory
  
- Tim Salcudean (*present for first 2 days*):
  - T1 – Ultrasound-guided Medical Interventions
  - T2 – An Introduction to Tissue Elastography and its Uses
  
- Seth Hutchinson:
  - S1 – Motion Planning Algorithms for Robotics
  - S2 – Visual Servoing
  
- DISC Robotics Research
  - Sarthak Misra (SM) – Predicting Target Displacements for Planning of Medical Interventions
  - Ilhan Polat (IP) - A Robust Control Formulation of Stability Problem of Teleoperation Systems
  - John J van den Dobbelsteen (JD) – Requirements for Minimally Invasive Techniques
  - Rob Reilink (RR) - Robotically Steering Flexible Endoscopes and Instruments for NOTES

## Schedule:

|  | <b>June 20<sup>th</sup><br/>Monday</b>   | <b>21<sup>st</sup><br/>Tuesday</b>  | <b>22<sup>nd</sup><br/>Wednesday</b>  | <b>23<sup>rd</sup><br/>Thursday</b>   |
|--|--|---|---|---|
| <b>Morning A<br/>2 hours<br/>8:30 - 10:30</b>        | 8:00 - 9:50<br>Coffee and<br>registration<br><br>9:50 Welcome<br><br>10:00 - 11:00 | B2 - Teleoperation<br>I   | A2 - Passivity<br>Theory  | G2 -<br>Advanced<br>Methods in<br>Ultrasound<br>and<br>Ultrasound<br>Guidance |
| <b>Coffee break<br/>30 minutes<br/>10:30 - 11:00</b> | B1 -<br>Introduction to<br>Robot Control*  |   |   |   |
| <b>Morning B<br/>1.5 hours<br/>11:00 - 12:30</b>     | A1 - Modeling<br>the interaction of<br>dynamics<br>systems                         | T2 - An<br>Introduction to<br>Tissue<br>Elastography and<br>its Uses  | B3 - Teleoperation<br>II  | G3 -<br>Modeling,<br>Evaluating<br>and Teaching<br>Skilled<br>Dexterity       |
| <b>Lunch<br/>1 hour<br/>12:30 - 13:30</b>            |  |   |   |   |
| <b>Afternoon A<br/>2 hours<br/>13:30 - 15:30</b>     | Best Thesis<br>Award<br>Ceremony<br><br>G1 - Computer<br>Vision in<br>Medicine     | S1 - Motion<br>Planning<br>Algorithms for<br>Robotics   | S2 - Visual<br>Servoing   | B4 - Personal<br>Research   |
| <b>Coffee break<br/>30 minutes<br/>15:30 - 16:00</b> |  |   |   | Closing***  |
| <b>Afternoon B<br/>1.5 hours<br/>16:00 - 17:30</b>   | T1 - Ultrasound-<br>guided Medical<br>Interventions                                | <i>DISC Robotics<br/>Research</i><br><br>(1) SM (20 minutes)<br>(2) IP (15 minutes)<br>(3) Q/A (open for<br>all speakers) | <i>DISC Robotics<br/>Research</i><br><br>(1) JD (20 minutes)<br>(2) RR (15 minutes)<br>(3) Q/A (open for<br>all speakers) |   |
| <b>Dinner<br/>After 18:00</b>                        |  |   | 19:00 - BBQ Social<br>event**   |   |

\* From 8:00 to 9:50 am - Summer School Registration. Welcome is at 9:50. *First lecture starts at 10:00 am, no coffee break.*

\*\* The social event starts at 19:00 and lasts until midnight.

\*\*\* The summer school ends at 4:30 pm on the last day.