



VANDERBILT SCHOOL OF ENGINEERING

SENIOR DESIGN DAY 2004

3:30-5:30 PM APRIL 27, 2004
FEATHERINGILL HALL ATRIUM

BIOMEDICAL ENGINEERING

1. System and Human Factors in Emergency

Medicine

Zheng Yan

Dr. Dan France

2. Sutureless Percutaneous Anastomosis Device

Sanjay Patel, Chris Dewar and Craig Lorang

Dr. Raul Guzman

3. Implanted Cardioverter Defibrillators Redesign

Viral Patel, Rohan Shah, and Victor Wu

Dr. Mark Wathen

4. Jansen deep-brain stimulation and measurement of muscle rigidity

Brad Barfield, Heather Brant, Amber Gordon and Holly Bertoli

Holly Bertoli

Dr. Anita Mahadevan

5. Mechanical Imaging for Breast Cancer

Screening and Monitoring

Anne Benincasa, Marlana Justak, Taylor Davis, Joe Anderson and Lainie Kiefer

Anderson and Lainie Kiefer

Dr. Michael Miga

6. PFO occluder project

Shaun Miller and Sam Abrams

Dr. Tom Doyle

7. Pulmonary Resistor in Hypoplastic Left Heart Syndrome

Bryan Chamberlain, Sona Kundalkar, Christine Lee, Wathsala Ediriweera

Lee, Wathsala Ediriweera

(EECE) and Tiffani Newbold (EECE)

Dr. Tom Doyle

8. Panoramic Imaging of Cardiac Electrodynamics

Patrick Park, Tyler Winston, Holley Wingard (ME), and Matt Eames

Drs. John Wikswow and Mark Bray

9. Robotic Needle Driver End Effector Design

David Sun and Chris Willingham

Dr. Bradford Wood (NIH)

10. Automatic Metered Dose Inhalant (MDI) delivery device

Maria del Carmen Carrillo, Jennifer Struble, and Loyrirk "Float" Temiyakarn

Loyrirk "Float" Temiyakarn

Mr. Richard Fries

11. Angiography Design Project

Sarah Pachtman, Punam Patel, John Jorgensen and Marcus Spallek

Marcus Spallek

Dr Frank Carroll

12. Orthopedic Adaptor

Anna Duloy, Alexander Byall, Kate Huddleston, and Ashley Goodnight

Ashley Goodnight

Dr. Thomas J. Limbird

13. Neonatal Breathing Apparatus Design

Andrea Holland and Mindy Leelawong

Dr. William Walsh

14. MedTG Needle Design

Brett Byram, Steve Harris, and Adam Travis

Dr. Gary B. Byram

15. Mouse Exercise Monitoring System

Matt Gallegly, Erik Lappinen, Brooks Alford, and Elizabeth Smith

Elizabeth Smith

Dr. Mike McDonald

16. Bubble Formation in Tuohy-Borst Adaptors

Melanie Bernard, Jason Hirshburg, and Isaac Clements

Isaac Clements

Dr. Ted Larson

17. Device to aid communication between intubated patients and care providers

JoongHoon Park and Jae Hyung Kim

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Mr. Richard Fries

18. Grip Exertion Measurement System (GEMS)

Amit S Kamat+, Rahul Mishra, Sanjay Hegde and Heemesh Seth (EECE)

Heemesh Seth (EECE)

Mr. Mark Richter

19. Centralized User Interface for the Monitoring of Neonatal Intensive Care Patients

Erin L Scott
Dr. Bill Walsh

20. Development of Protein Microarrays and detection via MALDI-TOF

Kyle Nordquist
Andrew J. Link, PhD

21. ASD Closure

Thomas Hoy
Dr. Tom Doyle

22. Cardiac cell culture/bioMEMS valve project

Mike Ackerman, John Payne, James Wells, and Hilary Samples
Dr. Baudenbacher

23. The Exer-Station (X-PS2)

Tarafa Al-Awaj, Bichar Myrttil
Dr. Marshall Summar

CIVIL ENGINEERING

24. Bishop Joseph Johnson Black Cultural Center
Carrie Barton (PM)

Keith Loiseau, Vanderbilt Univ., Project Manager

25. ASCE Student Chapter Steel Bridge Competition

Katherine L. McArthur (PM), Allen H. Breed, and Daniel E. Fuchs

Advisor: Dr. Sanjiv Gokhale, Vanderbilt Univ. CEE Department

26. West End Community Church

Ashley Thomas (PM), Ross Lucas, Jessie Binion, and Alif Ali

Advisor: Tom Davis, Littlejohn Engineering Assoc., Inc.

27. Traffic Analysis of Intersection Improvements: Edmondson Pike

Taylor Dalton (PM), Carlie Blandford, Mike Fry, and Sarah Weissman

Advisors: Tommy Martin & Gary Lide, AMEC Engineering

28. Sign Installation Program

David McCarty (PM), Bill Long, Jeremy Bartholoew, & Brian Eklund

Advisors: Elizabeth Surface & James Smithey, Ross Bryan & Assoc.

