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Undergraduate Program

Trends in Undergraduate Enrollment

Trends in B.S. Degrees Granted
B.S. Degree Recipients

There were 108 Bachelor of Science degrees awarded during the year.

Summer I 2001 Graduates
Kirk Bogar Hedstrom

Summer II 2001 Graduates
Thorin Jonathan Flynn
Trinh Tuyet Thi Tran
Melodie Jo Vines
Phillip Mark Wiggins

December 2001 Graduates
Nicholas John Abraezinskas
Justin Edwards Adams
Iris Yomaira Alvarado-Santiago
Elizabet Ann Blackburn
Nicholas Scott Lanzi
Ryan Daniel Levy
Samuel Craig Littlejohn
Bobby Dean Locklear
Jeffrey Richard London
Robert McGuire Lowe
Kyle Jeremy Moody
Randall Oldin Pittard
R. Bruce Stewart
Scott Charles Taylor
Scott Jacob Tullis
Betsy Jean Whiteley
Erik Kyle Yarbrough

May 2002 Graduates
Kevin Lloyd Anderson
Enderass Argaw
Thomas James Bell
Satisha Bissram
Brandon Ward Bray
Chisa Kandyda Brookes
Jennifer Lynn Brown
Winfield Scott Burnside
Venceta Andrell Butler
Steven Brett Caines
John Reeves Carpenter, III
Julie Cheng
Matthew Robert Cottle
Steven Robert Cottle
Carl Randall Alexander Creel
Valencia Francine Deans
Thomas Demetrice Eatmon, Jr.
Lewis Clayton Edmondson II
Paul Carrington Edmunds Jr.
Elisa Enders
Michael Thomas Foote
Kim Dilena Goodwin
Richard Neal Grainger
Kyle George Grant
Josephine Harris Greenwood
Courtney Leigh Griffen
Brian Lowell Gustin
Emily Denise Hafer
Scott Louis Harding
John Brock Harris
Christy Michele Huggins
Bradley Edward Johnson
Vanita Rani Kalra
Ryan Powell Kellogg
William Christopher Ketchie
Karim Rafic Kheireddine
Andrew Hoke King Jr.
George Adedeyo Laniyan
Kenneth Adam Lennon
Emily Susan Lewis
Hao Dong Lieu
James Richard Lloyd
Jeremy Brandon Lynn
Andrew Kase Mackenzie
Courtney Elizabeth Magee
Joseph McDonald Martin
Everett K. Minga
Molly Elizabeth Morgan
Wesley Thomas Moyer
Kelly Marie Neuschaef
Richard Chuen Ng
Eric James Nordby
Scott Thomas Ogburn
Christopher John Oldham
Valerie Suzanne Paige
Leslie Ann Pezzullo
Travis Neil Pickett
Bojan Prokic
Santeresa Nicole Purnell
Ryan Jemal Quick
Kaleb John Redden
Lucas Paul Revellon
Steven Daniel Ritchie
Patricia Ann Ryan
Noriko Saito

Billie Jean Savage
Tammi Lee Schmit
Adam David Schuette
Sabrina Lynn Seeley
Aaron Drake Smith
Clinton Hamilton Smoke III
Elizabeth Ashley Speller
William Edgar Stallings IV
Joy Elizabeth Stevens
Natalie R. Thompson
Kim Ngoc Tran
Mark Allan Treece
Valerie Bic-Har Tse
Erik Steven Welf
Marjorie Scott White
Thomas Lee Williams
Kidanemariam Woldu
Meghan Marie Wutkowski
Wing Chi Yeung
Christopher Robin Young
Evelyn-Ruth Kathryn Young

1Double majors  SUniversity Scholars Program  Cum Laude  Magna Cum Laude  Summa Cum Laude
Undergraduate Scholarships and Awards

Scholarships — 2001-2002

*NSF Scholar*
  Lucas Paul Revellon

*BASF Scholar*
  William Christopher Ketchie

*Ben Franklin Scholar*
  Kim Dilena Goodwin
  Ryan Powell Kellogg

*Caldwell Fellows*
  Ryan Powell Kellogg
  Vanita Rani Kalra

*ChE Senior Awards*
  Satisha Bissram
  Kim Dilena Goodwin
  Ryan Powell Kellogg
  Meghan Marie Wutkowski

*COE and ChE Senior Award*
  Kim Dilena Goodwin
  Meghan Marie Wutkowski

*Culp Scholar*
  Michael Thomas Foote

*Deans Merit Scholar*
  Valencia Francine Deans
  Michael Thomas Foote
  Emily Susan Lewis
  Kelly Marie Neuschaefer
  Santeresa Nicole Purnell

*Eastman Scholar*
  Satisha Bissram

*Goodrum Scholar*
  Winfield Scott Burnside

*IBM Watson Scholar*
  Eric James Nordby

*Jones Scholar*
  Eric James Nordby

*Mixon Scholar*
  Vanita Rani Kalra

*NACME Scholar*
  Chisa Kandyda Brooks

*O'Dell Scholar*
  Elisa Enders
  Patricia Ann Ryan

*Othmer Scholar*
  Michael Thomas Foote

*Park Scholarship*
  Kim Dilena Goodwin
  Kaleb John Redden
  Billie Jean Savage
  Aaron Drake Smith
  Mark Allan Treece
  Meghan Marie Wutkowski

*Smith Scholar*
  John Reeves Carpenter, III
  Michael Thomas Foote
  Courtney Leigh Griffin

*Udall Scholar*
  Kaleb John Redden
  Eric Steven Welf
Student Organizations and Recognition

AIChE Student Chapter

Officers 2001-2002
President: Kevin Anderson
Vice-President: Michael Foote
Corresponding Secretary: Valerie Tse
Treasurer: Jody Moss
Recording Secretary: Stacey Phillips
Chapter Advisor: Dr. George W. Roberts

Officers 2002-2003
President: Stacey Phillips
Vice-President: Rob Ashcraft
Corresponding Secretary: Amanda Burris
Treasurer: Jessica Barringer
Recording Secretary: Katie Wright
Chapter Advisor: Dr. George W. Roberts

Activities
- Membership of 193 students.
- Company sponsored luncheons, fall and spring.
- Forty-two students attended the national meeting in Reno, NV (November 2000)
- Twenty-six students attended the Southern Regional Student Chapter Meeting in San Juan, PR (April 2001).
- One student (Ryan Levy) competed in National Student Paper Competition at National Meeting. Two students (Sabrina Seeley, Bojan Prokic) competed in Southern Region Student Paper Contest.
- Maintained a powerful website for easy access to information.
- Won 2001 Outstanding Student Chapter Award from National AIChE.
- Expanded community service program.

ISPE Student Chapter

Officers 2001-2002
President: Jennifer Brown
Vice President: Andrew Mackenzie
Secretary: Emily Lewis
Treasurer: Karen Lu
Publicity: Stacey Phillips
Chapter Advisor: Dr. Steven W. Peretti

Industry Advisors
Dan Dunbar Jane Brown

Academic Advisors
Dr. Steven Peretti Chris Daubert

National Organization of Black Chemist and Chemical Engineers (NOBCCHE)

Officers 2002-2003
Contact Person: Dr. Christine S. Grant

Chemical Engineering Honors Society

Officers 2001-2002
President: Courtney Griffin
Vice-President: Mark Treece
Secretary: Sara McDonald
Treasurer: Emily Lewis
Senior Class Rep: Elisa Enders
Chapter Advisor: Dr. Robert M. Kelly

Officers 2002-2003
President: Sara McDonald
Vice-President: Tom Stiles
Treasurer: Ursula Papp
Secretary: Laura Robinson
Senior Representative: Melanie Chin

Graduating Class Data — 2000-2001

Statistics
B.S. ChE 108
Completed Co-op program 19

Second Degree
- Pulp & Paper Technology 19
- Chemistry 12
- Biochemistry 3
- Other 7
Cooperative Education Program

A sound students working as curriculum that combines theoretical and practical training in chemical engineering principles and design coupled with professional work experience is the basis of NC State’s Cooperative Education Program. The Cooperative Education Program at NC State provides outstanding undergraduates with terms of full-time study interspersed with up to five semesters and summer sessions of full-time engineering-related employment.

During the past year, 53 chemical engineering majors participated in the Co-op program. The students are full-time employees of the sponsoring company during their terms of work. During 2001-2002, the average monthly salary for Co-op chemical engineers during their first work rotation was $2,716. A high percentage of Co-op students receive offers of professional employment after graduation. Approximately 350 employers in North Carolina and throughout the nation participate in the Co-op program, thus providing a good cross-section of opportunities for industrial experience.

