# CBE 'Biofilm' Timeline Photos from the 2007 CBE Annual Report

<u>Editor's note</u>: I wish we could have gotten pictures of <u>everybody</u> in the report, but it just wasn't possible. So, if you can't find your picture—sorry! And if you did find your picture in the report—sorry! Please notify me if corrections are necessary, and I will be happy to revise this file. —Peg Dirckx, peg\_d@biofilm.montana.edu

#### Front cover

#### People, top, left to right:

Alison Rhoads, MS, C/EnvE, 2004

CBE archives

Ben Klayman, PhD, EnvE, 2007

CBE archives

Suriani Abdul Rani, MS, ChBE, 2006

CBE archives

Holly Reinemer Berg, undergraduate researcher

CBE archives

Pat Secor, undergraduate researcher;

PhD candidate, Cell Biology

CBE archives

#### People, bottom:

Eliora Bujari, visiting student, New York, 2007

Christopher Groth, visiting student, New York, 2007

CBE archives

### Microscope images:

Top left: Confocal Scanning Laser Microscopy

Susana Sanchez-Gomez, visiting researcher, 2007

Middle left: Stereomicroscopy

Alessandra Agostinho, staff researcher

Top right: Confocal Scanning Laser Microscopy

Steve Fisher, staff researcher

Bottom right: Confocal Scanning Laser Microscopy

Steve Fisher, staff researcher

## Page 2

Top: Phil Stewart, CBE director

CBE archives

Bottom: W.G. (Bill) Characklis, CBE founding director

Rob Wilke, Wilke Photographics

#### Page 3

Allan Hamilton, visiting researcher, Scotland

Rob Wilke, Wilke Photographics

Satoshi Okabe, PhD, CE, 1992

Gabriele Walser, MS, C/EnvE, 1990

Robert Huddleston, industry, Conoco

CBE archives

Robert Mueller, MS, C/EnvE, 1990; PhD, CE, 1994

W.G. Characklis Award, 1993

Rob Wilke, Wilke Photographics

Mike Trulear, PhD, CE, MSU, 1983

CBE archives

Rune Bakke, MS, EnvE, MSU, 1983;

visiting scientist, Norway

CBE archives

Kevin Marshall, visiting researcher, Australia

Rob Wilke, Wilke Photographics

Two unidentified industrial members, left,

and Bill Characklis, right

CBE archives

David Davies, MS, Micro, MSU, 1987; PhD, Micro, 1995

W.G. Characklis Award, 1996

CBE archives

### Page 4

**Grant Writing Group** 

CBE archives

#### Upper layer:

Diane Williams, staff

CBE archives

Ron Larson, faculty, ChBE

Rob Wilke, Wilke Photographics

John Sears, faculty, ChBE

Rob Wilke, Wilke Photographics

Warren Jones, faculty, CE

Rob Wilke, Wilke Photographics

#### From bottom left, up & around:

Frank Roe, staff researcher

Rob Wilke, Wilke Photographics

Susan Cooper, staff

CBE archives

Alexander (Sandy) Sharp, industry, Westvaco

W.G. Characklis Award, 1992

Rob Wilke, Wilke Photographics

Mike Winters, industry, Amoco Corporation

CBE archives

Al Cunningham, faculty, CE

CBE archives

Anne Camper, PhD, CE, 1995; faculty, CE

Special Recognition Award, 1994

Rob Wilke, Wilke Photographics

Zbigniew Lewandowski, faculty, ČE

CBE archives

Gordon McFeters, faculty, Micro

CBE archives

Peg Dirckx, staff

CBE archives

Nick Zelver, staff

Rob Wilke, Wilke Photographics

Phil Bremer, postdoctoral researcher, New Zealand

Rob Wilke, Wilke Photographics

### Page 5

Brent Peyton, PhD, ChE, 1992; faculty, ChBE

CBE archives

Paul Sturman, MS, C/EnvE, 1991; PhD, CE, 2004;