29. Office Building Design

Dan Berding (PM), Anna Cassara, Laurie Mazursky, & Tony Cameratta

Advisors: David Wright, Carpenter Wright Engineers

30. Bridge Replacement of Mount Zion Road Over Sycamore Creek, TN

Abby Raines (PM), Matt Conklin, Matt Lytle, & Jean Maron

Advisors: Ed Wasserman, Jon Zirkle, and Wesley Peck; TDOT

31. 5MGD Water Treatment Solution for Cumberland, TN

Jake Chi (PM), Jesse Kalachman, and Yassir Sodri
Advisors: George Garden & Heather Crabtree, BWSC Inc.

32. Traffic Impact Study for Gateway Village
John Edwards (PM), Amy Burch, Rob Furst, & Katie Nolan

Advisor: Gillian Fischbach, Fischbach Transportation Group Inc.

ELECTRICAL AND COMPUTER ENGINEERING

33. Frequency Selective Probe Tip for ADSL

Ajay Bidani, Megan Casey, Shantel Higgins, Enrique Montes and Roy Whitfield

Conexant Systems, Inc.

34. and 35. M261/Mk 66 Hydra 70 missile system redesign

Thaddeus J. Blenke (EE), Ryan T. Grant (CompE), Evan D. Stern (CompE), Christopher N. Adi (ME), Eric H. Alexander (ME), Joel M. Fagin (ME), JoAnn W. Hebner (ME), Jason R. Northcut (ME), and Jun Sheng (ME) U.S.Army AMCOM, Huntsville, Al

36. Vanderbilt Student Communications Internet Technology

Madani A. Adjali, Cole E. Moody, James F. Reynolds, Jonathan C. Suggs, and Charles B. Wallace

Monster Labs and Hampton James

37. Integrate circuit on a single chip of silicon

Stephanie Coleman-Smith (BME-EE), Mark E. Koeneman (EE), and Eric F. Sulzer (EE)

Micronova Technologies, Bellevue, TN

38. Edge-detection system

Alice M. Davenport, Leighanna M. Hanson, Jens O. Pillgram-Larsen

RTS-Wright Industries, Nashville, TN

MECHANICAL ENGINEERING

39. Automated precision refrigerant injection

apparatus for use in optimum charge determination on room air conditioners and dehumidifiers-Jürgen Pannock/ Whirlpool with Barnett and Williamson VUES mentor.

ME's Bolin Chen, Thomas M. Ditchfield, Adam T. Kyle and Matthew B. Lyle

Whirlpool Corporation Air Care Global Product Design Center-Lavergne, TN

40. Design & build a small scale working prototype batch spreading system to evenly spread fine powder raw materials evenly over the electric glass melter surface

Jaime Granados, C. Lee, John G. Lee, Jay Piper GAF/Nashville Avi Desai and/or Phil Hoyt-Kinser

41. Robot sensing and control Alan Peters/VUIRL with Barnett VUES mentor

William J. Erwin, John K. Phillips, Lisa A. Whittaker, Derek R. Yates, and Frank McCawley VU-Intelligent Robotics Lab

42. Design and Development of a Hot-Wire Anemometry Calibration Apparatus for Very-Low-Reynolds-Number Flows

ME's Adam Abu Bakar, Tarmizi Y. Azuddin, Abdul H. Mohamed, Afdhal Yusof and Annafi Zulkifli VUES/Diamond Lab

43. Composite can sorter

ME's Christopher N. Brustuen, Patrick S. Deeley, John T. Heim, James J. Leonzio and Bryan M. Mao Proctor and Gamble/Pringles, Jackson, TN

44. Spring measurement apparatus

ME's Kevin G. Dow, Daniel C. Golden, Michael D. Lahr, John M. McFarland, and Marion S. Westby DENSO, Maryville, TN

35. Tactical Missile Modification

This is an EECE project with VUES mentor Dozier and EECE Members Caroline Bright, Evan Stern, Leighanna Hanson, Ryan Grant, and Thad Blenke with ME members Chris Adi, Eric Alexander, Jason Northcutt, Joel Fagin, Jo Ann Heabner and Jun Sheng, Caroline R. Bright, Christopher N. Adi, Evan D. Stern, Jason R. Northcut, Joann W. Hebner, Joel M. Fagin, Jun Sheng, Ryan T. Grant, Thaddeus J. Blenke, and Eric Alexander

45. Automated single strand floss dispenser

ME's Lynn Braunschweig, B. O. Conroy, Sarah A. Steele and BME Alexis Broussard VU-MC

46. No Look Watch

ME's Candice B. Kelly, Sebastine O. Ujereh, Laurel A. Staples, and Ahmed Al-Sharqi VU-MC

47. Design and Development of a "Walker - Lifter" to assist persons with knee, hip, and back problems to get out of a chair.

ME's Adrian Gale, John I. Holt, Timothy B. Jones, Christopher C. Powell, and Rizwan K. Sunesara MicroNova Technology, Nashville, TN

48. Energy savings considerations

Pat Dupree, Traci Kendall, Erin Reinhardt, and Sebastine Ujereh Coca-Cola, Atlanta, GA

8. 3-D Heart Defibrillation Imaging(BME Project)

ME's Holley Wingard and BME's Patrick Park, Matt Eames, and Tyler Winston