<table>
<thead>
<tr>
<th>Student</th>
<th>Employer</th>
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<tbody>
<tr>
<td>LENNON, KENNETH ADAM</td>
<td>ALCOA - MT. HOLLY</td>
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<td>CREEK, CARL RANDALL ALEXANDER</td>
<td>AMD - TEXAS</td>
</tr>
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<td>THOMPSON, JAMES RICHARD</td>
<td>AMD - TEXAS</td>
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<td>VANBLARCOM, THOMAS JOHN</td>
<td>AMGEN</td>
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<tr>
<td>ERNEST, RACHEL ALYSSA</td>
<td>BAY STATE PAPER</td>
</tr>
<tr>
<td>WILLIAMS, ADANDE NASHAUN</td>
<td>BIOGEN - RTP</td>
</tr>
<tr>
<td>BRUCE, JASON MICHAEL</td>
<td>BIOGEN - RTP</td>
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<tr>
<td>JAVOROSKI, LOUIS MARTIN</td>
<td>BOEHME FILATEX - REIDSVILLE</td>
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<td>JOHNSON, BRADLEY EDWARD</td>
<td>CATALYTICA - GREENVILLE</td>
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<td>MICKEY, BRADLEY DARYLE</td>
<td>CATALYTICA - GREENVILLE</td>
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<td>WILK, THOMAS JOSEPH</td>
<td>CATALYTICA - GREENVILLE</td>
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<td>POST, JESSICA HOPE</td>
<td>CELANANE ACETATE</td>
</tr>
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<td>ANDERSON, CATHERINE ELAINE</td>
<td>CIRRUS PHARMACEUTICAL</td>
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<td>HINES, MARTRICE EUGENE</td>
<td>Cognis</td>
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<td>WANG, DAPHNE SU-FEN</td>
<td>DISNEY COLLEGE PROGRAM</td>
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<td>TSE, VALERIE BIV-HAR</td>
<td>DUPONT - FAYETTEVILLE</td>
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<td>OGBURN, SCOTT THOMAS</td>
<td>DUPONT - RICHMOND</td>
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<td>STURTEVANT, BRYCE DANIEL</td>
<td>DUPONT - RICHMOND</td>
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<td>PAPP, URSULA ELAINE</td>
<td>DUPONT - WILMINGTON</td>
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<td>WINFIELD, LETISHA SHANTELL</td>
<td>DUPONT - WILMINGTON, DE</td>
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<td>MOYER, WESLEY THOMAS</td>
<td>EASTMAN CHEMICAL COMPANY</td>
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<td>COBB, CAMERON LEA</td>
<td>EASTMAN CHEMICAL COMPANY</td>
</tr>
<tr>
<td>ABBOTT, JARVIS BRANDON</td>
<td>EASTMAN CHEMICAL COMPANY</td>
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<td>SCHAEFER, JENNIFER AMANDA</td>
<td>FMC CORPORATION - MD</td>
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<td>ONDECK, MARA ANN</td>
<td>FMC CORPORATION - MD</td>
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<td>FRANKLIN, GARETT RANDALL</td>
<td>GLAXO SMITH-KLINE - RTP</td>
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<td>LIEU, HAO DONG</td>
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<td>LU, KAREN LIM-CHI</td>
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<td>NEPPLE, KERRY ANNE</td>
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<td>TAYLOR, LAUREL LEE</td>
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<td>HONEYWELL - HOPEWELL</td>
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<td>PETERS, DANIEL JOSEPH</td>
<td>HONEYWELL - MONCURE</td>
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<td>CLARK, STEVEN PHILLIP</td>
<td>KIMBERLY CLARK - LEXINGTON</td>
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<td>STVINCENT, SARA LEE</td>
<td>KIMBERLY CLARK - LEXINGTON</td>
</tr>
<tr>
<td>Name</td>
<td>Company/Location</td>
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<td>-------------------------</td>
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<td>WALSER, STEPHEN MARK</td>
<td>KIMBERLY CLARK - LEXINGTON, VA</td>
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<td>KIMBERLY CLARK - SC</td>
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<td>LANZI, NICHOLAS SCOTT</td>
<td>MALLINCKRODT INC</td>
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<td>HUDSON, ELTON PAUL</td>
<td>MERCK</td>
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<td>STILES, THOMAS STEVEN</td>
<td>NASA GODDARD - MD</td>
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<td>NASA KENNEDY</td>
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<td>BEAVERS, TRACY ALLISON</td>
<td>NATIONAL STARCH &amp; CHEMICAL</td>
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<td>ZALEWSKI, KATARZYNA EWA</td>
<td>NATIONAL STARCH &amp; CHEMICAL CO</td>
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<td>MCCALL, JOSHUA DANIEL</td>
<td>NATIONAL STARCH &amp; CHEMICAL CO</td>
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<td>SHARP, JESSICA ELENA</td>
<td>NOMACO</td>
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<td>SMITH, CHRISTOPHER REID</td>
<td>PHILIP MORRIS - VA</td>
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<td>GUTTU, SARAH BLYTHE</td>
<td>RJ REYNOLDS - MERRY HILL</td>
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<td>JOHNSTONE, PETER MICHAEL</td>
<td>WYETH LEDERLE - SANFORD</td>
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<tr>
<td>AMSTUTZ, ASHLEY MARGARET</td>
<td>WYETH LEDERLE - SANFORD</td>
</tr>
<tr>
<td>BURRIS, AMANDA CARRIE</td>
<td>WYETH LEDERLE - SANFORD</td>
</tr>
</tbody>
</table>
Career Placement

Companies Recruiting B.S. Graduates
(Companies listed came to campus for on-campus interviews)

AEP (American Electric Power)
ALBANY INTERNATIONAL CORP
ALBEMARLE CORPORATION
ALCOA
ARMSTRONG WORLD INDUSTRIES, INC.
BASF CORP./Permanent Positions
BAXTER HEALTHCARE CORPORATION
COTY US Inc.
DEPT. of the NAVY
DOW CHEMICAL COMPANY
DUPONT
EASTERN RESEARCH GROUP
EASTMAN CHEMICAL COMPANY
ENERGIZER
ENVIRONMENTAL MGMT. /Env. Mgmt. Div.
ExxonMobil
FMC CORPORATION
FRAMATOME ANP
GSE SYSTEMS
HEAT TRANSFER SALES of the Carolinas
HONEYWELL/Manufacturing
IBM
INTERNATIONAL PAPER CO.
KIMBERLY-CLARK CORPORATION
LINCOLN ELECTRIC
MALCOLM PIRNIE ENVIRONMENTAL ENGINEERS INC.
MERCK & CO., INC./Manufacturing
MICHELIN NORTH AMERICA
MILLIKEN AND COMPANY
NAN YA PLASTICS CORP. AMERICA
NATIONAL STARCH AND CHEMICAL COMPANY
NAVAL AVIATION DEPOT
NAVAL SURFACE WARFARE CTR/Carderock
NORFOLK NAVAL SHIPYARD
PROCTOR & GAMBLE/Albany
PROCTOR & GAMBLE/Manufacturing
PROGRESS ENERGY
ROBINS AIR FORCE BASE/Civilian Employment
ROHM AND HAAS COMPANY
SCHLUMBERGER OFS
SHELL COMPANIES
TENCARVA MACHINERY COMPANY
TRANE COMPANY
TRINITY CONSULTANTS
TVA
UOP
US AIR FORCE OFFICER PROGRAM
WESTINGHOUSE ELECTRIC COMPANY
WESTINGHOUSE SAVANNAH RIVER CO.

NACE Average Salary for BS Level ChEs = $51,417
NCSU Average Salary for BS Level ChEs = $52,850
Graduate Program

The graduate program consists of both formal (classroom) educational activities and a research experience.