faculty, CE

CBE archives

Phil Stewart, faculty, ChBE; Director, 2005-

MSU News Services

Paul Stoodley, staff researcher

CBE archives

Gill Geesey, faculty, Micro

Rob Wilke, Wilke Photographics

Oskar Wanner, visiting researcher, Switzerland

Rob Wilke, Wilke Photographics

Marty Hamilton, faculty, Statistics

Rob Wilke, Wilke Photographics

Bryan Warwood, staff researcher

CBE archives

Rick Rosser, industry, Saudi Aramco

CBE archives

Robert Huddleston, industry, Conoco

W.G. Characklis Award, 1992

CBE archives

Alma Weightman, staff

Rob Wilke, Wilke Photographics

Britt Peschke Ide, NSF-REU, undergraduate;

MS, C/EnvE, 1996

CBE archives

Sara Sanderson, NSF-REU, undergraduate;

MS, C/EnvE, 1996

CBE archives

Bill Characklis

CBE archives

### Page 6

J.W. (Bill) Costerton, CBE director, 1993-2004

CBE archives

Rohini Srinivasan, MS, ChE, 1994

MSU News Services

Rick Veeh, PhD, Soil Sci, 1993

CBE archives

Dirk DeBeer, postdoctoral researcher,

The Netherlands

Rob Wilke, Wilke Photographics

Gary Horacek, industry, Nalco Chemical Co.

CBE archives

Bill McCoy, industry, Nalco Chemical Co.

TAC chair, 1992-94

CBE archives

Shannon Bakich, MS, Micro, 1995;

industry, S.C. Johnson & Son,

MSU News Services

James Bryers, faculty, ChE

Rob Wilke, Wilke Photographics

Eric Wentland, MS, ChE, 1995; d. 1996,

CBE archives

CSLM imaging, Paul Stoodley

### Page 7

Chris Wend, MS, C/EnvE, 1994; PhD, EnvE, 2000

W.G. Characklis Award, 1999

CBE archives

John Neuman, staff, laboratory manager

CBE archives

Mark Reinsel, PhD, ChE, 1995;

W.G. Characklis Award, 1994

CBE archives

David Chen, postdoctoral researcher, Taiwan

Rob Wilke, Wilke Photographics

Betsey Pitts, staff researcher

CBE archives

Elinor Pulcini, PhD, Micro, 2001

W.G. Characklis Award, 2000

CBE archives

Raj Mirpuri, PhD, ChE, 1995

W.G. Characklis Award, 1995

MSU News Services

Linda Robertson, industry, Nalco Chemical Co.

CBE archives

Robert Sharp, PhD, CE, 1995

W.G. Characklis Award, 1995

MSU News Services

Santiago Villaverde, visiting researcher, Spain Rob Wilke, Wilke Photographics Rodney Donlan, industry, Calgon; scientist, CDC

TAC Chair. 1994-96

Rob Wilke, Wilke Photographics

Darla Goeres, MS, C/EnvE, 1995; PhD, CE, 2006;

faculty, ChBE

CBE archives

Tricia Cook, staff

CBE archives Nick Cogan, MS, Math, 1996

CBE archives

James Howells, industry, Westinghouse-Savannah River,

CBE archives

Pierre Morin, visiting researcher, France

Rob Wilke, Wilke Photographics

Susan Olson, industry, Little Bear Laboratories

CBE archives

# Page 8

Bo Olesen, visiting researcher, Denmark

CBE archives

Jon Geiger, industry, Olin / Arch Chemicals

TAC Chair, 1996-98

CBE archives

Mark Burr, staff researcher

Rob Wilke, Wilke Photographics

Julie Vrany, MS, ChE, 1996

CBE archives

Snowbird Resort, UT

CBE archives

Bill Adochio, NSF-REU undergraduate

CBE archives

Jayne Billmayer, undergraduate researcher

CBE archives

Randy Hiebert, industry, MSE, Inc.; staff researcher

CBE archives

Jeralyn Brodowy, staff

CBE archives

Robin Gerlach, PhD, C/EnvE, 2001; staff researcher;

