

scope

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A LOOK INSIDE THE COLLEGE OF PHYSICAL AND MATHEMATICAL SCIENCES



The science behind human health

NC State researchers make significant contributions where the physical, mathematical and computational sciences intersect with the biomedical sciences

The physicist and his flute

Some physicists are most at home alone in their office or laboratory. Marco Buongiorno-Nardelli is equally at ease on stage in front of hundreds of people—as long as he has his flute. Buongiorno-Nardelli, NC State associate professor of physics, spends his free time playing the flute in ELM Collective, a unique Raleigh-based jazz band.

Comprised of seven musicians and composers from five nations and four continents, ELM Collective's music is a fusion of jazz and "world music" that is influenced by the diverse backgrounds and tastes of its members. The instruments and notes come together so smoothly, it's hard to believe the group formed completely by accident.

"I've always played the flute and been fond of jazz music," Buongiorno-Nardelli says. "When I moved to downtown Raleigh, it just so happened that my next door neighbor was Jim Crew. We started to play together and add new members along the way."

Jim Crew, who plays piano and accordion in ELM Collective, is an accomplished professional musician who has performed at major jazz festivals and composes music for dance, theater and film trailers, including *King Kong*, *The da Vinci Code* and *The Lion King*.

In addition to the Italian-born Buongiorno-Nardelli and Raleigh native Crew, the rest of the group consists of Naji Hilal (oud, violin) from Lebanon, Ed T. Butler (drums) from Baltimore, Alex Gorodezky (guitars) from Ukraine, Ernie Donadelle (bass) from New York, and Frake "bakru" Hunsel (percussions) from Suriname.

When he's not rehearsing or performing with ELM Collective, Marco Buongiorno-Nardelli is a widely respected teacher and researcher in the physics of materials. His most recent publication was co-authored with postdoctoral researcher Matías Nuñez. This paper, which appeared in the journal, *Physical Review Letters*, analyzed the polar-

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ABOVE: Marco Buongiorno-Nardelli

LEFT: ELM Collective



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ization of ferroelectric thin films. Their findings suggest that, in creating tiny electrical devices, the use of extremely small components comes with the possibility of decreased effectiveness.

ELM Collective's first compact disc (shown below), titled *Ecco La Musica*, is available for purchase on the online music store CD Baby: <http://cdbaby.com/cd/elm-collective>. For more information on the group, including complete free audio clips and concert dates, visit www.elmcollective.org or www.myspace.com/elm-collective. □