<table>
<thead>
<tr>
<th>Student Enrollment</th>
<th>Trends in MS. Degrees Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>-Fall 2001</strong></td>
<td></td>
</tr>
<tr>
<td>M.S. Candidates</td>
<td></td>
</tr>
<tr>
<td>12</td>
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<tr>
<td>Ph.D. Candidates</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>96</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
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<tr>
<td>96</td>
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<tr>
<td>U.S. Citizens</td>
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<tr>
<td>54</td>
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<tr>
<td>Foreign</td>
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</tr>
<tr>
<td>42</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>96</td>
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</tbody>
</table>

Of the U.S. citizens, there are 12 minority students, as follows:
2 African Americans and 9 Asians, 1 Hispanic

The foreign students come from 10 countries: Bangladesh, China, Egypt, Ghana, India, Korea, Nigeria, Taiwan, Turkey, Venezuela

<table>
<thead>
<tr>
<th>Trends in Graduate Enrollment</th>
<th>Trends in Ph.D Degrees Granted</th>
</tr>
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<tbody>
<tr>
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<tr>
<td></td>
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<td>120</td>
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<td>20</td>
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<tr>
<td>Academic Year</td>
<td>Academic Year</td>
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</table>
# Graduate Students, 2001-2002

<table>
<thead>
<tr>
<th>Student</th>
<th>Major Professor</th>
<th>Undergraduate School</th>
<th>Matriculated</th>
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<tbody>
<tr>
<td>Abatemarco, Thomas</td>
<td>Parsons</td>
<td>Rensselaer Polytechnic</td>
<td>Fall 2000</td>
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<tr>
<td>Akad, Aysa</td>
<td>Hall</td>
<td>Bogazici University</td>
<td>Fall 2000</td>
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<td>Akoto-Ampaw, Paa-Joe</td>
<td>Grant</td>
<td>USTC-Kumasi</td>
<td>Fall 1999</td>
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<td>Amin, Samiul</td>
<td>van Zanten</td>
<td>Rutgers</td>
<td>Fall 1999</td>
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<td>Appaw, Collins</td>
<td>Khan/Kadla</td>
<td>USTC</td>
<td>Fall 2000</td>
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<td>Arnold, Michelle</td>
<td>Freeman</td>
<td>MIT- Cambridge, MA</td>
<td>Fall 1993</td>
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<td>Arroway, Jamie</td>
<td>van Zanten</td>
<td>Iowa State</td>
<td>Fall 1999</td>
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<td>Attwood, Brian</td>
<td>Hall</td>
<td>University of Buffalo</td>
<td>Fall 1997</td>
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<td>Bhatt, Ketan</td>
<td>Velev</td>
<td>BITS-Pilani</td>
<td>Fall 2001</td>
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<td>Bhat, Rajendra</td>
<td>Genzer</td>
<td>UDCT</td>
<td>Fall 1999</td>
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<td>Bhattacharya, Supriyo</td>
<td>Gubbins</td>
<td>IIT, Kharagpur</td>
<td>Fall 2000</td>
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<td>Bray, Kevin</td>
<td>Parsons</td>
<td>Brigham Young</td>
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<td>Burke, Matthew</td>
<td>Khan</td>
<td>Virginia Tech</td>
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<td>Burns, Kathie</td>
<td>Grant</td>
<td>UVA</td>
<td>Fall 2000</td>
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<td>Chang, Alan</td>
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<td>UVA</td>
<td>Fall 2000</td>
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<td>Chang, Lara</td>
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<td>Fall 1997</td>
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<td>Chennamsetty, Naresh</td>
<td>Gubbins</td>
<td>IIT, Madras</td>
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<td>Chhabra, Swapnil</td>
<td>Kelly</td>
<td>UDCT, Bombay</td>
<td>Fall 1997</td>
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<td>Chin, Paul</td>
<td>Roberts</td>
<td>Cornell</td>
<td>Fall 2001</td>
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<td>Chou, Chung-jung</td>
<td>Kelly</td>
<td>National Taiwan University</td>
<td>Fall 2001</td>
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<td>Chu, Changwoong</td>
<td>Parsons</td>
<td>Kyung Hee University</td>
<td>Fall 2001</td>
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<td>Clayson, Greg</td>
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<td>University of Buffalo</td>
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<td>Colina, Coray</td>
<td>Gubbins</td>
<td>Universidad Simon Bolivar</td>
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<td>Kelly</td>
<td>Case Western</td>
<td>Fall 2000</td>
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<td>Zhejiang University</td>
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<td>Freeman</td>
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<td>Fall 1998</td>
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<td>Eissa, Ahmed</td>
<td>Khan</td>
<td>Cairo University</td>
<td>Fall 2000</td>
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<td>Kelly</td>
<td>Penn State</td>
<td>Fall 1998</td>
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<td>Gao, Jun</td>
<td>Kelly</td>
<td>University of Florida</td>
<td>Fall 1996</td>
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<td>Gawrys, Keith</td>
<td>Kilpatrick</td>
<td>Florida State</td>
<td>Fall 1998</td>
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<td>Gerhold, Sally</td>
<td>Carbonell</td>
<td>Oklahoma State</td>
<td>Fall 2000</td>
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<td>Gupta, Atul</td>
<td>Parsons</td>
<td>I.I.T.-New Delhi</td>
<td>Fall 1996</td>
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<td>Gupta, Ruchi</td>
<td>Fedkiw/Khan</td>
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<td>Fall 2000</td>
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<td>Hoggan, Erik</td>
<td>Carbonell/DeSimone</td>
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<td>Fall 1996</td>
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<td>Hogge, Jeff</td>
<td></td>
<td>VCU</td>
<td>Fall 2001</td>
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<td>Hsu, Sarah</td>
<td>Kelly</td>
<td>UNC – CH</td>
<td>Fall 2001</td>
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<tr>
<td>Hung, Francisco</td>
<td>Gubbins</td>
<td>Universidad Simon Bolivar</td>
<td>Fall 2000</td>
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<td>Hussain, Yazan</td>
<td>Grant</td>
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<td>Fall 2001</td>
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<td>Jayaraman, Arthi</td>
<td>Hall/Genzer</td>
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<td>Jiang, Xingmao</td>
<td>Freeman</td>
<td>Nanjing University</td>
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<td>Johnson, Matthew</td>
<td>Kelly</td>
<td>Cornell University</td>
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<td>Kelly, M. Jason</td>
<td>Parsons</td>
<td>Case Western</td>
<td>Fall 1998</td>
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<td>Kennedy, Karen</td>
<td>Roberts/DeSimone</td>
<td>Georgia Tech</td>
<td>Fall 1997</td>
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<td>Kim, Jaehoon</td>
<td>Carbonell</td>
<td>Hanyang</td>
<td>Fall 2001</td>
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<td>Kloxin, Chris</td>
<td>van Zanten</td>
<td>Univ. of Colorado, Boulder</td>
<td>Fall 2000</td>
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<tr>
<td>Student</td>
<td>Major Professor</td>
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<td>Lewandowski, Michael</td>
<td>Ollis</td>
<td>Rensselaer Polytechnic</td>
<td>Fall 1996</td>
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<td>Lewis, Jodee</td>
<td>Haugh</td>
<td>Univ of Wisconsin, Platteville</td>
<td>Spr 2002</td>
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<td>Li, Yi</td>
<td>Carbonell</td>
<td>Zhejiang University</td>
<td>Spr. 2000</td>
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<td>Li, Zhengmin</td>
<td>Hall</td>
<td>Tsinghua University</td>
<td>Fall 1999</td>
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<td>Lin, Haiqing</td>
<td>Freeman</td>
<td>Xiamen University</td>
<td>Fall 1999</td>
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<td>Liu, Tao</td>
<td>Roberts</td>
<td>BUCT</td>
<td>Fall 2000</td>
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<td>Marchut, Alexander</td>
<td>Hall</td>
<td>University of Pennsylvania</td>
<td>Fall 2000</td>
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<td>McCormick, Julie</td>
<td>Hall/Khan</td>
<td>Virginia Tech</td>
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<td>Mehan, Pawan</td>
<td>Parsons</td>
<td>Univ of Florida</td>
<td>Fall 2001</td>
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<td>Mercier, George (Skip)</td>
<td>Haugh</td>
<td>University of TX, Austin</td>
<td>Fall 2000</td>
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<td>Merkel, Timothy</td>
<td>Freeman</td>
<td>Brooklyn Polytechnic</td>
<td>Fall 1996</td>
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<td>Michel, Joshua</td>
<td>Kelly</td>
<td>Univ. California, Davis</td>
<td>Fall 2000</td>
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<td>Mahmood, Shamsheer</td>
<td>Khan</td>
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<td>Fall 2001</td>
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<td>Nguyen, Hung D.</td>
<td>Hall</td>
<td>University of Florida</td>
<td>Fall 1998</td>
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<td>Niu, Dong</td>
<td>Parsons</td>
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<td>Novick, Brian</td>
<td>Carbonell</td>
<td>Tufts University</td>
<td>Fall 1997</td>
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<td>Park, ChangShin</td>
<td>Haugh</td>
<td>Chonbuk Nat'l. University</td>
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<td>Park, Kiejin</td>
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<td>Pusan National University</td>
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<td>Passmore, Joel</td>
<td>Khan/DeSimone</td>
<td>VA Commonwealth</td>
<td>Fall 2000</td>
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<td>Patil, Nikunj</td>
<td>Spontak</td>
<td>BITS, Pilani</td>
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<td>Patterson, Joan</td>
<td>Roberts</td>
<td>Johns Hopkins</td>
<td>Fall 2001</td>
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<td>Pikunic, Jorge</td>
<td>Gubbins</td>
<td>Universidad Simon Bolivar</td>
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<td>Prabakar, Rajeev</td>
<td>Freeman</td>
<td>IIT, Kharagpur</td>
<td>Fall 1998</td>
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<td>Prevo, Brian</td>
<td>Velev</td>
<td>Univ of CA, Davis</td>
<td>Fall 2001</td>
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<td>Pysz, Marybeth</td>
<td>Kelly</td>
<td>SUNY-Buffalo</td>
<td>Fall 1997</td>
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<td>Riley, Michael</td>
<td>Fedkiw/Khan</td>
<td>West Virginia</td>
<td>Fall 1995</td>
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<td>Roskowski, Amy</td>
<td>Parsons/Davis</td>
<td>Ohio Northern</td>
<td>Fall 1996</td>
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<td>Salm, Jeffrey</td>
<td>Carbonell</td>
<td>Delaware</td>
<td>Fall 1998</td>
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<td>Sanchez, Angelica</td>
<td>Khan/Fedkiw</td>
<td>Universidad Simon Bolivar</td>
<td>Fall 2001</td>
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<td>Saraf, Manish Kumar</td>
<td>Roberts</td>
<td>I.I.T., Madras</td>
<td>Fall 1999</td>
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<td>Schneider, Ian</td>
<td>Haugh</td>
<td>Iowa State</td>
<td>Fall 2000</td>
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<tr>
<td>Schultz, Andrew</td>
<td>Hall/Genzer</td>
<td>University of Tulsa</td>
<td>Fall 1998</td>
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<tr>
<td>Sehgal, Amitabh (Dave)</td>
<td>Kelly</td>
<td>NC State</td>
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<td>Semler, James</td>
<td>Genzer</td>
<td>Michigan Tech</td>
<td>Fall 1998</td>
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<td>Shockley, Keith</td>
<td>Kelly</td>
<td>NM State</td>
<td>Fall 1998</td>
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<td>Sigmon, Susan</td>
<td>Lamb</td>
<td>NCSU</td>
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<td>Siripurapatu, Srinivas</td>
<td>Khan/Spontak</td>
<td>BITS, Pilani</td>
<td>Fall 1998</td>
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<td>Smith, Daniel</td>
<td>Freeman</td>
<td>University of Maryland</td>
<td>Fall 2000</td>
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<td>Smith, Matthew</td>
<td>Kilpatrick/Genzer</td>
<td>NC State</td>
<td>Fall 2000</td>
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<td>Smith, Nicholas</td>
<td>Lamb</td>
<td>Ohio State</td>
<td>Fall 1997</td>
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<td>Spiecker, P. Matthew</td>
<td>Kilpatrick</td>
<td>Lafayette College</td>
<td>Fall 1995</td>
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<td>Sun, Xiaolei</td>
<td>Roberts</td>
<td>BUCT</td>
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<td>Tanner, Shaun</td>
<td>van Zanten</td>
<td>Florida State</td>
<td>Fall 2000</td>
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<td>Terry, David</td>
<td>Parsons</td>
<td>UNCW</td>
<td>Fall 1999</td>
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<td>Tomlinson, Michael</td>
<td>Genzer/Gorman</td>
<td>Auburn University</td>
<td>Fall 2000</td>
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<td>Toy, Lora</td>
<td>Freeman</td>
<td>Univ. California, Berkeley</td>
<td>Fall 1994</td>
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Graduate Students, 2001-2002 (cont’d)