faculty, ChBE

W.G. Characklis Award, 2000

CBE archives

Ching-Tsan Huang, postdoctoral researcher, Taiwan

Rob Wilke, Wilke Photographics

SEM, Rick Veeh

Illustration of biofilm structure, Peg Dirckx

### Page 9

Becky Herigstad, MS, Statistics, 2001

CBE archives

Phil Butterfield, PhD, CE, 1998

W.G. Characklis Award, 1997

CBE archives

Brian Ellis, PhD, Micro, 1999

W.G. Characklis Award, 1997

CBE archives

Dongxin (Karen) Xu, PhD, Micro, 1999

CBE archives

Ernest Visser, PhD, CE, 1998

CBE archives

Mike Franklin, faculty, Micro

Rob Wilke, Wilke Photographics

Joanna Heersink, undergraduate researcher CBE archives Haluk Beyenal, visiting researcher, Turkey; staff researcher

CBE archives

Erin Karakas, undergraduate researcher CBE archives

Joe Sauer, industry, Albemarle Corp.

CBE archives

Ursula Charaf, industry, S.C. Johnson

TAC Chair, 1998-2000

**CBE** archives

Calvin Abernathy, PhD, CE

W.G. Characklis Award, 1998

CBE archives

Scott Burnett, staff research assistant;

industry, Ecolab

CBE archives

Wayne Subcasky, industry, Chevron

CBE archives

### Page 10

Pam McLeod, NSF-REU undergraduate researcher CBE archives

Tami Capeletti, industry, Westinghouse-Savannah River CBE archives

Marianne Huntley, industry, Warner Lambert Co.

CBE archives

Tom Palys, industry, Arch Chemicals

CBE archives

Ace Baty, PhD, Micro, 1999

CBE archives

Paul Berube, NSF-REU undergraduate

CBE archives

Pradeep Singh, visiting researcher, University of Iowa CBE archives

Lone Mountain, Big Sky, Montana

CBE archives

Rotating annular reactor

CBE archives

### Page 11

Christy Rabinovitch, undergraduate researcher CBE archives

Mary Fitzgerald, NSF-REU undergraduate;

staff researcher

CBE archives

Margie Hansen, staff

CBE archives

Mark Shirtliff, postdoctoral researcher

CBE archives

Carl Erkenbrecher, industry, DuPont

CBE archives

Judel Buls, MS, C/EnvE, 2000

CBE archives

Eric Kern, PhD, Micro, 2001

W.G. Characklis Award, 2001

CBE archives

John Komlos, PhD, CE, 2001

W.G. Characklis Award, 2001

CBE archives

Luanne Hall-Stoodley, staff researcher

Rob Wilke, Wilke Photographics

Barry Pyle, faculty, Micro

MSU News Services

Richard Walter, industry, Dow Chemical

TAC Chair. 2000-02

CBE archives

Kevin Kowalk, NSF-REU undergraduate

CBE archives

Abduhlmohsen Al-Human, industry, Aramco Services

CBE archives

## Page 12

Nurdan Yurt, PhD, ChE, 2002

W.G. Characklis Award, 2002

CBE archives

Erin Werner, undergraduate researcher

CBE archives

Bob Orr, industry, Tyco Healthcare

TAC Chair, 2002-04

CBE archives

Mel Czechowski, industry, Church & Dwight

TAC Chair, 2004-2006

CBE archives

Alison Rhoads, MS, C/EnvE, 2004

CBE archives

Birthe Kjellerup, visiting researcher, Denmark

CBE archives

Georgia Boriello, visiting researcher, Italy

CBE archives

Woody Star, undergraduate researcher

CBE archives

Thomas Borch, PhD, PS&ESci, 2003

W.G. Characklis Award, 2003

CBE archives

Stephen Hunt, PhD, ChBE, 2004

W.G. Characklis Award, 2003

CBE archives

Margo Adgie, visiting student, New York

CBE archives

Bioglyphs plate

MSU-Bozeman Bioglyphs Project

Amber Harrer Broadbent, undergraduate researcher

CBE archives

Patrick Norris, MS, ME, 2004

CBE archives

Avi Shantaram, MS, C/EnvE, 2005

CBE archives

Abbie Aiken Richards, visiting PhD, ChBE;