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<th>Student</th>
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<tr>
<td>Turner, C. Heath</td>
<td>Gubbins</td>
<td>Auburn</td>
<td>Fall 1997</td>
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<td>Walker, Teri</td>
<td>Spontak/Khan</td>
<td>Univ. of Colorado, Boulder</td>
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<td>Walls, Howard</td>
<td>Khan</td>
<td>Univ. of Colorado, Boulder</td>
<td>Spr. 1995</td>
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<td>Wang, Guangquan</td>
<td>Carbonell</td>
<td>Dalian U. of Tech.</td>
<td>Fall 1999</td>
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<td>Wegl, Diane</td>
<td>Haugh</td>
<td>VA Tech</td>
<td>Fall 2001</td>
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<td>Wei, Bin</td>
<td>Spontak/Genzer</td>
<td>Zhejiang University</td>
<td>Fall 2000</td>
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<td>Wilcox, Esther</td>
<td>Roberts/Spivey</td>
<td>University of Tulsa</td>
<td>Fall 1998</td>
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<td>Wilder, Elizabeth</td>
<td>Spontak/Hall</td>
<td>U. Mass-Amherst</td>
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<td>Wu, Tao</td>
<td>Genzer</td>
<td>BUCT</td>
<td>Fall 1998</td>
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<td>Xu, Dawei</td>
<td>Roberts</td>
<td>Tianjin University</td>
<td>Fall 2000</td>
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<td>Yerian, Jeff</td>
<td>Fedkiw/Khan</td>
<td>Univ. of Cincinnati</td>
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<td>Zhou, Jian</td>
<td>Fedkiw</td>
<td>Tsinghua University</td>
<td>Fall 1997</td>
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</tbody>
</table>
Graduate Degree Recipients 2001-2002

Master of Science (M.S.) Degrees

August 2001

Gregory A. Clayson
(Non-thesis)
(Peter S. Fedkiw)
B.S., University at Buffalo, Buffalo, NY
Naval Depot, Cherry Point, NC

Nikunj P. Patel
(Course Only)
(Richard J. Spontak)
B.S., Birla Institute of Technology & Science, Pilani, India
PhD Program, North Carolina State University

December 2001

Manish K. Saraf
Continuous Polymerization of Vinylidene Fluoride in Supercritical Carbon Dioxide; Polymer Weight Distribution
(George W. Roberts)
B.S., Indian Institute of Technology, Madras, India
Barclays Capitals, New York, NY

Paa-Joe J. Akoto-Ampaw
Development of Quartz Crystal Microbalance For High Pressure CO2 Applications
(Christine S. Grant)
B.S., University of Science & Technology, Ghana
Shell Oil Company, Houston, TX

Brian C. Attwood
Global Phase Diagram for Monomer/Dimer Mixtures
(Carol K. Hall)
B.S., University at Buffalo, Buffalo, NY
PhD Program, North Carolina State University

Rajendra R. Bhat
(Course Only)
(Jan Genzer)
B.S., University Department of Chemical Technology
Mumbai, India
PhD Program, North Carolina State University

Kevin L. Epting
Xylose (Glucose) Isomerases from Thermotoga Species: Biochemical, Biophysical, & Bioprocessing Issues
(Robert M. Kelly)
B.S., Penn State University, University Park, PA
PhD Program, North Carolina State University

Hua Deng
Electrochemical Deposition of Nanocrystalline Copper And Copper-Based Composite Films
(Peter S. Fedkiw)
B.S., Zhejiang University, Hangzhou, China
De Nora North America, Inc., Somerset, NJ

May 2002

James D. Arroway
(Course Only)
(John H. van Zanten)
B.S., Iowa State University, Ames, IA
Amphora, Durham, NC

Xingmao Jiang
Identification of Peptide Ligands from Solid Phase Combinatorial Peptide Libraries that Bind Staphylococcal Enterotoxin B (SEB)
(Benny D. Freeman)
B.S., Chonbuk National University, Chonju, Korea
PhD Program, North Carolina State University

ChangShin Park
(Course Only)
(Jason Haugh)
B.S., Chonbuk National University, Chonju, Korea
PhD Program, North Carolina State University

Guangquan Wang
Identification of Peptide Ligands from Solid Phase Combinatorial Peptide Libraries that Bind Staphylococcal Enterotoxin B (SEB)
(Ruben G. Carbonell)
B.S., Dalian University of Technology, Dalian, China
PhD Program, North Carolina State University
Doctor of Philosophy (Ph.D.) Degrees

December 2001

Timothy C. Merkel

Organic-inorganic Nanocomposite Membranes for Vapor Separations
(Benny D. Freeman)
B.S., Polytechnic University, Brooklyn, NY
Research Triangle Institute, RTP, NC

Michelle E. Arnold

Characterization of Microphase-Separated Block Copolymers for Membrane Applications
(Benny D. Freeman)
B.S., Massachusetts Institute of Technology, Cambridge, MA
Novo Enzymes, Franklinton, NC

Matthew D. Burke

Enzymatic Modification of Biopolymers, Solutions, and Hydrogels
(Saad A. Khan)
B.S., Virginia Polytechnic Institute and State University, Blacksburg, VA
GSK, Research Triangle Park, NC

Michael W. Riley

Hectorite-based Nanocomposite Electrolytes for Lithium-ion Batteries
(Peter S. Fedkiw & Saad A. Khan)
B.S., West Virginia University, Morgantown, WV
Microcell, Inc., Raleigh, NC