faculty, ChBE

CBE archives

Christoph Fux, visiting researcher, Switzerland

CBE archives

# Page 13

Rocky Ross, faculty, CS

Rob Wilke, Wilke Photographics

Jackie Whitaker Hilyard, NSF-REU undergraduate;

staff researcher

CBE archives

Adie Phillips, MS, C&EnvE, 2003; staff researcher

CBE archives

Christine Foreman, faculty, LRES

CBE archives

Sarah Codd, staff researcher; faculty, I&ME

Elizabeth Brock, MSU-COE

Joe Seymour, faculty, ChBE

MSU News Services

Ross Carlson, staff researcher; faculty, ChBE CBE archives

Bastian Wittstock, visiting student, Germany CBE archives

Kelli Buckingham-Meyer, undergraduate researcher; staff researcher

CBE archives

Cindy Morris, visiting researcher, France CBE archives

Garth James, staff researcher; faculty, ChBE CBE archives

Cory Rupp, undergraduate researcher NSF Graduate Fellowship award, 2004

MSU News Services

Nahit Atkas, visiting researcher, Turkey CBE archives

Diane K. Walker, MS, CE, 2004; staff researcher CBE archives

Raaja Raajan Angathevar-Veluchamy, MS, ChBE, 2006 CBE archives

Erik Alpkvist, visiting student, Sweden CBE archives

Laura Purevdorj-Gage, PhD, Micro, 2004 CBE archives

#### Page 14

Alessandra Agostinho, visiting researcher, Brazil; staff researcher

CBE archives

Cinnamon Spear, undergraduate researcher CBE archives

Ellen Swogger, undergraduate researcher CBE archives

Ben Klayman, PhD, EnvE, 2007

W.G. Characklis Award, 2005

CBE archives

Vildan Caner, visiting researcher, Turkey, CBE archives

Suriani Abdul Rani, MS, ChBE, 2006 CBE archives

Jason Chambless, PhD candidate, ChBE, CBE archives

Ruth Cutright, industry, W.L. Gore CBE archives

Andreas Nocker, postdoctoral researcher CBE archives

Laura Jennings, undergraduate researcher;

visiting PhD candidate, Micro CBE archives

Mike Nolop, undergraduate staff, computer systems CBE archives

Mohiuddin Taimur Khan, postdoctoral researcher CBE archives

Joao Xavier, visiting researcher, Portugal CBE archives

Roy Hozalski, visiting researcher, Minnesota CBE archives

Pat Secor, undergraduate researcher;

PhD candidate, Cell Biology

CBE archives

Jennifer Faulwetter, PhD candidate, Micro, CBE archives

Audrey Corbin, visiting researcher, France; staff researcher

CBE archives

## Page 15

Shoji Takenaka, visiting researcher, Japan CBE archives

Jeyong Yoon, visiting researcher, Korea CBE archives

Andrea Hartman, undergraduate researcher CBE archives

Liz Sandvik, MS candidate, ChBE CBE archives

Chirag Shah, industry, Tyco Healthcare CBE archives

Dave Fink, industry, Tyco Healthcare CBE archives

Smita Sutrave, staff researcher CBE archives

Lynne Leach, postdoctoral researcher CBE archives

Brenda Grau, postdoctoral researcher CBE archives

Dinesh Aggarwal, industry, Tyco Healthcare CBE archives

Sabrina Behnke, MS candidate, Micro CBE archives

Priscilla Sossa, visiting student, Chile CBE archives

Willy Davison, PhD candidate, ChBE W.G. Characklis Award, 2006 CBE archives

Reed Taffs, MS candidate, ChBE CBE archives

Diane Gray, industry, Invitrogen/Molecular Probes CBE archives

Sidy Ba, MS candidate, C/EnvE CBE archives

Shahed Rahmann, PhD candidate, C/EnvE CBE archives

### Page 16: Back Cover

Daniel Swanson, undergraduate researcher CBE archives

Ben Klayman, PhD candidate, EnvE, and Paul Volden, undergraduate researcher CBE archives