Matthew D. Burke

Enzymatic Modification of Biopolymers, Solutions, and Hydrogels
(Saad A. Khan)
B.S., Virginia Polytechnic Institute and State University, Blacksburg, VA
GSK, Research Triangle Park, NC

Amitabh C. Sehgal

Effect of Reaction Environment on Biocatalysis and Enantioselectivity of Hyperthermophilic Esterases
(Robert M. Kelly)
B.S., North Carolina State University, Raleigh, NC
Merck, West Point, PA

Atul Gupta

Surface Reactions During Plasma Enhanced Chemical Vapor Deposition of Silicon and Silicon Based Dielectrics
(Gregory N. Parsons)
B.S., Indian Institute of Technology, New Delhi, India
AMD, Sunnyvale, CA

P. Matthew Spiecker

The Impact of Asphaltene Chemistry and Solvation on Emulsion and Interfacial Film Formation
(Peter K. Kilpatrick)
B.S., Lafayette College, Easton, PA
ExxonMobil Upstream Research Company, Houston, TX

Amy M. Roskowski

Novel Growth Methods of III-Nitrides on 6H-SiC
(Robert F. Davis & Gregory N. Parsons)
Ohio Northern University, Ada, Ohio
Intel Corporation, Portland, OR

Lora G. Toy

Gas and Hydrocarbon Vapor Transport Properties of Novel Disubstituted Polycetylene Membranes
(Benny D. Freeman)
B.S., University of California at Berkeley, Berkeley, CA
Research Triangle Institute, RTP, NC

Xiaolei Sun

Promoted Zinc Chromite Catalyst for Higher Alcohol
Synthesis in a Slurry Reactor
(George W. Roberts)
B.S., Beijing University of Chemical Technology, Beijing, China
Post-Doc, North Carolina State University

Howard J. Walls

Colloidal Silica Gels as Composite Electrolytes: Rheology and Ion Transport
(Saad A. Khan)
B.S., University of Colorado, Boulder, CO
NIST, Gaithersburg, MD

May 2002

Michael Lewandowski

Apparent Deactivation in the Photocatalytic Oxidation of Gas-Phase Aromatic Contaminants on Titanium Dioxide (TiO2)
(David F. Ollis)
B.S., Rensselaer Polytechnic Institute, Troy, NY
Post-Doc, North Carolina State University
Trends in Graduate Admissions, 1988-2001

GRADUATE FELLOWSHIPS AND AWARDS, 2001-2002

Dean's Fellowship

Jeff Hogge
Sarah Hsu
Jodee Lewis
Pawan Mehan
Joan Patterson
Diane Seamans
Susan Sigmon

Eastman Summer Fellowship

Elizabeth Wilder

Graduate Assistance in Areas of National Need (GAANN)

Thomas Abatemarco
Matthew Burke
Ruchi Gupta
Sarah Hsu
Matthew Johnson
Ian Schneider
Diane Seamans
Jeffrey Yerian

Keep North Carolina Clean and Beautiful

Brian Novick

Mentored Teaching Assistantship

Michael Tomlinson

National Science Foundation

Keith Gawrys

National Science Foundation Research Ethics

Esther Wilcox

NIH Biotechnology Training Program Traineeship

Alexander Marchut
Joshua Michel
Matthew Smith
Research Expenditures

The following graph illustrates the trends in total expenditures from research grants and contracts (not including academic faculty salaries or discretionary funds). These expenditures reflect faculty summer salaries, release time, student salaries (both graduate and undergraduate performing research), equipment, supplies, services, printing, postage, and other operational costs related to research. The most recent compilation of research expenditures in Chemical Engineering Departments across the nation (Chemical & Engineering News, 80, 43, 46, 2002) lists the NCSU department as number two in total expenditures and number six in federal expenditures, which was approximately 33% of total expenditures for the reporting period.
Career Placement

Companies Recruiting M.S. and Ph.D Graduates
(Companies listed came to campus for on-campus interviews)

ALBEMARLE CORPORATION
BASF CORP./Permanent Positions
CNA CORPORATION
DEPT. of the NAVY
DOW CHEMICAL COMPANY
DUPONT
EASTERN RESEARCH GROUP
EASTMAN CHEMICAL COMPANY
ENERGIZER
ExxonMobil
FRAMATOME ANP
GSE SYSTEMS
HONEYWELL/Manufacturing
IBM
INTERNATIONAL PAPER CO.
KIMBERLY-CLARK CORPORATION
MALCOLM PIRNIE ENVIRONMENTAL ENGINEERS INC.
MERCK & CO., INC./Manufacturing
MILLIKEN AND COMPANY
NATIONAL STARCH AND CHEMICAL COMPANY
NAVAL AVIATION DEPOT
NAVAL SURFACE WARFARE CTR/Carderock
PROCTER & GAMBLE/Albany
PROCTER & GAMBLE/MANUFACTURING
PROGRESS ENERGY
ROBINS AIR FORCE BASE/Civilian Employment
ROHM AND HAAS COMPANY
SCHLUMBERGER OFS
SHELL COMPANIES
TRINITY CONSULTANTS
UOP
WESTINGHOUSE SAVANNAH RIVER CO.

NACE Average Salary for MS Level ChEs = $58,083
NACE Average Salary for PhD Level ChEs = $78,289
Faculty Activities

The Chemical Engineering faculty at North Carolina State University is an outstanding group of teacher-scholars whose interests encompass most areas of research in chemical engineering. The faculty have strong research associations with not only the traditional academic funding groups in the federal government — NSF, DOE, ARO, NIH, DARPA and others — but also with a number of major corporate sponsors, including DuPont, Mobil Oil, Bayer Corporation, Novo Nordisk, Shell Oil, Exxon, Chevron, Texaco, Hoechst-Celanese, 3M, and Eastman Chemical.

Chemical engineering education has always had a high priority in our department, and our faculty feel a strong sense of responsibility to provide a high quality educational experience for our undergraduate and graduate students. The Department takes great pleasure in providing a scholarly environment where our faculty can develop a balanced approach towards excellence in both teaching and research. Ten of our twenty-one research faculty have won prestigious teaching awards at the university and/or national levels.

Activities by Faculty Member

Lisa Bullard
Lecturer and Coordinator of Undergraduate Advising
206 Riddick
B.S. North Carolina State University (1986)
(919) 515-7455
lisa_bullard@ncsu.edu

Interests: Multidisciplinary process design, teaching effectiveness, advising, educational outreach to K-12

2001-2002 Publications

Published


Contributed Presentations


Carbonell, Ruben G.
KOSA Professor of Chemical Engineering
Director, William R. Kenan, Jr. Institute for Engineering, Technology & Science
B.S. Manhattan College (1969)
Ph.D. Princeton University (1973)

Interests: Biochemical engineering; molecular recognition; bioseparations; immunodiagnostics; colloid and interface science; transport phenomena

2001-2002 Publications

Published (Refereed)


Invited Presentations

Symposium on Supercritical Fluid Extraction and Chromatography and Processes, Myrtle Beach, SC, August 18-22. Gave a tutorial on supercritical fluid transport properties and a lecture on Coatings from Liquid and Supercritical CO2.

Lecture on Coatings from Liquid and SupercriticalCO2, Department of Chemical Engineering, Georgia Institute of Technology, February 19-20, 2002
DeSimone, Joseph M.
William R. Kenan Jr. Distinguished Professor
Of Chemical Engineering (NCSU) and Chemistry (UNC Chapel Hill)
B.S. Ursinus College (1986)
Ph.D. Virginia Polytechnic Institute and State University (1990)

Interests: Polymer synthesis in supercritical fluids; surfactant design for applications in interfacial chemistry.

2001-2002 Publications

Published (Refereed)


“Electrospinning of Polymer Nanofibers with Specific Surface Chemistry” Deitzel, J. M.; Kosik, W.; McKnight, S. H.; Beck Tan*, N. C.; DeSimone, J. M.; Crette, S. Polymer 2001 in press.


10th International Symposium & Exhibition on Supercritical Fluid Chromatography, Extraction, and Processing: The CO₂ Technology Platform From Material Synthesis to Microelectronics Processing

Kenan Flagler Business School Millenium Society Members and Guests, UNC-Chapel Hill, May 3, 2001

Virginia Polytechnic Institute and State University Chemistry Department Graduation Program Honored Speaker, May 12, 2001


IUPAC Free Radical Polymerization Kinetics and Mechanism Presented by Student Luke Zannoni & DeSimone on Studies on the Synthesis of Fluoropolymers in Liquid and Supercritical CO₂, Tuscany, Italy, June 3-8, 2001

IUPAC ChemRawn XIV University of Colorado at Boulder: The CO₂ Technology Platform, June 9-11, 2001

Invited Presentations


“Gas Permeation Properties of Poly(1,1'-dihydroperfluorooctyl acrylate), Poly(1,1'-dihydroperfluorooctyl methacrylate) and Poly(styrene)-b-Poly(1,1'-dihydroperfluorooctyl acrylate) Block Copolymers”; Arnold, M.; DeSimone, J. M.; Freeman, B. Macromolecules 2001, 34, 5611-5619.


Green Chemistry Institute Governing Board Meeting, Washington, DC, August 7-8, 2001

American Chemical Society 222nd National Meeting and Expos: The CO₂ Technology Platform, August 26-28, 2001

6th International Conference on Carbon Dioxide Utilization: The CO₂ Technology Platform, September 10-11, 2001

University of Texas at Austin: The CO₂ Technology Platform, September 25-26, 2001

Fifteenth Annual Ernst & Young’s Entrepreneur of the Year, November 14-18, 2001

Fall Meeting of the Materials Research Society: The CO₂ Technology Platform, Boston, MA, November 25-27, 2001

Board of Chemical Science & Technology National Academy of Science, Washington, DC, Dec 9-10, 2001

Presentation at GA Tech: The CO₂ Technology Platform, December 13, 2001
University of Florida Gainesville: The CO$_2$ Technology Platform, December 16, 2001

IEEE Workshop: The CO$_2$ Technology Platform January 11, 2002

Institute for Biotechnology Information at RTP, NC, February 17, 2002

The University of Texas at Austin Organic Seminar: The CO$_2$ Technology Platform, February 25, 2002

Proceedings of SPIE Microlithography: The CO$_2$ Technology Platform, Santa Cruz, CA, March 3-7, 2002

Seminar Speaker University of FL Department of Materials Science and Engineering: The CO$_2$ Technology Platform, March 26-28, 2002

DSSG Defense Science Study Group, Washington, DC April 2-4, 2002

ACS: The CO$_2$ Technology Platform, Orlando FL, April 9-10, 2002

8th ISASF Meeting: The CO$_2$ Technology Platform, France, April 14-17, 2002

Dupont Carothers Award, Outstanding Contributions and Advances in Industrial Application Chemistry, Wilmington DE, April 24 & 26, 2002

Seminar Speaker at Atofina: The CO$_2$ Technology Platform, King of Prussia, PA, May 30, 2002

Board on Chemical Sciences and Technology National Research Council April 25-26, 2002

**Issued Patents:** (** indicates that a corporation has licensed the patent; *** indicates that a corporation has an option to license the patent;


US Patent 6,211,422; April 3, 2001; Enzyme Catalysis in Carbon Dioxide Fluids”; Inventors: J. M. DeSimone, R. Carbonell

US Patent 6,224,774; May 1, 2001; “Method of Entraining Solid Particulates in Carbon Dioxide Fluid”; Inventors: J. M. DeSimone, T. Romack, J. B. McClain, D. E. Betts


Fedkiw, Peter S.  
Professor  
B.S. University of Delaware (1974)  
Ph.D. University of California, Berkeley (1978)  

Interests: Electrochemical reaction engineering; electrocatalysis; environmental applications of electrochemistry

2001-2002 Publications

Published (Refereed)

Khaled Saber, Peter S. Fedkiw, and Carl Koch, “Pulse-Current Electrodeposition of Nanocrystalline Zinc,” in press, Materials Science and Engineering: A.


Contributed Presentations


"Rheology and microstructure of mixed colloidal gels", 73rd Mtg. of the Society of Rheology, Oct., 2001 (with Jeffrey A. Yerian, Courtney L. Griffin, Saad A. Khan).


Genzer, Jan
Assistant Professor

Interests: Behavior of polymers and organic liquids at interfaces and confined geometries

2001-2002 Publications

Published (Refereed)


J. Genzer, “Copolymer adsorption on planar chemically heterogeneous substrates: The interplay between the monomer sequence distribution and interaction energies”, Macromolecular Theory & Simulations 11, 481 (2002) + ON THE COVER


Contributed Presentations

Design and Interfacial Activity of Random-Block Copolymers with Controlled Sequence Distributions, presented at the 11th Annual Undergraduate Research Symposium, NCSU, Raleigh NC, April 18th, 2002 (with D. N. Erel, J. J. Semler).


Tuning the surface properties of elastomers using mechanically assembled monolayers, Presented at the *Fall meeting of the Materials Research Society*, December 2001, Boston, MA (with K. Efimenko).

Monte Carlo Simulations of Copolymer Adsorption from Copolymer/Homopolymer Melts near Planar Chemically Patterned Surfaces, Presented at the *Fall meeting of the Materials Research Society*, December 2001, Boston, MA (with J. Semler).

Direct Comparison of Surface and Bulk Chain Relaxation in Polystyrene, Presented at the *Fall meeting of the American Vacuum Society*, November 2001, Boston, MA (with W. E. Wallace, D. A. Fischer, K. Efimenko and W.L. Wu).


Grant, Christine
Associate Professor
M.S. Georgia Institute of Technology (1986)
Ph.D. Georgia Institute of Technology (1989)

Interests: Surface and Interfacial Science, Transport Phenomena, Pollution Prevention, Tribology: lubricants for MEMS and extreme environments

2001-2002 Publication

Published (Refereed)

Contributed Presentations


Gubbins, Keith E.
W.H. Clark Distinguished University Professor
B.S.  Chemistry, University of London (1958)
Ph.D.  University of London (1962)

Interests:  Confined materials; adsorption; molecular simulation; surface properties.

2001-2002 Publications

Published (Refereed)


Invited Presentations


“Freezing in Narrow Pores”, Oak Ridge National Laboratory, April 29, 2002.

“Freezing in Narrow Pores”, Oxford University, May 1, 2002.

“Molecular Simulation: Some Recent Applications in Phase Separations and Reacting Systems”, Imperial College of Science, Technology and Medicine (Chemical Engineering Department), London, May 16, 2002.


“Freezing in Nano-Porous Materials”, Queen’s University, Belfast, June 6, 2002.
Hall, Carol
Alcoa Professor
B.S. Physics, Cornell University (1967)
M.S. Physics, S.U.N.Y. at Stony Brook (1969)
Ph.D. Physics, S.U.N.Y. at Stony Brook (1972)

Interests: Statistical thermodynamics and computer simulation

2001-2002 Publications

Publications (Refereed)


H. Jang, C. K. Hall and Y. Zhou, "Folding Pathways and Kinetics of Protein: Molecular Dynamics"


**Invited Presentations**


“Computer Simulation Studies of Protein Refolding and Aggregation,” Chemical Engineering Department, City College, New York, April 2002.

“Molecular Dynamics Simulations of Multi-Protein Systems,” CECAM Workshop on Protein Folding Simulations, Lyons, France, May, 2002.
Haugh, Jason M.
Assistant Professor
B.S. North Carolina State University (1994)
Ph.D. Massachusetts Institute of Technology (1999)

Assistant Professor       (919) 513-3851
B.S. North Carolina State University (1994)    jason_haugh@ncsu.edu
Ph.D. Massachusetts Institute of Technology (1999)

**Interests:** Biomedical and biochemical engineering; signal transduction networks; mammalian cell engineering

**2001-2002 Publications**

**Publications (Refereed)**


**Invited Presentations**

“Modeling molecular processes in intracellular signal transduction.”
Seminar speaker, Biomathematics Program, North Carolina State University, October 2001.

“Intracellular signaling in cell membranes: reactions in two dimensions, subcellular compartmentalization, and spatial sensing.”

“Games enzymes play: regulation of tyrosine phosphatases in receptor signaling.”

“Imaging, modeling, and analysis of signal transduction networks.” Seminar speaker, Department of Chemical Engineering, Virginia Institute of Technology, April 2002.
### Interests:
Rheology & Structures of Complex systems: Gels, Suspensions, Nanocomposites, Associative polymers & Biopolymers

### 2001-2002 Publications

#### Published (Refereed)

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#### Invited Presentations

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<tr>
<td>14th SIS (Surfactants in Solutions) Mtg., Barcelona, Spain, June 2002</td>
<td>Rheology of associative polymers: modulating hydrophobic interactions through inclusion compounds and surfactants.</td>
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<td>AIChE Annual Mtg. (Alpha Chi Sigma Award Session), 2001</td>
<td>Microstructure, Diffusion and Rheology in Biopolymer Solutions and Gels.</td>
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<td>9th International Symposium Macromolecule-Metal Complexes, Jul. 2001</td>
<td>Silica-based Nanocomposite Polymer Electrolytes: Microstructure, Rheology and Ionic Conductivity.”</td>
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#### Contributed Publications

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**Kelly, Robert M.**

Alcoa Professor  
Director of NCSU Biotechnology Program  
Associate Vice-Chancellor for Research and Graduate Studies  

Suite 3309, Partners II  
(919) 515-6396  
rmkelly@eos.ncsu.edu  

B.S. University of Virginia (1975)  
M.S. University of Virginia (1976)  
Ph.D. North Carolina State University (1981)  

**Interests:**  
Biochemical engineering; biocatalysis at extremely high temperatures; microbial physiology; enzyme engineering  

2001-2002 Publications  


Books and Book Chapters

Adams, M.W.W., and R.M. Kelly (Eds.)