Matthew Fields, faculty, Micro CBE archives

Susana Sanchez-Gomez, visiting researcher, Spain CBE archives

Jeri Lynn Williamson, undergraduate researcher CBE archives

Melinda Clark, PhD candidate, Micro CBE archives

Abdoulaye Camara, visiting researcher, Mali CBE archives

Christopher Groth, visiting student, New York CBE archives

Diana Amari, visiting student, New York CBE archives

Eliora Bujari, visiting student, New York CBE archives

Mike Sutton, MS candidate, EnvE CBE archives

Isaac Klapper, faculty, Math

Paul Stoodley, collaborating faculty, CGS-ASRI, Pennsylvania

Phil Stewart. CBE director

CBE archives

Lourdes Jimenez, visiting researcher, Spain

CBE archives

Logan Schultz, undergraduate researcher

CBE archives

Anitha Sundararajan, PhD candidate, Micro

CBE archives

Nic Beck, undergraduate researcher

CBE archives

Sutapa Barua, MS, ChBE, 2007

CBE archives

Steve Fisher, staff researcher

CBE archives

Alex Blanchard, industry, Procter & Gamble

CBE archives

Saba Alniemi, undergraduate researcher

CBE archives

Thomas Neu, academic visitor, Germany

CBE archives

Stewart Clark, PhD candidate, Micro

W.G. Characklis Award, 2007

CBE archives

Skye Saylor, undergraduate, graphics

CBE archives

Matthew Gervais, industry, Unilever

CBE archives

Hans-Curt Flemming, academic visitor, Germany

CBE archives

Lindsev Lorenz, staff researcher

CBE archives

Natasha Malette, PhD candidate, ChBE

Jennifer Hornemann, PhD candidate, ChBE

CBE archives

Casey Chebator, industry, Covidien

CBE archives

Ayrat Ziganshin, visiting researcher, Russia

CBE archives

James Folsom, postdoctoral researcher

CBE archives

Laura Wheeler, MS candidate, ChBE

CBE archives

Greg Characklis, visiting faculty, North Carolina

CBE archives

John Baker, staff, IT

CBE archives

Carrie Ermitano, industry, Ecolab

CBE archives

Lindsay Danreuther, undergraduate researcher

CBE archives

James Bardwell, industry, enturia

CBE archives

Curious Baby George, mascot

CBE archives

Daniel Rhoads, visitor, Southwest Regional

Wound Care Center, Lubbock, TX

CBE archives

Kelly Kirker, staff researcher

CBE archives

Richard Strayer, industry, NASA

CBE archives

Recep Avci, collaborating faculty, Physics

CBE archives

Elinor Pulcini, staff researcher

CBE archives

Andrew Mitchell, faculty, CE

CBE archives

Tara Gunsch, staff

CBE archives
Laura Boegli, staff researcher

CBE archives

Jeremy Yarwood, industry, 3M

CBE archives

Jonathan Rice, undergraduate researcher

CBE archives

Joanne O'Keefe, industry, Unilever

CBE archives

Peter Suci, faculty, Micro

CBE archives

Ben Hisey, undergraduate researcher, and

Sidy Ba, MS candidate, C/EnvE

CBE archives

Kim Browne, undergraduate staff

CBE archives

Brent Peyton, faculty, ChBE

CBE archives

Al Cunningham, faculty, CE

CBE archives

Nicole David, industry, Covidien

CBE archives

Anne Camper, faculty, CE & Associate Dean, COE

CBE archives

Peg Dirckx, staff, and

Erin Field, PhD candidate, Micro

CBE archives

Robert Marley, Dean, College of Engineering

CBE archives