Adams, M.W.W., and R.M. Kelly (Eds.)


Patents

Kelly, R.M., S.H. Brown, and H.R. Costantino.

Invited Presentations

Department of Chemical Engineering, UMBC, October, 2001.


Middle Atlantic Biochemical Engineering Consortium (MABEC) meeting,

Department of Chemical Engineering, Drexel University, March, 2002.

Kilpatrick, Peter K  
Department Head
B.S. Occidental College (1978)
Ph.D. University of Minnesota (1983)

Interests: Surfactant and interfacial science; fluid microstructure; colloidal aggregates; phase equilibria; biotechnology.

2001-2002 Publications

Publications(Refereed)


Invited Talks

Asphaltene Chemistry and Aggregation Behavior: Correlation with Emulsion Stabilization, Norwegian Technical University, Trondheim, October 15, 2001

The Role of Asphaltene Chemistry on Aggregation, Interface Adsorption, and Emulsion Stability, Syncrude Corporate Research, Edmonton, Alberta, December 6, 2001

The Role of Asphaltene Chemistry on Aggregation, Interface Adsorption, and Emulsion Stability, Department of Chemical Engineering, University of Alberta, Edmonton, Alberta, December 7, 2001


**Lamb, H. Henry**  
Associate Professor  
B.S. North Carolina State University  
Ph.D. University of Delaware

**Interests:** Heterogeneous Catalysis; Microelectronics; Surface Science

**2001-2002 Publications**

**Publications (Refereed)**


**Invited Presentations**


**Contributed Presentations**


A. Khandelwal and H. H. Lamb, “Nitrogen Incorporation in Ultrathin Gate Dielectrics: A
Lim, P. K.  
Professor  
B. S. Cornell University (1975)  
M.S. University of Illinois (1978)  
Ph.D. University of Illinois (1979)  

Interest: Kinetics, catalysis and reaction engineering; environmentally benign synthesis  

2001-2002 Publications  

Publications (Refereed)
Ollis, David F.
Distinguished Professor       (919) 515-2329
B.S. California Institute of Technology (1963)    ollis@eos.ncsu.edu
M.S. Northwestern University (1964)
Ph.D. Stanford University (1969)

Interests: Photochemical and Biochemical technology; First-year engineering

2001-2002 Publications

Publications (Refereed)

“Pre-Chlorination for Halide Enhancement of Photocatalytic Destruction of Pollutants”, Olga d’Hennezel and D. F. Ollis, invited submission to Helvetica Chimica (Andre Braun celebratory volume), 84, 3511, 2001


Contributed Presentations


“Research and Proposal Writing: Art and Architecture” NCSU New Faculty Workshop (wth R.Felder, R.Brent, NCSU), August , 2002, NCSU.


Overcash, Michael
Professor
B.S. North Carolina State University (1966)
M.S. University of New South Wales (1967)
Ph.D. University of Minnesota (1972)

**Interests:** Design for Environment, Life Cycle Studies, Manufacturing and Supply Chain, Pollution Prevention

**2001-2002 Publications**

*Published (Refereed)*


*Contributed Presentations*


Overcash, M. Sustainability – concepts for research in life cycle and chemical engineering, 5th World Congress of Chemical Engineering, Melbourne, Australia, 19p. 2001.


Gregory N. Parsons
Professor
(919) 515-753
gregory_parsons@ncsu.edu

217 Riddick
Ph.D. Physics, North Carolina State University (1990)

Interests: Plasma-enhanced deposition of semiconducting and insulating thin films, including silicon, high-k dielectrics. Fundamental modeling and experiments of surface reactions in thin film deposition. Nano and Molecular Electronics.

2001-2002 Publications

Publications (Refereed)

T. Gougousi, D.Terry, M.J. Kelly and G. N. Parsons “Properties of La-silicate high-k dielectric films formed by oxidation of La on Silicon” (submitted).

A. Gupta and G.N. Parsons, “A Surface Hydride-Dependent Precursor Diffusion Model for Low Temperature Amorphous Silicon Deposition” (submitted).


Invited Presentations


G. N. Parsons, “Silicon/High-k Interface Reactions” Motorola APRDL, Austin, TX, October 19, 2001.

G. N. Parsons, “Silicon/High-k Interface Reactions” University of North Texas, Denton, TX, October 18, 2001.

G. N. Parsons, “Silicon/High-k Interface Reactions” Texas Instruments, Dallas, TX, October 17, 2001.


**Contributed Presentations**


Peretti, Steven
Associate Professor
B.S. Yale University (1979)
Ph.D. California Institute of Technology (1987)

Interests: Biocatalysis, bioreactor dynamics, bioremediation, combinatorial molecular biology

2001-2002 Publications

Publications


Contributed Presentations

“Biocatalysis and Fine Chemical Production”, U. Maryland, Baltimore County, Department of Biochemical Engineering, Oct. 16. 2001, invited lecture


“Bioconversion of toluene to p-hydroxybenzoate utilizing modified Pseudomonas putida”, (w/E.S. Miller), AIChE Annual Meeting., Reno, NV, November, 2001


“On creating a multidisciplinary curricular paradigm”, (w/M.R. Heil), FIE Annual Conference, Reno, October 2001

“Enhancing technical communication skills of engineering students: An experiment in multidisciplinary design”, (w/ R. Fornaro and M.R. Heil), FIE Annual Conference, Reno, October 2001
Roberts, George  
Professor  
B.S. Cornell University (1961)  
Ph.D. Massachusetts Institute of Technology (1965)  

Interests: Kinetics, Reaction Engineering, Applied Catalysis, Pollution Prevention  

2001-2002 Publications  

Publications (Refereed)  


Invited Presentations  


Contributed Presentations  


Frankel, K. A., Spivey, J. J. and Roberts, G. W., “Mathematical Model of the Deactivation of Pt/Alumina Catalyst during the Hydrochlorination of 1,1,1-Trichloroethane”, 9th International Symposium


Spivey, James J.
Research Professor
10B Riddick
(919) 513-4475
jjspivey@ncsu.edu

B.S., M.S. North Carolina State University (1972, 1974)
Ph.D. Louisiana State University (1980)

Interests: Heterogeneous catalysis and reaction engineering, synthesis gas chemistry and catalysis, environmental catalysis, emission controls, acid-base catalysis.

2001-2002 Publication

Publications (Refereed)


“Mathematical model of the deactivation of Pt/alumina catalyst during the hydrodechlorination of 1,1,1-trichloroethane” Frankel, Kevin A.; Spivey, J. J.; Roberts, George W. Studies in Surface Science and Catalysis (2001), 139(Catalyst Deactivation 2001), 439-446.


Contributed Presentations


Hydrodechlorination of 1,1,1-trichloroethane over Pt/alumina catalysts”, G.W. Roberts, K.A. Frankel,


**Spontak, Richard J.**  
Associate Professor & Director of Graduate Admissions  
B.S. Penn State University (1983)  
Ph.D. University of California at Berkeley (1988)  
(919) 515-4200  
Rich_Spontak@ncsu.edu

**Interests:** Polymer science and engineering; morphology of nanostructured soft-condensed matter; electron microscopy techniques

### 2001-2002 Publications

**Publications (Refereed)**

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50


**Invited Presentations**


"3-D Characteristics of Complex Polymer Nanostructures," Department of Chemistry, University of Toronto, Toronto, Canada, 2002.


"3-D Characteristics of Complex Polymer Nanostructures," Department of Chemistry, Indiana University, Bloomington, IN, 2001.

"Molecular, Nanostructural and Property Considerations in Microphase-Separated Triblock Copolymer Systems," Department of Polymer Chemistry, University of Kyoto, Kyoto, Japan, 2001.

**Contributed Presentations**


van Zanten, John H.
Assistant Professor
203 Riddick
(919) 515-2520
john_vz@ncsu.edu
B.S. UCLA (1986)
Ph.D. UCLA (1992)

Interests: Complex Fluids; Colloidal and Macromolecular Physics; Biophysical Phenomena; Lipid, Peptide and Polymer-Based Drug and Gene Delivery Systems; Submicron Particle Sizing; Light, Neutron and X-Ray Scattering

2001-2002 Publications

Publications (Refereed)


Contributed Presentations

“Polycation/DNA Nanocomplex Delivery from Porous Microspheres”, presented at the 2001 Annual BMES Fall Meeting, Durham, NC, October 4th-7th. Co-authors Y. Ha-rel and J.S. Hanes.


“Brownian Motion in Surfactant Solutions”, presented at the 2001 Annual AIChE National
Meeting, Reno, NV, November 4\textsuperscript{th}-9\textsuperscript{th}. Co-authors S. Amin, R.M. van Zanten and C.J. Kloxin.


“Behavior of a Polymer Coil in a SCF Environment”, presented at 8\textsuperscript{th} Meeting on Supercritical Fluids-Chemical Reactivity and Material Processing in Supercritical Fluids, Bourdeaux, France, April 14\textsuperscript{th}-17\textsuperscript{th}, 2002. Co-authors T.P. DiNoia, M.A. McHugh, A. Garach, S.A. Tanner and I.-H. Park
Olin D. Velev
Assistant Professor
M.Sc., University of Sofia, Bulgaria (1989)
Ph.D., University of Sofia, Bulgaria (1996)

**Interests:** Colloid science and nanoscale engineering. Assembly of microstructures with photonic, optical and electrical functionality. Chemical and biological sensors.

**2001-2002 Publications**

**Publications (Refereed)**


**Book Chapter**


**Invited Presentations**


“Functional Microstructures and Devices via Controlled Nanoparticle Assembly”, *Department of Chemical Engineering, University of New Mexico*, April 2002.


**Contributed Presentations**


“Dielectrophoretic Assembly ofColloidal Particles into Functional Materials and Devices”, *ACS Spring 200w meeting, Orlando*, April 2002 (with S. O. Lumsdon, speaker and E. W. Kaler).


# Emeritus Faculty

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<th>Name</th>
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<tr>
<td><strong>Beatty, Kenneth O.</strong></td>
<td>10B Riddick</td>
<td>919-515-6398</td>
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<tr>
<td>R.J. Reynolds Professor Emeritus</td>
<td></td>
<td></td>
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<tr>
<td>B.S., Lehigh University</td>
<td><a href="mailto:kobeeatty@eos.ncsu.edu">kobeeatty@eos.ncsu.edu</a></td>
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<td>M.S., Lehigh University</td>
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<td>Ph.D., University of Michigan</td>
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<td>Heat transfer, thermodynamics, biomedical engineering, fire cause and origin</td>
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<td><strong>Felder, Richard M.</strong></td>
<td>224 Riddick</td>
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<td>Learning and teaching styles in engineering education, active and cooperative learning methods, engineering curriculum integration</td>
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<td><strong>Stannett, Vivian T.</strong></td>
<td>121 Riddick</td>
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<td>Dean Emeritus, Graduate School</td>
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<td>B.S., Chemistry, London</td>
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<td>Ph.D., Chemistry, Polytechnic Institute of Brooklyn</td>
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<td><strong>Interests:</strong></td>
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<td>Pure and applied polymer science, cationic polymerization, block and graft copolymerization, radiation chemistry of polymers, cellulosics, textile modification, transport in polymers</td>
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### Faculty Awards and Honors

**Lisa Bullard**
- ASEE-ERM Apprentice Faculty Grant (2002)

**Joseph DeSimone**
- 2002 John Scott Award, Board of Directors of City Trusts, Philadelphia, PA
- 2002 Carothers Award, Institute for Defense Analysis Faculty Program (2002-2003)
- Member, Board of Visitors, Carolina Environmental Program (2002-2003)
- Member, Ursinus College Board of Trustees (2001-2005)
- Member, National Research Council Board on Chemical Science and Technology (2002-2003)
- Founding Member, Board of Directors, Center for Environmentally Advanced Technologies (2002-2003)
- Editorial Board, Journal of Polymer Science (1999-)

**Christine Grant**
- Women of Note Inductee African American Cultural Center (2002)
- AIChE Minority Affairs Committee-National Distinguished Service Award (2001)

**Keith Gubbins**
- Visiting Professor of Chemical Physics, Laboratoire de Chimie Physique, Université Paris-Sud, Orsay, France, June 2001 - January 2002.
- Chercheur de Haute Niveau Award, French Ministry of Education, June 2001-February 2002

**Carol Hall**
- Elected Fellow of AIChE (2001)

**Jason Haugh**
- National Science Foundation CAREER Award

**Saad Khan**
- Alcoa Foundation Distinguished Engineering Research Award

**David Ollis**
- Sterling Olmsted Award

**George Roberts**
- Outstanding Teacher Award (2001-2002)

**Orlin Velev**
- Camille and Henry Dreyfus New Faculty Award (2001)
- Ralph E. Powe Junior Faculty Enhancement Award (2002)
### Courses Taught

#### Fall 2001

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#### Spring 2001

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#### First Summer Session 2001

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#### Second Summer Session 2001

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Visitors and Staff

Seminars Presented in the Department 2001-2002

**Fall 2001**

September 17, 2001
Prof. Christopher B. Gorman
“New Molecules and New Processes to Study Molecular Electronics Behaviors”
Department of Chemistry
North Carolina State University

September 24, 2001
“Engineering New Standards for Biocatalysis: Crossing Old Barriers with High Turnover”
Prof. Douglas S. Clark
Department of Chemical Engineering
University of California, Berkeley

October 1, 2001
“Combustion Synthesis of Advanced Materials”
Prof. Arvind Varma
Department of Chemical Engineering
University of Notre Dame

October 8, 2001
“Guiding Liquid Drops on Surfaces using Chemical Gradient”
Prof. Manoj K. Chaudhury
Department of Chemical Engineering
Lehigh University

October 22, 2001
“Dynamics of Aerosol Particles in Turbulent Flow”
Prof. Lance R. Collins
Department of Chemical Engineering
Pennsylvania State University

October 29, 2001
“From First-Principles to Catalytic Turnovers: Molecular Engineering Bimetals for Oxygenate Synthesis”
Prof. Matthew Neurock

**Spring 2002**

January 22, 2002
Warren L. McCabe Lecture
“Proteins that Nature’s Never Made”
David A. Tirrell
Division of Chemistry and Chemical Engineering
California Institute of Technology

January 28, 2002
“Degradable Poly(Ethylene Glycol) Hydrogels as Engineered Biomaterials”
Andrew T. Metters
Institute for Biomedical Engineering
Swiss Federal Institute of Technology (ETH) and University of Zurich

February 4, 2002
“Tailoring Surfaces for Directing Adsorption of Halides, DNA and Other Species: New Approaches for Chemical Sensing and Delivery”
Paul E. Laibinis
Department of Chemical Engineering
Massachusetts Institute of Technology

February 11, 2002

Department of Chemical Engineering
University of Virginia

November 19, 2001
“Bioprocessing at the Micro- and Nanoscales as a Discovery Tool”
Prof. Jonathan S. Dordick
Department of Chemical Engineering
Rensselaer Polytechnic Institute
“Dissolving Polymers in Supercritical Fluids: Why is it still a challenge?”
Mark A. McHugh
Department of Chemical Engineering
Virginia Commonwealth University
February 18, 2002

“Thermal Nonequilibrium Phenomena in a Polymer Solution”
Ramanan Krishnamoorti
Department of Chemical Engineering
University of Houston
February 25, 2002

“Anti-Fouling Functionalized Surfaces”
Stuart L. Cooper
Provost and Vice Chancellor for Academic Affairs
NC State University
March 4, 2002

“Guiding Liquid Drops on Surfaces using Chemical Gradient”
Manoj K. Chaudhury
Department of Chemical Engineering
Lehigh University

March 18, 2002
“Microcalorimetric, Spectroscopic, and DFT Studies of Hydrocarbon Reactions on Supported Metal Catalysts”
James A. Dumesic
Department of Chemical Engineering
University of Wisconsin-Madison

April 15, 2002
“First-Principles Analysis of the Electroreduction of Oxygen on Platinum”
Perla B. Balbuena
Department of Chemical Engineering
University of South Carolina

April 22, 2002
“Acid and Redox Catalysis on Oxide Nanostructures”
Enrique Iglesia
Department of Chemical Engineering
University of California at Berkeley
Visiting Researchers

Staff

Ms. Laurel Anderson
Ms. Sandra Bailey
Ms. Saundra Doby
Ms. Sheila Hayes
Ms. Gwen Johnson
Ms. Shirley Kow
Ms. Courtney Smith
Ms. Natalie Worth
Mr. Kit Yeung
Financial Summary

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The Department of Chemical Engineering gratefully acknowledges the support provided by the industries, government agencies, and foundations listed below:

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